

**"THE IMPACT OF RIGHTS ISSUES ON SECURITY  
PRICES - NAIROBI STOCK EXCHANGE (NSE) "**

**BY  
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**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN  
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## DECLARATION

This project is my original work and has not been presented for a degree in any other university.

Signed..........Date .....18<sup>th</sup> Sept 2006.....

**Cheruiyot Korir Vincent**

This project has been submitted for examination with my approval as the university supervisor.

Signed..........Date .....22nd Sept 2006.....

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# DEDICATION

**To my loving parents and siblings,**

**&**

**To my fiancée**

# ACKNOWLEDGEMENT

The following groups of people have contributed to the success of this research project.

My supervisor Luther Otieno, whose dedication and constant guidance kept my self belief high in completing the project. His availability even at late hours has had an enormous contribution to the success of this research.

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My family and friends who have always been very understanding and covering up for me while working on this project.

To you all, may our good Lord continue to bless you.

# ABSTRACT

This research project examines the impact of rights issue for companies listed in the Nairobi stock Exchange (NSE). Research on the impact of rights issue across the world has revealed conflicting results. The exact impact for the companies listed in the NSE is however unclear. These kinds of research are useful mainly to potential investors and corporate managers who may be faced with a rights issue paradox and rights issue financing option respectively.

A sample of six companies from the Nairobi Stock exchange (NSE) for the period of 1<sup>st</sup> April 1996 to 31<sup>st</sup> December 2002 is selected and the market model is used to generate the excess returns. The constant parameters of the market model are computed from pre event data using the GARCH (**G**eneralized **A**uto**R**egressive **C**onditional **H**eteroscedasticity) model, a superior analytical technique that incorporates data breaks. A competing method of Least Squares is also used to compare findings. The significance of the findings is tested using the two tailed t statistic.

The overall findings strongly confirm\* that rights issues in the NSE have information content. The nature of the information is negative but the extent is varied across the sample like other findings across the world. The implication of these findings is that companies issuing rights must release sufficient and relevant information to the market for proper interpretation of the issue.

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# 1.0 INTRODUCTION

## 1.1 Background

Listed corporations around the world typically raise additional external equity capital from either existing or external investors. Rights issue is a commonly used method in diverse European and international capital markets to raise equity from existing shareholders. Mc Clure (2005) defines a rights issue as an invitation to existing shareholders to purchase additional shares in the company. This type of issue gives existing shareholders securities called “rights” which gives them the right to purchase new shares at a discount to the market price on a stated future market date.

Companies use rights issues to raise cash for profitable projects e.g. East Africa Breweries (EABL) and Kenya Commercial Bank (KCB) while others use it to retire or pay down debt e.g. Uchumi Supermarkets, especially when they are unable to borrow more money. Companies can also issue rights when the management thinks that the stock is overvalued.

Regulatory requirements may force the management of companies to sell equity e.g. Banks, have minimum equity capital requirements imposed by the regulating authorities to reduce the probability that they will become insolvent and raise the cost of deposit insurance programs to taxpayers. Regulated utilities (gas & electric, telephone) often are told what capital structure they must have as part of the process of setting regulated product prices.

Corporate control motivations may also lead to seasoned equity sale i.e. selling stock to a diffuse group of outsiders will weaken the control of outside stockholders. Similarly selling stock to a single large block holder will create a new “monitor” for management (or a friendly 'white knight' to shelter management from unfriendly (raiders).

Studies on rights issues show that stock price reaction to rights issues varies substantially across the world. Whereas certain countries report a reduction in the returns e.g. Finland and Japan, others record an increase e.g. Sweden. Moreover,



certain countries have recorded both increase and reduction e.g. the USA and the UK, making the impact of a rights issue on security prices totally unclear. The assumed information content of a rights issue affects the direction that security prices take. When the rights issue is used to raise funds for positive NPV projects, the income earning ability of the firm is enhanced hence the security prices may go up. If on the other hand the rights issue is used for non profitable ventures, then the security prices may fall if that is the only information being used.

The mechanics of a rights issue is best illustrated by the example below. Assume that an investor has 1,000 shares in Wobble Telecom, each with a market value of Kshs 5.50. The company wishes to raise Kshs 30 Million by issuing three million shares to existing shareholders at a price of Kshs 3 each. The issue is a 3 to 10 rights issue i.e. for every 10 shares held, you are offered another three at a discounted price of Kshs 3.

The Investor has three options;

**Subscribe to the rights in full** – The investor can subscribe to a max of 300 shares at a total price of  $(\text{Kshs } 3 \times 300) = \text{Kshs } 900$ . Theoretically the price of the shares will not remain at Kshs 5.5 after the issue is complete as a result of the dilution due to the increased number of shares issued. To ascertain if the rights issue does infact give a material discount, we estimate the diluted share price.

1,000 shares @ 5.50 = Kshs 5500

300 new shares @3 = Kshs 900

Value of 1300 shares = Kshs 6400

Theoretical Ex rights value per share = Kshs 4.92

The general equation for computing the theoretical ex rights share price is shown in appendix A.

**Ignore the Rights Issue** – This is done by allowing the rights to expire. This option is taken when an investor does not wish to maintain a proportional equity stake after the rights offer.

**Sell the rights** – In cases where the rights are transferable i.e. *renounce able rights*, the investor can sell the rights and make a capital gain based on an estimated ex rights price.

Apart from transactions costs and taxes, an investor should be indifferent between selling rights in the market or holding and exercising them. The drop in stock price is due to the value of the rights. If they have no value, then there will be no stock price effect (analogous to an 'ex-dividend' drop in stock prices), and no shares may be sold.

Rights issue can either be underwritten or not. In a non-underwritten rights offering, the firm avoids paying underwriter fees by marketing the new shares through current shareholders, but the gross proceeds of the offering are not guaranteed. In an underwritten rights offering, sometimes called a standby underwritten offering, the firm also issues rights, but a standby underwriter guarantees the gross proceeds by agreeing to purchase and resell all shares not marketed through the rights method. In an underwritten public offering, the issuer sells all the new shares directly to the underwriter, who, in turn, resells them to investors.

Njoroge (2003) notes the main advantage of rights issue as a cost effective method of offering to the public. A comparison to other methods shows up to two and half times savings.

<b>Type of Offering</b>	<b>Costs (% of Proceeds)</b>
Underwritten (firm commitment)	6.2%
Rights & Standby Underwriting	6.1%
Rights Issues	2.5%

Since rights issue are priced below the market value, they have an intrinsic value. Rights issues also allow the current shareholders to maintain the proportion of their shareholding because of control. If the shareholder is not interested in taking the rights, they can be sold separately.

The main disadvantage of rights issue as identified by Kothare (1997) is the indirect costs associated with capital gain taxes, transaction costs and increased bid-ask spread.

Event studies can be used to measure the impact of a specific event on the value of a firm using financial data. The impact of a rights issue can therefore be measured using an event study.

## **1.2 Statement of the Problem**

Rights issues is not a new research development in financial studies yet its results are as varied as where and when the issues have been done. Researches on the direction that security prices take after a rights announcement or after an issue are varied across the world with markets exhibiting conflicting results over time. Moreover, markets considered similar in terms of efficiency and level of development generate varied and inconclusive results.

Studies in Korea, Finland and Japan have documented an appreciation in price while those in the Sweden and developing markets have recorded a negative reaction. The United States and UK record mixed results of both negative and positive reaction.

In Singapore, Dawson (1984) used monthly data for 85 issues for the period 1975 – 1983 and recorded a positive price effect. Similar results were reported by Ariff and Finn (1989).

Loderer and Zimmermann (1988) record a positive announcement effect in Switzerland similar to the findings of Kang (1990) in Korea. Kang (1990) reports a significant increase in asset prices during and around the rights issue announcement dates.

Ball, Brown and Finn (1977), Berglund, Liljebloom, and Wahlroos (1987), Tsangarakis (1996), Bøhren, Eckbo, and Michalsen (1997) provide evidence of a positive price effect around rights offerings announcements in Australia, Finland, Greece, and Norway, respectively.

Findings in the US are conflicting. While Jung, Kim and Stulz (1996) record a 3-4% average decline over a period of two days after a rights issue announcement, Scholes (1972) records otherwise. He reports a rise then an insignificant fall of upto 0.3%.

For the UK, Levis (1995) records a significant negative three day return. Other findings by Wolfe, Daliakopoulos, and Gwilym (1999) report a significantly negative two-day effect similar to those of Slovin, Sushka, and Lai (2000) who show that rights offerings in the U.K. characterized by high shareholder take-up (participation) do not affect firm value, while rights offerings that elicit lower shareholder take-up have significantly negative announcement effects. This is contrary to the findings of Marsh (1979) who reports large positive abnormal returns before the announcement of the issue, but a statistically insignificant setback in the months surrounding the issue.

The variances and disparity in results highlighted above and discussed further in the literature review section, leaves a lot to be desired. For the Nairobi Stock exchange (NSE), rights issue is gaining momentum yet the impact of rights issue is not satisfactorily addressed, leading to the problem question; what's the impact of rights issue on security prices in the NSE? Following from a previous research by Njoroge (2003), a different methodology is used over the same period to ascertain the findings of that study. The findings of this research and others before it will give direction in answering the problem statement above.

### **1.3 Hypothesis**

The hypothesis for this research is; “*Rights Issue have information content*”

### **1.4 Objectives of the Project**

The main objective is to establish the security returns around the rights issue announcement.

### **1.5 Justification & Importance**

As the use of rights issue to raise capital in the Kenyan market gains momentum, no much financial studies on the market exists to back it up. Currently a research by Njoroge (2003) only exists. While more research is necessary for comparison with developing and developed markets, the total impact of new factors on security prices

in a rights issue needs to be researched further and clarified in the light of new developments in the market and IT technology.

Though a rights issue research on the NSE has been done before, certain key fundamentals have changed and new developments in data analysis techniques warrant a similar research to establish more conclusive and indicative results in light of conflicting findings elsewhere.

These include;

- GARCH (General AutoRegressive Conditional Heteroscedasticity) Model is the data analysis technique to be used in this research. This technique is more superior than the linear regression method used by Njoroge 2003 in the following aspects;
  - GARCH Model assumes data breaks that are ignored by linear regression.
  - GARCH model is non linear and assumes that variances are time varying and uses past variances and past variance forecasts to forecast future variances.
- The level of awareness of the NSE as an investments vehicle among potential investors is higher than 3 years ago. This is attributed to the continuous marketing campaigns done by the NSE and CMA which has infact increased the level of activity in the exchange.
- More Companies are now appreciating the Stock Exchange as a source of cheap finance e.g. Bonds by Safaricom, Athi-River Mining, Faulu Micro Finance e.t.c. Rights issue is a cheap option the listed companies could use.

The main contribution of this research to Finance Literature is in expanding the limited work on security price reaction to rights issues in the NSE. Further, the research will prove important to the following class of people;

- **Investors** – The results of this study coupled with other considerations will give a clear guide to investors on making informed decisions when faced with a rights issue paradox.
- **Investment Bankers** – As the bankers try to price the rights, an indication of the possible direction of the Ex rights security price will be very crucial.
- **Corporate Managers** – The management of companies may wish to examine potential share price reaction as they prospect to using a rights issue to raise capital.
- **Others include;** Academicians, Governments, Capital Markets Authorities and other regulatory institutions.

## **2.0 LITERATURE REVIEW**

### **2.1 Introduction**

Basic finance theory categorically prescribes valuation of assets in perfect markets as a direct function of future cash flow streams only. This implies independence to the financing alternatives taken for a positive NPV project and dependence only on income earning ability of the project. However, Empirical studies described reveal otherwise, and a number of theories and hypothesis put forward to and explain asset price behaviour with respect to secondary issues are also discussed below.

### **2.2 Theories & Hypothesis of Price Behaviour to Rights Issues**

Though the reasons for these varied results across countries could be attributed to a number of factors;

- The purpose of the funds raised from the rights issue,
- Alternative flotation methods available.
- Nature of offer i.e. fully underwritten or standby underwritten.
- State of the financial market i.e. efficiency, liquidity e.t.c
- The varied regulatory and tax policies across markets

Certain theories that cater for these factors have been put forward to try and explain the observed results.

#### **2.2.1 Transactional Cost Hypothesis (TCH)**

The Transactional Cost Hypothesis (TCH) proposed by Kraus & Stoll (1972) assumes that-security demand is perfectly elastic but that security sales entail transaction costs, because it is necessary to search for buyers, to compensate them for portfolio adjustment costs, and to inventory securities, keep records, and clear trades. When an equity sale is not intermediated, transaction costs manifest themselves as a temporary price decline that is necessary to attract buyers; when a security sale is intermediated, the intermediary is compensated directly for transaction costs, and final buyers purchase the securities at the prevailing market price. Thus, according to the TCH, non intermediated sales are associated with temporary price drops, while

intermediated sales do not affect the market price. The TCH therefore suggests an explanation for the abnormal price performance in underwritten rights offerings.

On the one hand is the underwritten public offering, in which the syndicate is compensated for intermediating the entire security sale, off the exchanges, and buyers of new shares pay no transaction costs and incur no taxes. On the other hand is the underwritten rights offering, which is typically 90 percent intermediated by stockholders, through the exchanges, who receive no compensation but who must compensate buyers for brokerage fees and other liquidity costs and must also pay taxes on any capital gains realized on the rights. Thus, under the TCH, the offering-period price drops for underwritten rights can be reconciled with the lack of any offering-period price effects for underwritten public offerings.

### **2.2.2 Price Irrelevance Hypothesis – Brealey and Myers (1991)**

The Price Irrelevance Hypothesis suggests that equity pricing does not possess information content. In perfect markets, the terms of the rights issue are irrelevant to the shareholders wealth. The fear of an issue failure leads to a situation where the price before maturity < Market price. Findings by Eckbo and Masulis (1992) support this hypothesis.

The empirical implication is summarised as follows;

Daily announcement return firm issuing at low price = daily announcement return firm issuing at high price.

### **2.2.3 Signalling Hypothesis - Heinkel and Schwartz (1986)**

Signalling Hypothesis suggests that the issue price of a security provides a signal on the quality of the issuing firm. The subscription discount is a signal about the firm's quality i.e. target asset price or fair value. The credibility of the signal is compromised since a too high subscription price may cause a failure of the issue. Findings by Loderer and Zimmermann (1988) weakly support this hypothesis.



The empirical implication is summarised as follows;

Daily announcement return firm issuing at low price  $\neq$  daily announcement return firm issuing at high price.

Another type of signalling is the quasi-split effect, which signals a large increase in the dividend yield. Several studies such as Levy and Sarnat (1971) and Patterson and Ursel (1993) document the quasi-split effect, also called stock dividend effect or dilution effect. Hietala and Löyttyniemi (1992) report the quasi-split effect as the major determinant of the average positive market reaction to the announcements of Finnish rights offerings. In his study of the Italian market reaction to equity rights issues, Bigelli (1998) finds that the dividend increased signalled by the quasi-split effect explains almost 30 percent of the cross-sectional variation of the abnormal returns.

#### **2.2.4 Information Effects**

Njoroge (2003) notes that equity issues can be interpreted as favourable news about a new positive NPV project. This leads to the re-evaluation of the firm's stocks leading to a positive reaction. Large issues are associated with large projects linking the price reaction to the size of issue. Tsangarakis (1996) records positive response to rights issues providing empirical support for this hypothesis. In addition, investors, especially those in economies with very high economic growth rates, may interpret rights issues as favourable news about the firm's investment opportunities. Because existing stockholders must commit the additional capital, rights issues attest to the stockholders' confidence in their own firm's future, particularly if the shares are closely held. Therefore, investors may perceive rights issues as a signal that the firm has discovered new positive NPV projects, which would cause a positive valuation of the firm's shares.

In their model, Miller and Rock (1985) imply that market reaction to external financing is more negative, the greater the size of the offer and any larger than expected external financing by the firm reveals a small than expected current operating cash flow, which constitutes negative news to the market about current and expected future cash flows.

The price pressure hypothesis contends that selling pressure drives down a firm's share price when it announces plans to issue new shares and the market may respond negatively when mature firms with limited growth opportunities announce their intention to issue new shares.

The information level difference about the performance of a firm between managers and investors leads to situation known as adverse selection. Managers are better informed than outside investors. The drop in prices at offering announcements suggests that equity issues do in fact reveal negative information to the market. Based on results from U.S. data, this adverse selection problem is greater for a firm committing to seasoned equity offers than for rights offerings. According to Heinkel and Schwartz (1986) as well as Eckbo and Masulis (1992), managers of firms using rights offering have more favorable private information than do those firms choosing firm commitment offerings. Hence, the market reaction to announcements via a rights offering should be less negative than a cash offer.

The negative information effect can be mitigated upon when a high shareholder participation occurs reducing the adverse section costs as described by Myers and Majluf (1984).

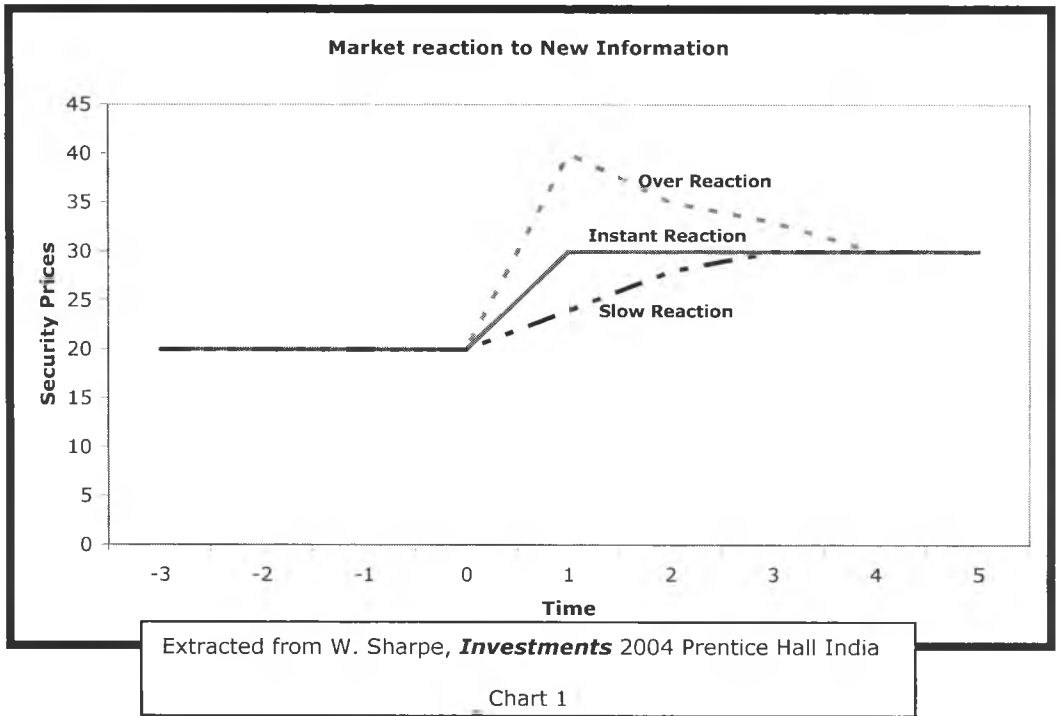
### 2.3 Market Efficiency

Market efficiency denotes how new information is quickly and widely disseminated, thereby allowing security prices to adjust rapidly and reflect its investment value. The information that determines the form of efficiency is detailed below.

<b>Form Of Efficiency</b>	<b>Information Reflected in Security Prices</b>
Weak	Past Security information and prices
Semi Strong	All publicly available information
Strong	All available information – public & Private

Sharpe W (2004) states that a market is efficient with respect to a particular set of information if it's impossible to make abnormal profits (other than by chance) by using this set of information to formulate buying and selling decisions.

The information effect occurs following a rights offering announcement leading to any of the following situations depending on the market efficiency;



## 2.4 Evidence from selected studies

Prior studies across the globe in the area of seasoned offerings through rights issues show varied findings.

Brous and Kini (1994) report abnormal returns of negative 2.88 percent for their full sample of 379 equity offerings by firms listed on the New York Stock Exchange or American Stock Exchange over the 1979-1985 period

In Singapore, during the period 1975 to 1983, Ariff and Finn (1989) report a risk-adjusted return of 10.42 percent over the period -3 to +1 months surrounding rights announcement. This study was based on 85 issues. Masulis and Korwar [1986] find conflicting results of -2.5% announcement effect for 424 issues while Dann and Mikkelsen [1984] find -1.6% for 36 issues (they mainly focus on offerings of convertible debt). Asquith and Mullins [1986] record a 2 day announcement effect = -2.7%.

Slovin (2000) distinguished between insured and uninsured rights in the UK and found a statistically significant (-2.9%) for insured rights and (-4.96%) for uninsured offerings. Gajewski and Ginglinger (1998) records significant negative returns in France. While working on Norwegian data Bohren et al (1997) documents an insignificant excess return of (-0.4%) for 89 standby rights offerings but statistically significant excess return of 2% for 37 uninsured offerings.

Hansen (1988) notes that firms that made underwritten rights offerings paid lower underwriter fees but incurred significantly larger price drops just prior to the offering than did firms making underwritten public offerings. The price decline associated with underwritten offerings is more than 4% in the 20 days just prior to the sale of new shares and with a price rebound of the order of 2% or more soon thereafter. The price rebound is in direct contrast with several other studies of underwritten issues but supports the Transactional Cost Hypothesis.

Khondkar & Gara (1998) record in their findings that firm quality does not have a significant impact on the degree of price discounting. Relative firm market valuation is a key determinant of the magnitude of discounting in setting the issue price. It's this issue price discount that affects the level of asset price decline i.e. firms that provide a lower issue price discount experience a lower stock-price decline following the issuance as compared to firms offering a higher price discount.

In his report based on data from 1970 – 1987, Kothare(1991) reports significantly negative rights issue announcement period risk adjusted abnormal returns. Scholes (1972) using data from the US market, finds that stock prices rise before a rights issue and fall by 0.3% during the month of the issue. Early studies e.g. Rao reports

Hanson's paper of a fall of approximately 4% (1989) while recent studies show the fall as being less e.g. Eckbo and Masulis (1992) report minor losses for non-underwritten issues

Kang and Stulz (1996) observe a significant positive announcement effect of 2.2% for a small sample of 28 issues in Japan. Tsangirakis (1996) reports a 4% positive return in 59 offerings in Greece.

## **2.5 Event Studies**

An event study can be used to measure the impact of a specific event on the value of a firm using financial market data. The usefulness of such a study comes from the fact that, given rationality in the marketplace, the effects of an event will be reflected immediately in security prices. Thus a measure of the event's economic impact can be constructed using security prices observed over a relatively short time period.

Event studies have many applications. In accounting and finance research, event studies have been applied to a variety of firm specific and economy wide events. Some examples include mergers and acquisitions, earnings announcements, issues of new debt or equity, and announcements of macroeconomic variables such as the trade deficit

The initial task of conducting an event study is to define the event of interest and identify the period over which the security prices of the firms involved in this event will be examined i.e. the event window. It is customary to define the event window to be larger than the specific period of interest permitting the examination of periods surrounding the event. In practice, the period of interest is often expanded to multiple days, including at least the day of the announcement and the day after the announcement. This captures the price effects of announcements which occur after the stock market closes on the announcement day. The periods prior to and after the event may also be of interest.

Appraisal of the event's impact requires a measure of the abnormal return. The abnormal return is the actual ex post return of the security over the event window

minus the normal return of the firm over the event window. The normal return is defined as the expected return without conditioning on the event taking place. For firm  $i$  and event date  $\zeta$  the abnormal return is;

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau} | X_{\tau})$$

Where  $AR_{i\tau}$ ,  $R_{i\tau}$ , and  $E\{R_{i\tau} | X_{\tau}\}$  are the abnormal, actual, and normal returns respectively for time period  $X$ ,  $X_T$  is the conditioning information for the normal return model.

Given the selection of a normal performance model, the estimation window needs to be defined. The most common choice, when feasible, is using the period prior to the event window for the estimation window. For example, in an event study using daily data and the market model, the market model parameters could be estimated over the 120 days prior to the event, Generally the event period itself is not included in the estimation period to prevent the event from influencing the normal performance model parameter estimates. With the parameter estimates for the normal performance model, the abnormal returns can be calculated.

### 2.5.1 Constant Mean Return Model

Let  $\mu_i$  be the mean return for asset  $i$ . Then the constant mean return model is;

$$R_{it} = \mu_i + \zeta_{it}$$

$$E(\zeta_{it}) = 0 \quad \text{var}(\zeta_{it}) = \sigma_{\zeta_{it}}^2$$

Where  $R_{it}$  is the period- $t$  return on security  $i$  and  $\zeta_{it}$  is the time period  $t$  disturbance term for security  $i$  with an expectation of zero and variance  $\sigma_{\zeta_{it}}^2$ . Although the constant mean return model is perhaps the simplest model. Brown and Warner (1980, 1985) find it often yields results similar to those of more sophisticated models. This lack of sensitivity to the model can be attributed to the fact that the variance of the

abnormal return is frequently not reduced much by choosing a more sophisticated model.

### 2.5.2 Market Model

The market model is a statistical model which relates the return of any given security to the return of the market portfolio. The model's linear specification follows from the assumed joint normality of asset returns. For any security  $i$  the market model is

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$
$$E(\varepsilon_{it}) = 0 \quad \text{var}(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$$

Where  $R_{it}$  and  $R_{mt}$  are the period- $t$  returns on security  $i$  and the market portfolio, respectively, and  $\varepsilon_{it}$  is the zero mean disturbance term.

The market model represents a potential improvement over the constant mean return model. By removing the portion of the return that is related to variation in the market's return, the variance of the abnormal return is reduced. This in turn can lead to increased ability to detect event effects. Other models include the statistical models and economic models

## **3.0 RESEARCH METHODOLOGY**

### **3.1 Research Design**

A Standard event study method is used in this research. For each rights issue, daily capitalization and dividend adjusted price data is collected over the test periods and is used to compute market model parameters using the GARCH model. The event window covers the pre-announcement, announcement and post announcement period defined as  $t_{-n} - t_{-1}$ ,  $t_0$  and  $t_1 - t_n$  respectively. The  $n$  is identified as 30 days.

The period under consideration is from 1<sup>st</sup> January 1996 to 31<sup>st</sup> December 2002. The stock prices prior to the event window are used in a Garch model to compute the parameters of the market model i.e. alpha and beta. The market model is then used to estimate the returns which are then used to derive the excess returns over the event window. The excess returns are then used to test the price effect of the announcement.

### **3.2 Population**

The population of the research are all the companies listed in the Nairobi Stock Exchange (NSE) as of 31<sup>st</sup> December 2002.

### **3.3 Sample**

From the population, the sample will consist of companies that meet the following criteria;

- (a) A rights issue has taken place over the period 1<sup>st</sup> Jan 1996 – 31<sup>st</sup> Dec 2002.
- (b) Daily price capitalization data for the period 1<sup>st</sup> Jan 1996 – 31<sup>st</sup> Dec 2002 is available.
- (c) Rights Issue information prospectus is available.

Since we are using an event study methodology, any company that made other announcements releasing other relevant information are excluded. The sample



therefore excluded companies that had their rights issue announcements contaminated by other concurrent firm specific events.

From the criteria above, companies include<sup>d</sup> in the sample are; East African Breweries (EABL), Industrial Commercial Development Corporation Investments Limited (ICDCI), Pan Africa, Standard Newspapers Group, Total Kenya and Unga Limited.

### **3.4 Variables of the Study**

The variables of this study include;

Share prices, Market performance index and volume of trade in the exchange.

### **3.5 Data Collection**

Data will be obtained from secondary sources i.e.

- The daily share capitalization prices for the entire sample. This information sourced from the NSE data bank, includes the volume of trade for each security.
- The Rights issue prospectus is obtained from the companies that took part in the process or the NSE library. This will give information pertaining to the dates of announcement and company specific information preceding the issue.
- Seasoned Equity records of all rights issue in the NSE. These records give the company specific offering data and selected financial information.

### **3.6 Data Analysis**

#### **3.6.1 Analysis Techniques**

The constant parameters of the market model i.e. alpha and beta are computed from the gathered data using the GARCH model.

GARCH stands for **Generalized AutoRegressive Conditional Heteroscedasticity**. Heteroscedasticity can be thought of as a time-varying variance (i.e., volatility). Conditional implies a dependence on the observations of the immediate past, and autoregressive describes a feedback mechanism that incorporates past observations

into the present. GARCH then is a mechanism that includes past variances in the explanation of future variances. More specifically, GARCH is a time series modelling technique that uses past variances and past variance forecasts to forecast future variances.

GARCH modelling takes into account excess kurtosis (i.e. fat tail behaviour) and volatility clustering, two important characteristics of financial time series. It provides accurate forecasts of variances and covariance's of asset returns through its ability to model time-varying conditional variances

Financial return volatility data is influenced by time dependent information flows which result in pronounced temporal volatility clustering. These time series can be parameterised using GARCH models. It has been found that GARCH models can provide good in-sample parameter estimates and, when the appropriate volatility measure is used, reliable out-of-sample volatility forecasts.

Although GARCH models are useful across a wide range of applications, they do have certain limitations i.e.

- (a) GARCH models are only part of a solution. Although GARCH models are usually applied to return series, financial decisions are rarely based solely on expected returns and volatilities.
- (b) GARCH models are parametric specifications that operate best under relatively stable market conditions. Although GARCH is explicitly designed to model time-varying conditional variances, GARCH models often fail to capture highly irregular phenomena, including wild market fluctuations (e.g., crashes and subsequent rebounds), and other highly unanticipated events that can lead to significant structural change.
- (c) GARCH models often fail to fully capture the fat tails observed in asset return series. Heteroscedasticity explains some of the fat tail behaviour, but typically not all of it. Fat tail distributions, such as student-t, have been applied in GARCH modelling, but often the choice of distribution is a matter of trial and error.

### **3.6.2 Analysis of data**

The stock returns are computed from the stock prices over the entire period under consideration. Similarly, the market return is an average of the returns of the companies included in the NSE 20 Share Index.

For each of the companies in the sample, the share return and market return over the period prior to the event window are used to compute the market model parameters alpha and beta using GARCH model. For the event window, these parameters are then used to compute the excess returns which are the difference between the expected returns and the observed returns. Further the Least Squares Method (LSM) is also used for comparison. The Least Squares Method had been used in previous similar research by Njoroge 2003.

To test the price impact of the announcements, two-tailed t-tests are used.

## 4.0 RESEARCH FINDINGS

### 4.1 Introduction

From the objective of the project i.e. to establish security returns around the rights issue announcement, a sample of six companies that issued rights over the period (1996 – 2002) are picked from the population of all the companies listed in the NSE by 31<sup>st</sup> December 2002. The companies that were selected and their respective announcement and record dates are shown in the table below.

COMPANY	RIGHTS ISSUE	
	ANNOUNCEMENT DATE	RECORD DATE
EABL	2-Sep-1997	30-Sep-1997
ICDCI	21-Aug-1998	21-Sep-1998
Pan Africa	18-Jun-1999	17-Jan-2000
Unga Ltd	18-May-2000	7-Jun-2000
Total Kenya	9-Mar-2001	31-Dec-2001
Standard Group	25-Jul-2001	23-Nov-2001

Table 1

The share prices of the sample securities was obtained for the period 1<sup>st</sup> April 1996 to 31<sup>st</sup> December 2002 and used to compute the security returns over the period. The market return is equally computed by averaging the returns of all the companies used to compute the market index i.e. NSE 20 share Index. The security and market returns for the sample over the event window are detailed in appendix C.

For each of the sample companies, the share price data prior to the event window is modelled using Garch to obtain a market model to be used to estimate expected returns over the event window. This is similarly done using the Least Squares Method. The excess returns are then computed as follows for each of the two methods;

$$\text{Excess Returns} = \text{Actual returns} - \text{Expected returns}$$

A two tailed test is then used to establish the significance of the findings.

## 4.2 Analysis of Findings

The summarised analysis for the entire sample is discussed next, however the detailed analysis is in appendix D.

### 4.2.1 Unga Limited

The event window ranges from 3<sup>rd</sup> April 2000 to 30<sup>th</sup> June 2000. The announcement date is 18<sup>th</sup> May 2000 while the record date is 7<sup>th</sup> June 2000. The form of the market model used for Unga is as follows;

$$R_{UNGA} = \alpha + \beta R_{MARKET}$$

Where;

$R_{UNGA}$  = return of Unga company.

$R_{MARKET}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = -0.008234$$

$$\beta = 0.748292$$

Hence

$$R_{UNGA} = -0.008234 + [0.748292 \times R_{MARKET}]$$

Using the LSM, the constants are;

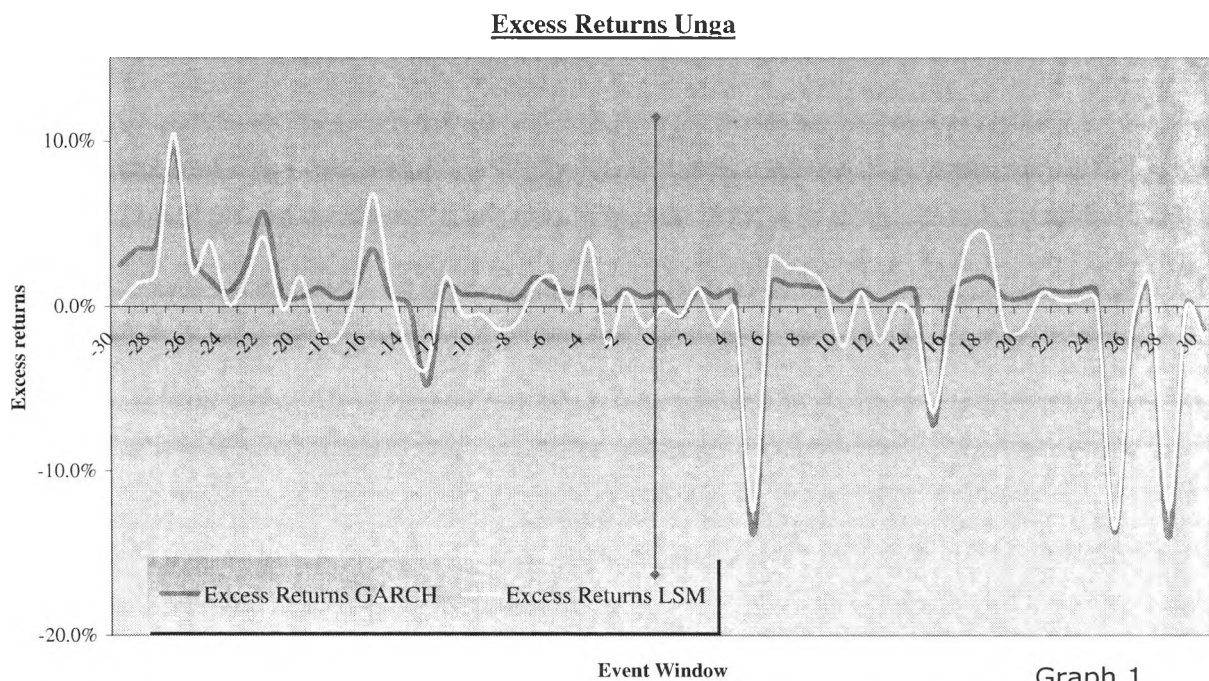
$$\alpha = 0.0000997$$

$$\beta = 3.732854$$

Hence

$$R_{UNGA} = 0.0000997 + [3.732854 \times R_{MARKET}]$$

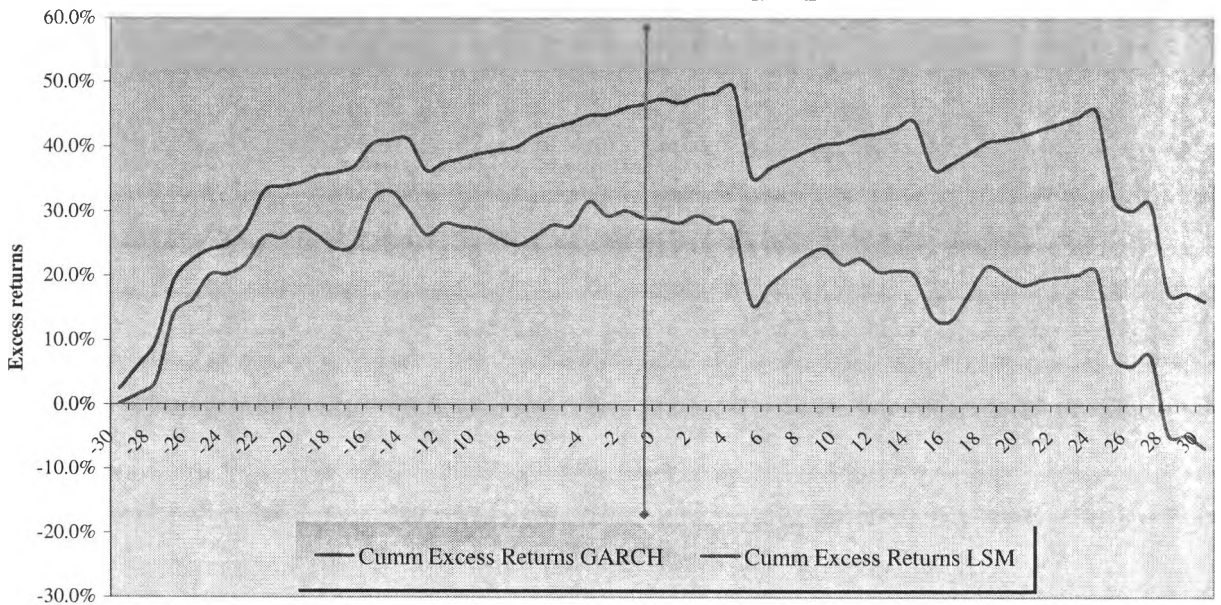
The charts below shows the results of using both methods (GARCH and LSM)



The expected return of the stock using the two methods is equally matched. The excess returns derived using Garch have a low variability than that from the Least Squares Method. The results are evenly matched since the data has been cleaned of any other effects and the stability of the share price ensures that there are no data breaks that would disadvantage the LSM method.

Immediately after the announcement, the excess returns remain minimally positive but after the 5<sup>th</sup> day the direction reverses significantly to over -10% and oscillates till the end of the event window. The delay in reaction by the market to the announcement till the sixth trading day implies low efficiency of the market.

### Cummulative Excess Returns - Unga



Event Window

Graph 2

The cumulative excess return at the end of the event window is 16%. The Pre announcement cumulative excess return is at 46.1% while the post announcement cumulative excess returns after the announcement is at (31%).

The average return of the security before and after the event window is 0.24% and (0.13%) respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of (0.268%) to (3.82%).. The actual mean for the stock at the pre announcement is 0.2435% hence the null hypothesis is rejected since it is without the range and the difference is significant.

Thus for Unga, the rights issue has information content. The announcement drives the share returns down by 2.713%

#### 4.2.2 Standard Limited

The event window ranges from 13th June 2001 to 5<sup>th</sup> September 2001. The announcement date is 25<sup>th</sup> July 2001 while the record date is 23<sup>rd</sup> November 2001. The form of the market model used for Standard is as follows;

$$R_{\text{STANDARD}} = \alpha + \beta R_{\text{MARKET}}$$

Where;

$R_{\text{STANDARD}}$  = return of Standard Group.

$R_{\text{MARKET}}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = -0.001562$$

$$\beta = 1.512359$$

Hence

$$R_{\text{STANDARD}} = -0.001562 + [1.512359 \times R_{\text{MARKET}}]$$

Using the LSM, the constants are;

$$\alpha = 0.0000151$$

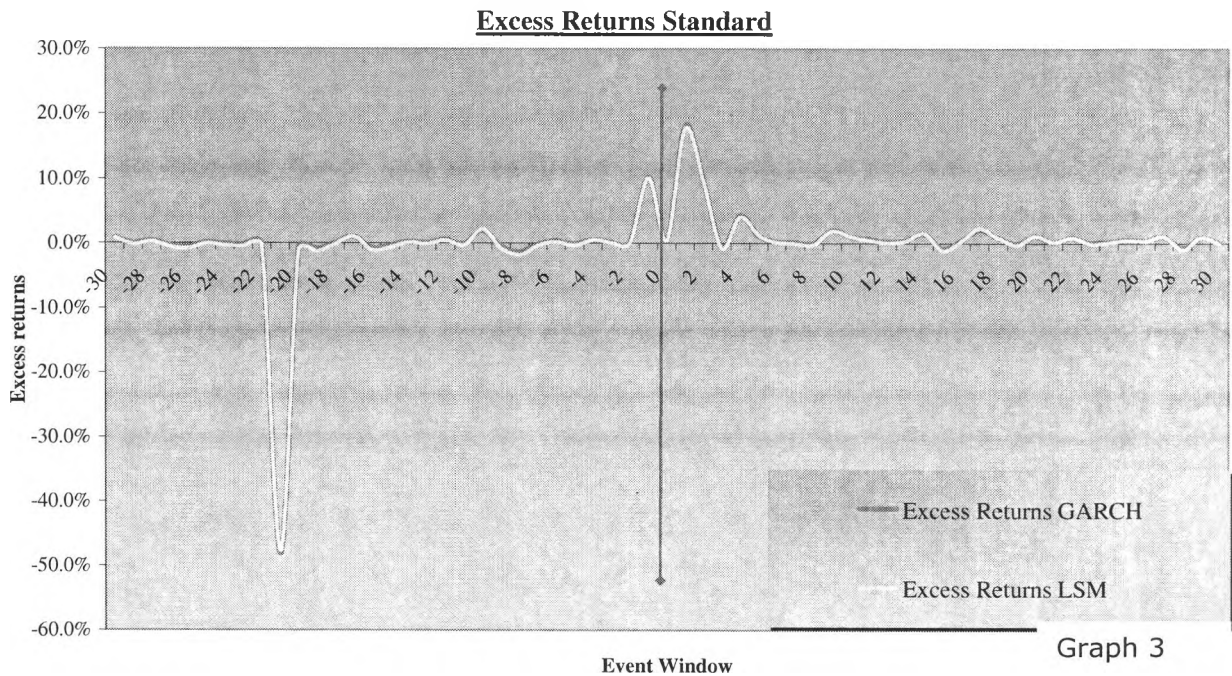
$$\beta = 1.792142$$

Hence

$$R_{\text{STANDARD}} = 0.0000151 + [1.792142 \times R_{\text{MARKET}}]$$



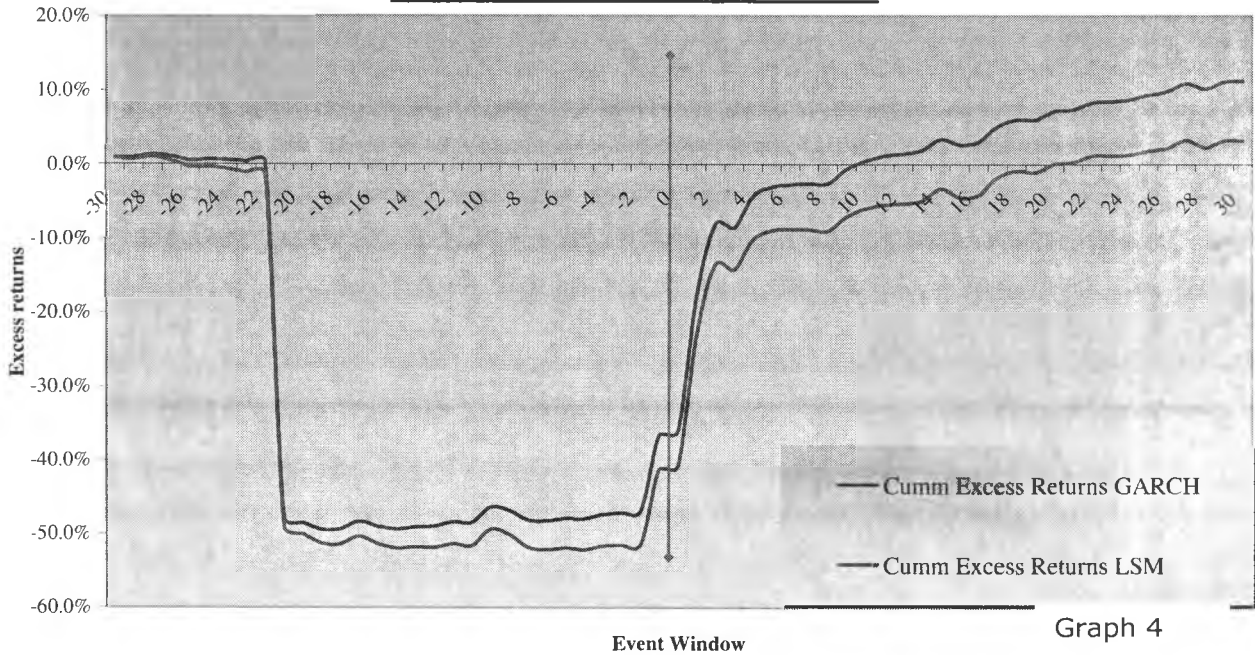
The chart below shows the results of using both methods (GARCH and LSM)



The excess returns obtained using the two methods show similarity throughout the whole event window. Two days to the announcement day, there is a sudden increase in excess returns indicating some prior knowledge by some investors regarding the impending announcement. One day after the announcement, the excess returns hit its highest point of 18.25% and then oscillates uniformly with an amplitude of 5% till the end of the event window.

The immediate reaction by the market to the announcement and then stability after two trading days implies efficiency since the share price jumped from Kshs 5.55 to Kshs 6.65 then to a stable Kshs 7.33. However the low level of activity for this security before and after the event window could explain the sudden jump then stable behaviour exhibited just after the announcement.

### Cummulative Excess Returns - Standard



Graph 4

On the announcement date, the cumulative excess returns of the security start an upward trend which is maintained beyond the event window. The cumulative excess return at the end of the event window is 11.26%. The Pre announcement cumulative excess return is at (36.61%) while the post announcement cumulative excess returns after the announcement is at 47.28%.

The average returns of the security before and after the event window are 0.0973% and 0.1566% respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of 2.66% to (0.331%) The actual mean for the stock prior to the announcement is (1.3847%) hence the null hypothesis is rejected since it is without the range and the difference is significant.

Thus for standard, the rights issue has information content. The nature of the impact is positive 2.552%.

### 4.2.3 Total Limited

The event window ranges from 26<sup>th</sup> January 2001 to 20<sup>th</sup> April 2001. The announcement date is 9<sup>th</sup> March 2001 while the record date is 31<sup>st</sup> December 2001. The form of the market model used for Total Limited is as follows;

$$R_{\text{TOTAL}} = \alpha + \beta R_{\text{MARKET}}$$

Where;

$R_{\text{TOTAL}}$  = return of Total Limited.

$R_{\text{MARKET}}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = -0.0000132$$

$$\beta = 0.507596$$

Hence

$$R_{\text{TOTAL}} = -0.0000132 + [0.507596 \times R_{\text{MARKET}}]$$

Using the LSM, the constants are;

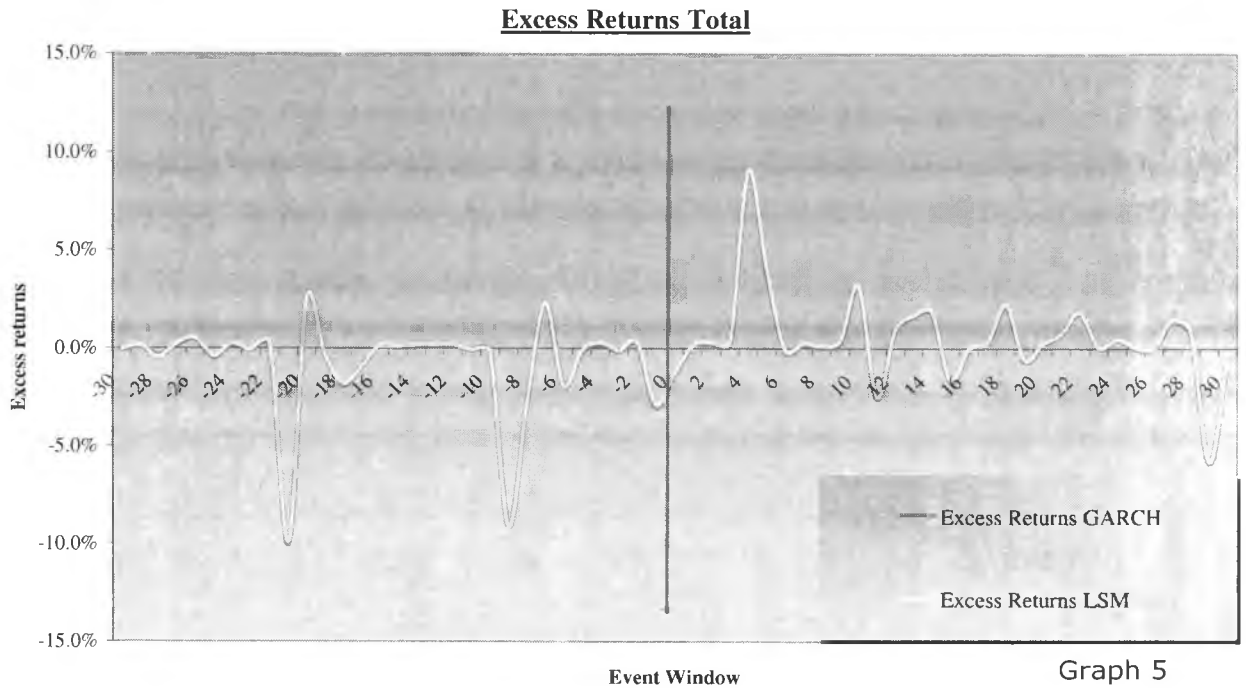
$$\alpha = -0.000508$$

$$\beta = 0.636605$$

Hence

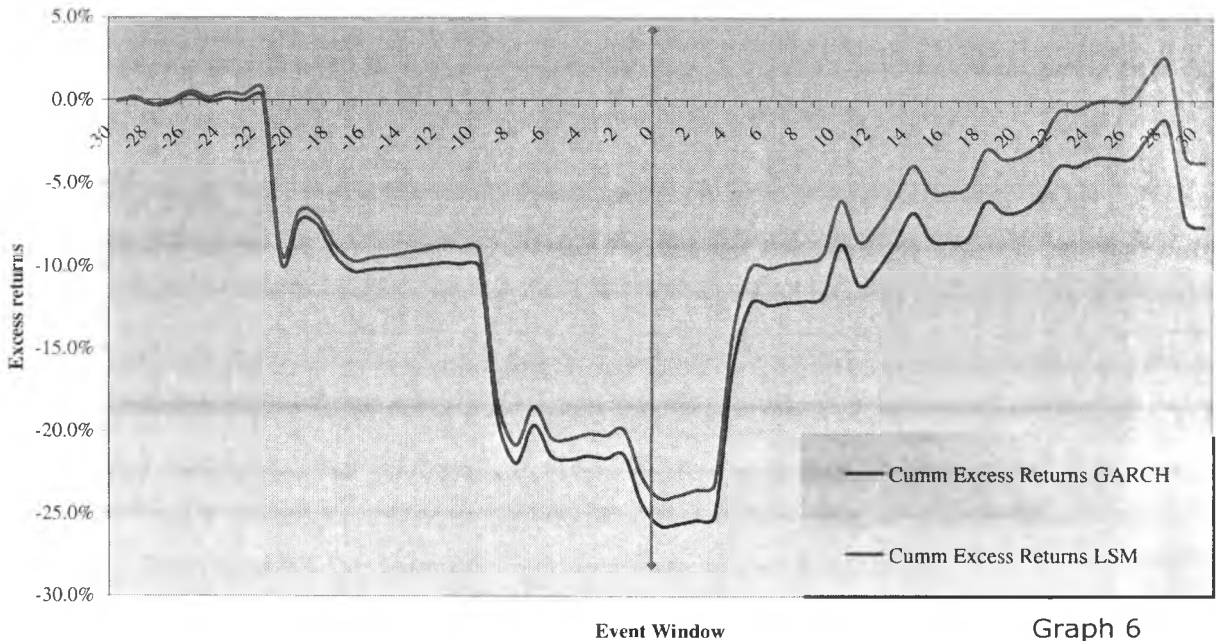
$$R_{\text{TOTAL}} = 0.000508 + [0.636605 \times R_{\text{MARKET}}]$$

The chart below shows the results of using both methods (GARCH and LSM)



The two methods are closely matched as the excess returns are similar across the entire event window. There is a sudden increase in the returns just after the announcement which are offset by similar decreases on the 12<sup>th</sup> and 30<sup>th</sup> day of the event window. The highest and lowest excess returns registered after the announcement is 9% and (5.67%) respectively.

### Cummulative Excess Returns Total



Graph 6

Immediately after the announcement, the returns of the share start an upward trend which changes direction after 28 days. The cumulative excess return at the end of the event window is (7.634%). The Pre announcement cumulative excess return is at (24.4%) while the post announcement cumulative excess returns are 18.05%.

The average returns of the security before and after the event window are (0.02%) and (0.1%) respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of 1.376% to (0.365%) The actual mean for the stock prior to the announcement is (0.8304%) hence the null hypothesis is rejected since it's without the range and the difference is significant.

Thus for Total, the rights issue has information content. The nature of the impact is positive 1.336%.

#### 4.2.4 ICDCI

The event window ranges from 10<sup>th</sup> July 1998 to 2<sup>nd</sup> October 1998. The announcement date is 21<sup>st</sup> August 1998 while the record date is 21<sup>st</sup> September 1998. The form of the market model used for ICDCI is as follows;

$$R_{ICDCI} = \alpha + \beta R_{MARKET}$$

Where;

$R_{ICDCI}$  = return of ICDCI.

$R_{MARKET}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = 0.001197$$

$$\beta = 1.159627$$

Hence

$$R_{ICDCI} = 0.001197 + [1.159627 \times R_{MARKET}]$$

Using the LSM, the constants are;

$$\alpha = 0.000526$$

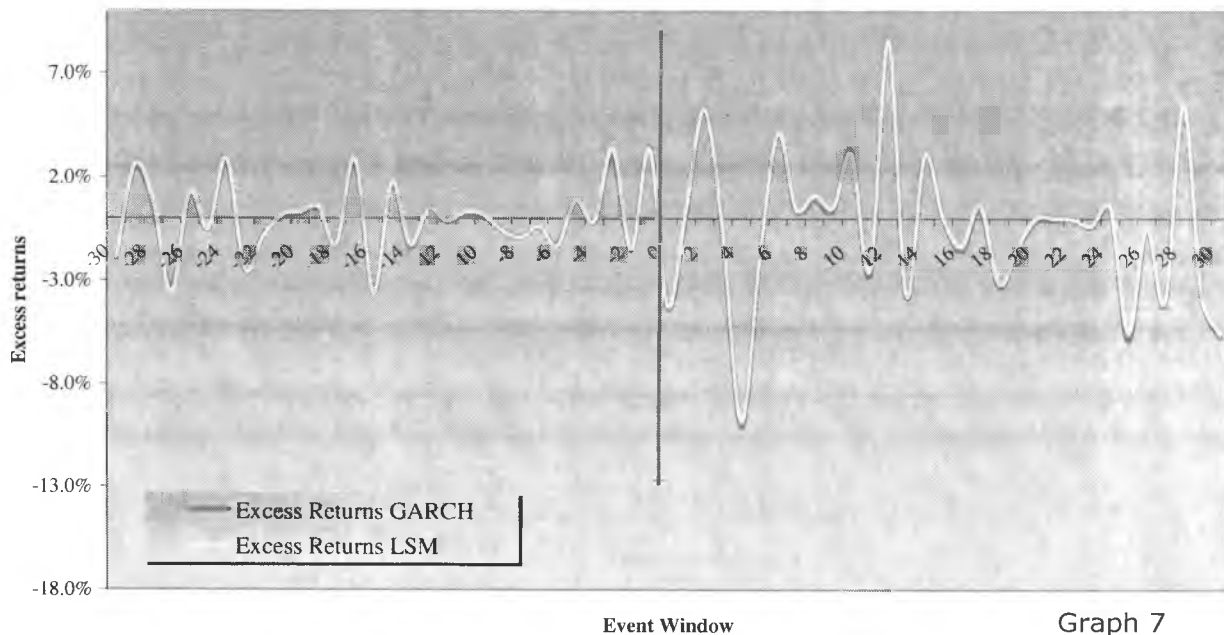
$$\beta = 1.327994$$

Hence

$$R_{ICDCI} = 0.000526 + [1.327994 \times R_{MARKET}]$$

The chart below shows the results of using both methods (GARCH and LSM)

### Excess Returns ICDCI

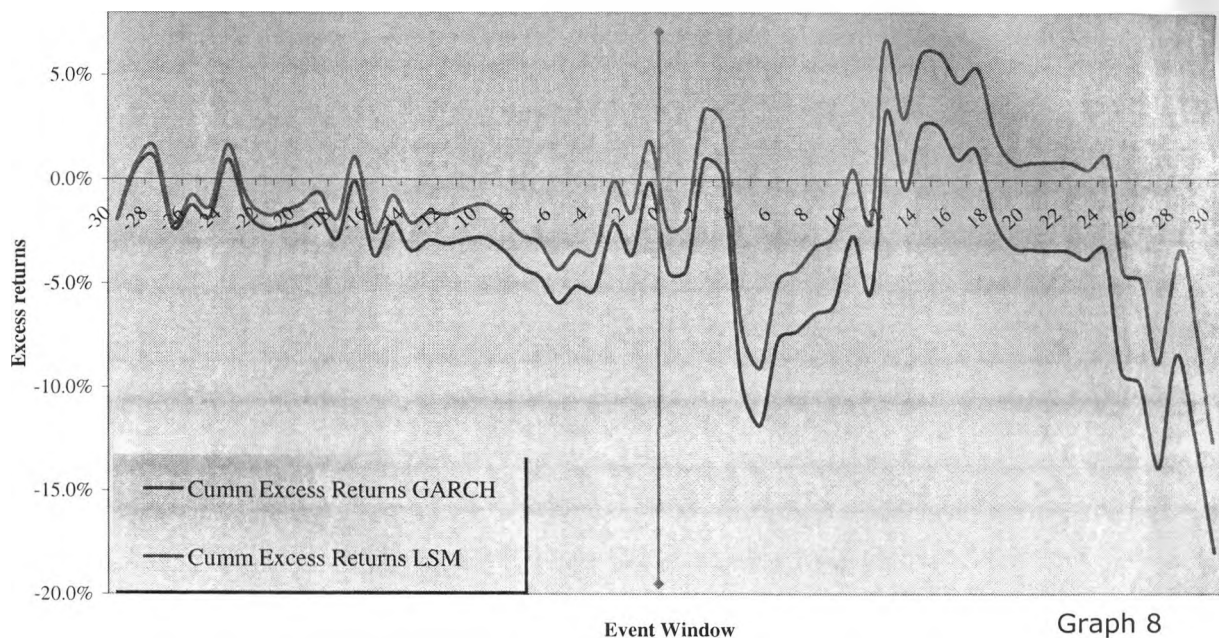


Event Window

Graph 7

The share returns maintains its sinusoidal behaviour throughout the event window with the amplitude of the wave being higher after the announcement of the rights issue. Immediately after the announcement, the security prices maintain their downward trend and recover after two trading days. The highest positive excess returns are on the 13<sup>th</sup> day with 8.62% while the negative is on the 5<sup>th</sup> day with (10%).

### Cummulative Excess Returns ICDCI



Graph 8

The cumulative excess return at the end of the event window is (18%). The Pre announcement cumulative excess return is at (0.15%) while the post announcement cumulative excess returns after the announcement is at (13.5%)

The average returns of ICDCI before and after the event window are 0.185% and 0.02% respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of 0.9628% to (2.185%). The actual mean for the stock prior to the announcement is 0.11% hence the null hypothesis is accepted since it is within the range.

Thus for ICDCI, the rights issue has no information content. The low level of activity and few shareholders mostly institutional for this security could explain the no impact situation of the rights issue. The shareholders may be privy to all the information leading to the rights hence no change in security price.



#### 4.2.5 EABL

The event window ranges from 22<sup>nd</sup> July 1997 to 15<sup>th</sup> October 1997. The announcement date is 2<sup>nd</sup> September 1997 while the record date is 21<sup>st</sup> September 1997. The form of the market model used for EABL is as follows;

$$R_{EABL} = \alpha + \beta R_{MARKET}$$

Where;

$R_{EABL}$  = return of EABL.

$R_{MARKET}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = 0.000179$$

$$\beta = 0.41265$$

Hence

$$R_{EABL} = 0.000179 + [0.41265 \times R_{MARKET}]$$

Using the LSM, the constants are;

$$\alpha = 0.0000485$$

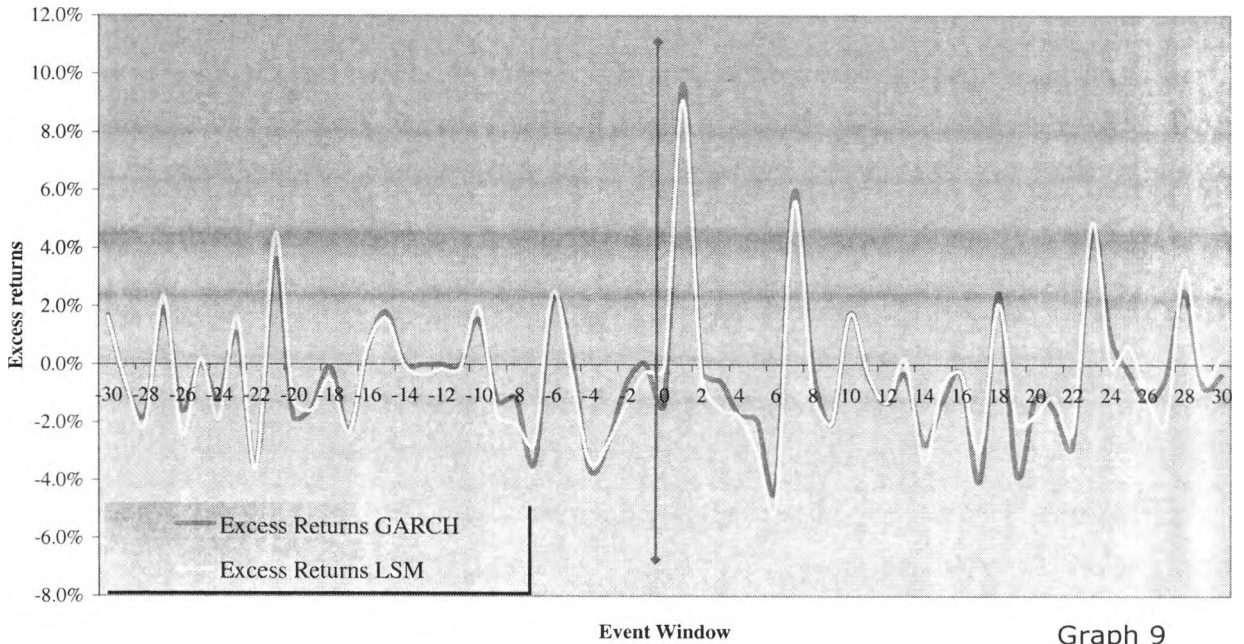
$$\beta = 1.182977$$

Hence

$$R_{EABL} = 0.0000485 + [1.182977 \times R_{MARKET}]$$

The chart below shows the results of using both methods (GARCH and LSM)

### Excess Returns EABL

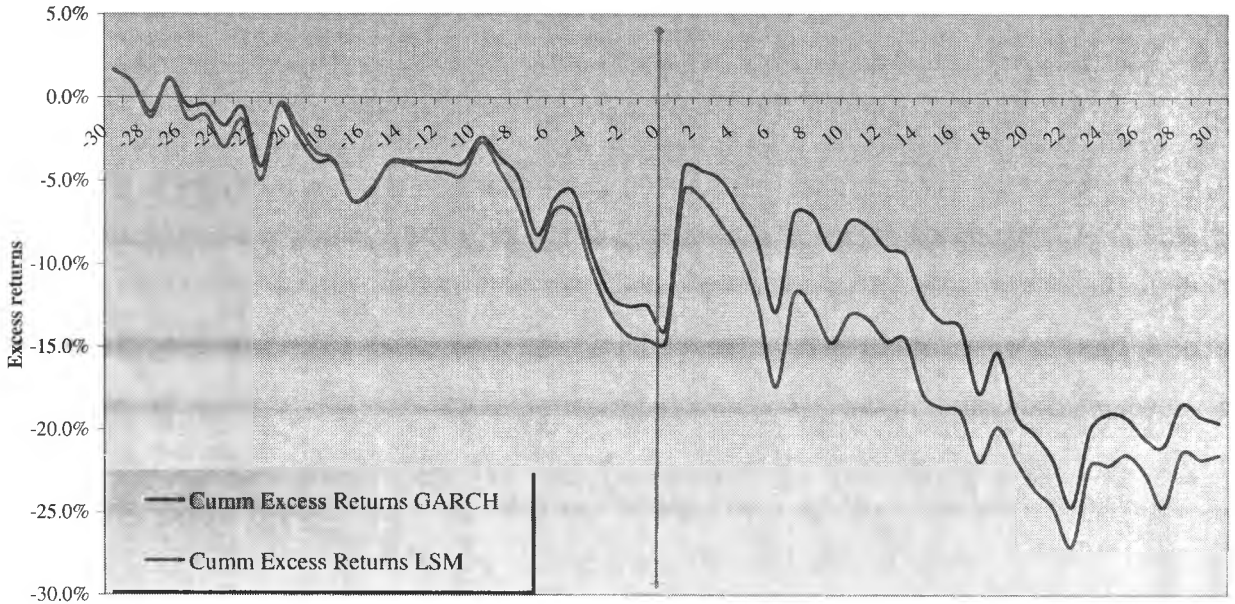


Graph 9

For EABL, the excess share returns have a sinusoidal behaviour like the ICDCI case though the amplitude is smaller. On the first day after the announcement, the excess returns hit a record high of 9.66% but by the 5<sup>th</sup> day it's at (4.2%). This up and down motion is maintained till the end of the event window. The high level of activity for this security explains the sinusoidal nature of the price and hence returns.

Further, the market reacts immediately after the announcement with the record high price coming on the first day hence market efficiency.

### Cummulative Excess Returns EABL



Event Window

Graph 10

The cumulative excess return at the end of the event window is (19.4%). The Pre announcement cumulative excess return is at (10.65%) while the post announcement cumulative excess returns after the announcement is at (4.36%) The cumulative excess returns on the announcement date are at (13.83%) which suddenly increase to (4.13%) on day one. The security then reverts back to its declining trend till the end of the event window.

The average returns of the security pre and post the event window are 0.14% and 0.14% respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of 0.99% to (1.282%). The actual mean for the stock prior to the announcement is 0.355% hence the null hypothesis is rejected since it is without the range.

Thus for EABL, the rights issue has positive information content of 0.2%.

#### 4.2.6 Pan Africa

The event window ranges from 6<sup>th</sup> May 1999 to 30<sup>th</sup> July 1999. The announcement date is 18<sup>th</sup> June 1999 while the record date is 17<sup>th</sup> Jan 2000. The form of the market model used for Pan Africa is as follows;

$$R_{\text{PAN AFRICA}} = \alpha + \beta R_{\text{MARKET}}$$

Where;

$R_{\text{PAN AFRICA}}$  = return of Pan Africa.

$R_{\text{MARKET}}$  = return of the market.

Using the Garch method, the values of the two constants was found to be;

$$\alpha = -0.000866$$

$$\beta = 0.381419$$

Hence

$$R_{\text{PAN AFRICA}} = -0.000866 + [0.381419 \times R_{\text{MARKET}}]$$

Using the LSM, the constants are;

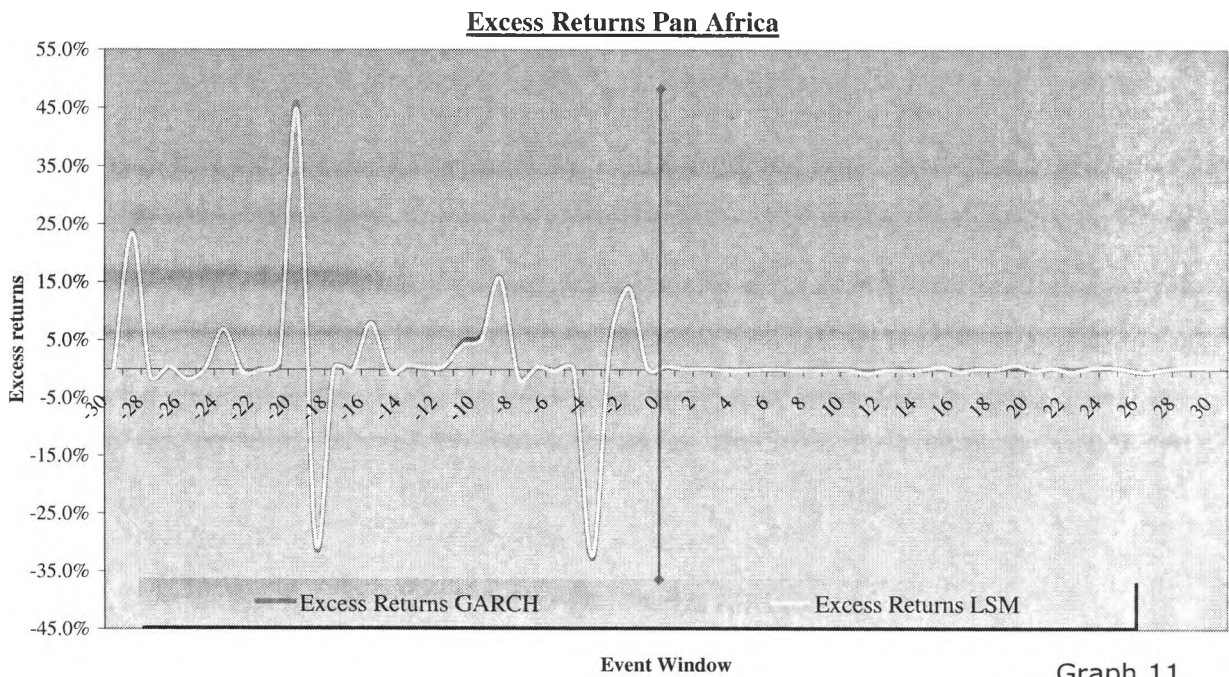
$$\alpha = -0.00056$$

$$\beta = 0.737828$$

Hence

$$R_{\text{PAN AFRICA}} = -0.00056 + [0.737828 \times R_{\text{MARKET}}]$$

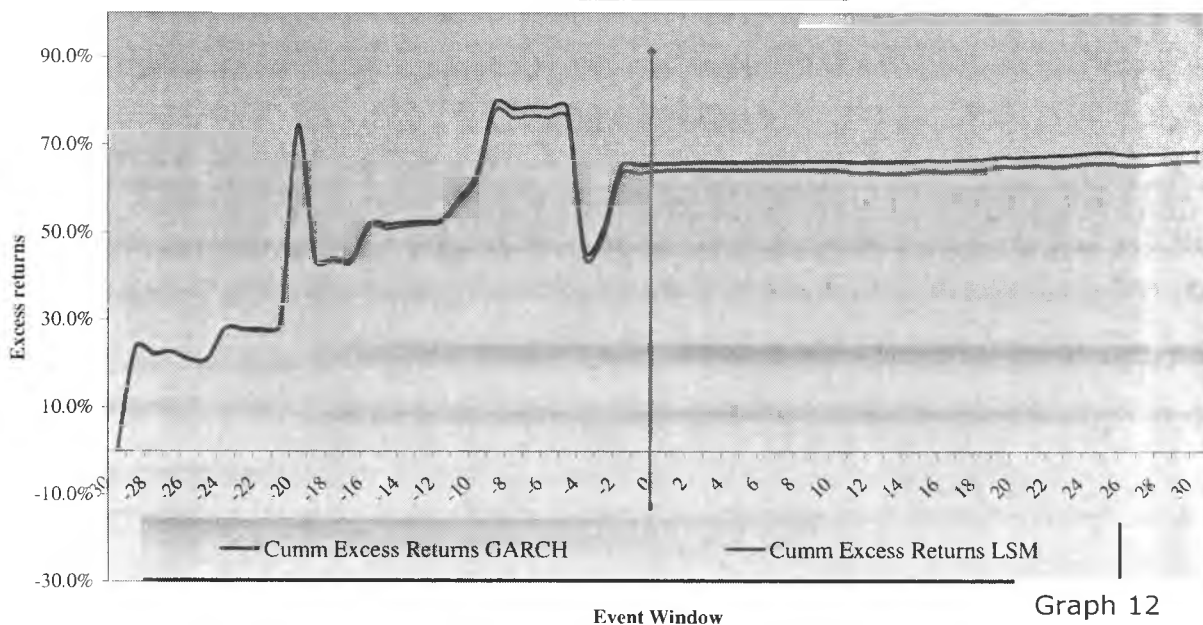
The chart below shows the results of using both methods (GARCH and LSM)



Graph 11

Immediately after the rights issue announcement, the share price maintains till the end of the event window. Thence the excess returns are almost zero post announcement which is totally different from the pre announcement period. The low activity and few shareholders for this security implies a prior knowledge before the announcement hence the non significant changes after the announcement.

### Cummulative Excess Returns Pan Africa



Graph 12

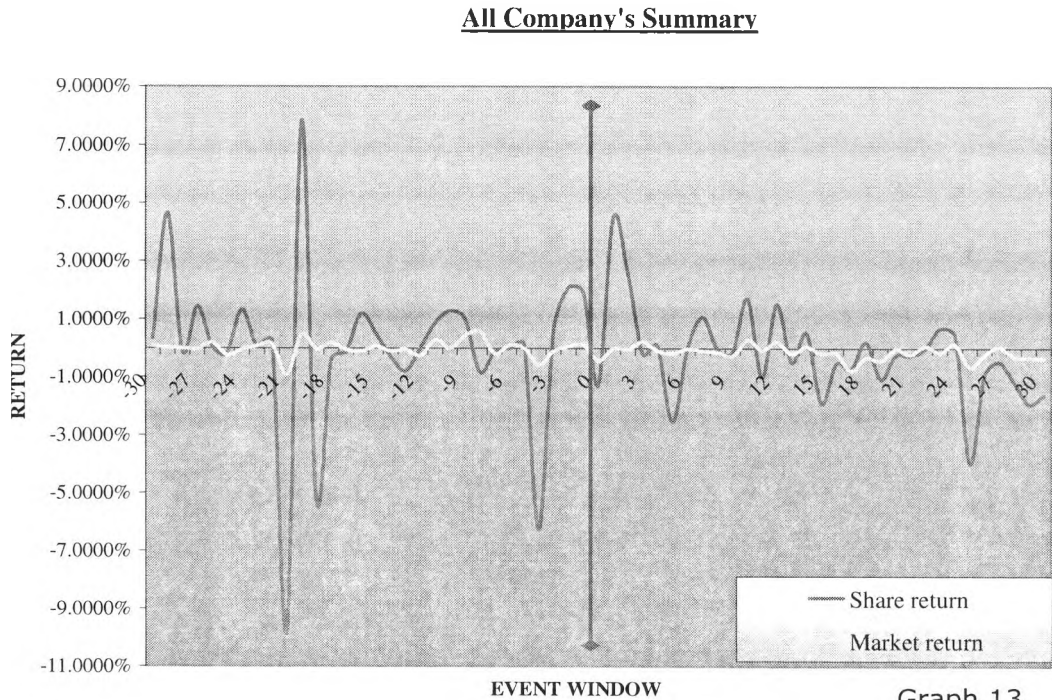
The cumulative excess return at the end of the event window is 68.7%. The Pre announcement cumulative excess return is at 65.35% while the post announcement cumulative excess returns after the announcement is at 2.98%. The increase in returns prior to the announcement and stability after the announcement may imply prior knowledge of the impending announcement.

The average returns of the security pre and post the event window are (0.07%) and (0.11%) respectively. At a confidence level of 95% the two tail test statistic for event window lies within the range of 0.059% to (0.0589%). The actual mean for the stock prior to the announcement is 2.126% hence the null hypothesis is rejected since it's without the range and the difference is significant.

Thus for Pan Africa, the rights issue has information content. The nature of the impact is negative 2.125%.

## 4.2.7 All Companies

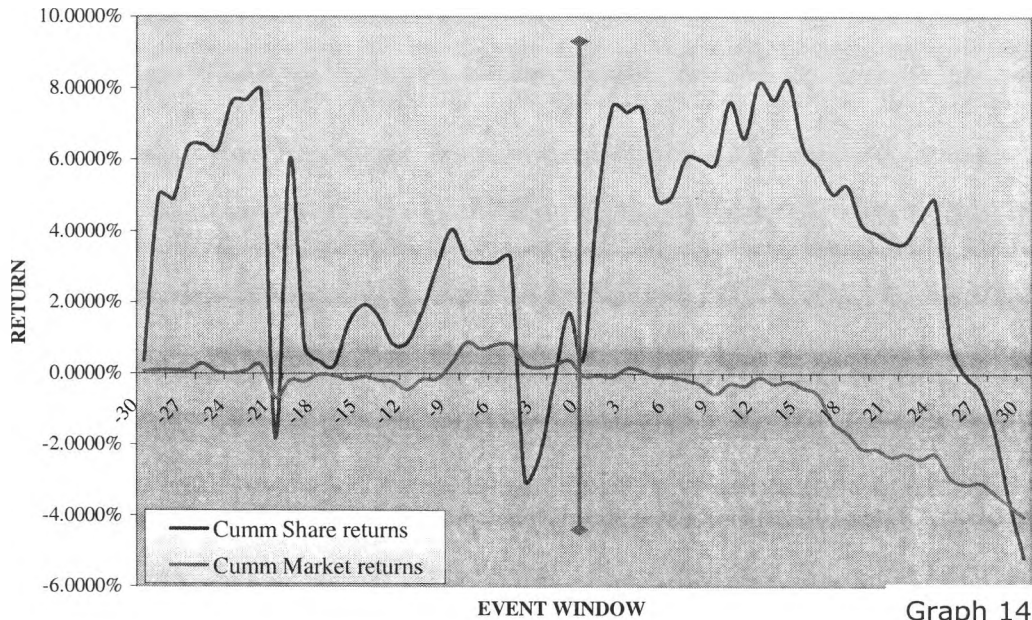
The summary of all the companies is shown below;



The average returns of all the sample over the 61day event window is shown above. The average market returns over the same period for all the securities is equally mapped above. The market return is continuously stable showing no effect after the announcement day though it ends the event window in the negative territory. The sample returns are very vibrant throughout the event window with returns shifting to the negative territory towards the end of the event window.

Immediately after the announcement, the security prices adjust implying market efficiency but the adjustment continues throughout the window though no stability is achieved.

### All Companies Cummulative Excess Returns



Graph 14

For all the companies, the cumulative share returns at the end of the event window is (5.18%). The pre announcement window cumulative was 0.3745% while the post announcement cumulative returns stood at (3.9732%).

The two tail test for the entire sample, the mean return before announcement is 0.0125% while the test statistic range is (0.043%) to (0.222%). Since the actual mean is without this range, the null hypothesis is rejected.

Hence, for this entire sample and, rights issues have information content, the nature and extent of being negative 0.145%.



## **5.0 SUMMARY AND CONCLUSION**

### **5.1 Conclusion**

The objective of establishing security returns around the rights issue announcement have been fully achieved with the findings supporting the hypothesis that rights issue announcements have information content. Out of the six sample companies, five strongly confirmed the information content in rights issues and the overall results for the entire sample equally and strongly confirmed the same.

The direction and extent of the impact varied across the entire sample. Three companies indicated a negative impact of varied degree while two had a positive impact. The overall results for the sample supported a negative impact of 0.145%.

The findings are generally similar to that of Njoroge 2003 implying that for stable and low turnover trading securities, Least Squares Method and Garch Model offer same results. Prior to the event window, the security prices for entire sample were relatively stable with minimal variances. Further the findings of this study are in agreement with others done in other parts of the world e.g. Kothare (1991) for Europe, Ariff and Finn (1989) for Asia and Scholes (1972) and Brous & Kini (1994) for the USA.

### **5.2 Limitations of the study**

The main limitation of this study has been the size of the sample. Very few companies issued rights over the period under consideration hence the small size. In cases where the sample is large the firm or industry specific events may not play a role and therefore not affect the findings.

### **5.3 Policy Recommendations**

Coming out of this study and others before, it's very evident that rights issue have information content. Policy guidelines need to be put in place to ensure that companies give all the necessary relevant information in their rights issue prospectus. When this is strictly enforced, investors will make better informed decisions and the share price behaviour will always be a result of fundamentals.

## **5.5 Suggestions for further research**

The fundamental driver of the impact of a rights issue on the security price is information as verified by this study. Further research is needed to establish reasons why companies undertake rights issues. That study for the sampled companies would give more light on the findings and possibly explain the varied trends of share price behaviour for each of the companies.

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## 7.0 APPENDIX

### 7.1 Appendix A

The general equation for determining the theoretical Ex-rights price;

$$S(T+1) = (V + P)/(N + M) < S(t-1)$$

Where:

$S(T+1)$  = Share price at (T+1)

$V$  = pre-rights value of the firm, [ $S(t-1) \times N$ ]

$P$  = proceeds from rights offering, ( $X \times M$ )

$N$  = shares outstanding before offering

$M$  = shares sold due to rights.

$S(t-1)$  = Share price at (t-1)

## 7.2 Appendix B

### 20 SHARE INDEX COMPANIES

1. Bamburi Cement
2. Barclays Bank
3. BAT(K)
4. BOC Limited
5. Brooke Bond
6. Diamond Trust
7. E.A.B.L
8. Firestone
9. K.P. & L.C.
10. Kakuzi
11. Kenya Commercial Bank
12. Kenya Airways
13. Nation
14. NIC
15. Sasini
16. Standard Chartered Bank
17. Total Kenya
18. TPS-Serena
19. Uchumi
20. Williamson Tea

## APPENDIX C

TOTAL SAMPLE				
n	Share return	Market return	Cumm Share returns	Cumm Market returns
-30	0.3509%	0.0753%	0.3509%	0.0753%
-29	4.6480%	0.0268%	4.9989%	0.1021%
-28	-0.1053%	0.0064%	4.8936%	0.1085%
-27	1.4509%	-0.0220%	6.3445%	0.0865%
-26	0.0960%	0.1974%	6.4406%	0.2839%
-25	-0.1545%	-0.2366%	6.2861%	0.0473%
-24	1.3333%	-0.0343%	7.6194%	0.0130%
-23	0.0578%	0.0786%	7.6772%	0.0917%
-22	0.2666%	0.1478%	7.9439%	0.2395%
-21	-9.7551%	-0.9198%	-1.8113%	-0.6802%
-20	7.8364%	0.4917%	6.0252%	-0.1885%
-19	-5.2780%	-0.0211%	0.7472%	-0.2096%
-18	-0.3993%	0.1911%	0.3479%	-0.0185%
-17	-0.1231%	-0.0424%	0.2248%	-0.0609%
-16	1.1968%	-0.0982%	1.4216%	-0.1591%
-15	0.5057%	0.0786%	1.9273%	-0.0806%
-14	-0.2962%	-0.0960%	1.6311%	-0.1766%
-13	-0.7828%	-0.0340%	0.8482%	-0.2105%
-12	0.0181%	-0.2393%	0.8664%	-0.4498%
-11	0.8777%	0.2950%	1.7441%	-0.1548%
-10	1.2916%	0.0099%	3.0357%	-0.1449%
-9	1.0228%	0.4419%	4.0585%	0.2970%
-8	-0.8244%	0.5806%	3.2341%	0.8776%
-7	-0.1065%	-0.1770%	3.1276%	0.7006%
-6	0.0067%	0.1135%	3.1343%	0.8141%
-5	0.1472%	0.0127%	3.2816%	0.8268%
-4	-6.2580%	-0.5640%	-2.9764%	0.2628%
-3	0.6457%	-0.0915%	-2.3307%	0.1713%
-2	2.1142%	0.0748%	-0.2166%	0.2461%
-1	1.9205%	0.1284%	1.7039%	0.3745%
0	-1.2475%	-0.4246%	0.4564%	-0.0501%
1	4.4888%	0.0022%	4.9452%	-0.0479%
2	2.5607%	-0.0366%	7.5059%	-0.0845%
3	-0.1697%	0.2418%	7.3361%	0.1573%
4	0.1050%	-0.0745%	7.4412%	0.0827%
5	-2.5186%	-0.1610%	4.9225%	-0.0783%
6	0.0341%	-0.0073%	4.9566%	-0.0855%
7	1.0904%	-0.0884%	6.0469%	-0.1739%
8	-0.0431%	-0.1361%	6.0038%	-0.3100%
9	-0.1102%	-0.2602%	5.8936%	-0.5702%
10	1.7169%	0.2967%	7.6106%	-0.2734%
11	-1.0014%	-0.0648%	6.6092%	-0.3382%
12	1.5338%	0.2331%	8.1430%	-0.1051%
13	-0.4642%	-0.1786%	7.6788%	-0.2838%
14	0.5267%	0.0652%	8.2055%	-0.2185%
15	-1.8916%	-0.1779%	6.3139%	-0.3964%
16	-0.5304%	-0.1781%	5.7835%	-0.5745%
17	-0.7338%	-0.7708%	5.0498%	-1.3453%
18	0.2096%	-0.3251%	5.2594%	-1.6704%
19	-1.0695%	-0.4320%	4.1899%	-2.1024%
20	-0.2449%	-0.0245%	3.9450%	-2.1269%
21	-0.2427%	-0.2132%	3.7023%	-2.3401%
22	-0.0088%	0.0840%	3.6936%	-2.2561%
23	0.6857%	-0.1481%	4.3793%	-2.4041%
24	0.4603%	0.1427%	4.8396%	-2.2614%
25	-3.9649%	-0.6538%	0.8747%	-2.9153%
26	-0.9021%	-0.2037%	-0.0274%	-3.1190%
27	-0.4647%	0.0495%	-0.4921%	-3.0695%
28	-1.1487%	-0.2925%	-1.6408%	-3.3620%
29	-1.9177%	-0.3182%	-3.5585%	-3.6802%
30	-1.6234%	-0.3431%	-5.1819%	-4.0233%



## APPENDIX E

## SAMPLE PRICE LIST - 31ST March 2004



31-Mar-04

**NAIROBI STOCK EXCHANGE  
DAILY PRICE LIST**

NATION CENTRE, (1st FLOOR), KIMATHI STREET  
P.O. BOX 43633, NAIROBI. TEL: 230692 FAX: 224200  
E-MAIL: info@nse.co.ke Website: www.nse.co.ke

LAST 12 MONTH		MAIN INVESTMENT MARKET SEGMENT		TRADING STATUS	HIGH	LOW	AP On 31-03-04	PREVIOUS DEAL	TOTAL SHARES
HIGH	LOW								
<b>AGRICULTURAL</b>									
82.00	50.00	Brooke Bond Ltd Ord 10.00	xd	70.00	70.00	70.00	74.00	1,000	
29.25	15.00	Kakuzi Ord.5.00		24.00	24.00	24.00	24.00	48,000	
11.70	3.20	Rea Vipingo Plantations Ltd Ord 5.00	xd	9.00	9.00	9.00	9.00	1,506	
25.00	16.95	Sasini Tea & Coffee Ltd Ord 5.00		17.60	17.50	17.50	17.35	28,510	
<b>COMMERCIAL AND SERVICES</b>									
12.00	8.80	Car & General (K) Ltd Ord 5.00	xd				12.00		
141.00	24.50	CMC Holdings Ltd Ord 5.00					53.00		
20.25	20.25	Hutchings Biemer Ltd Ord 5.00	s				20.25		
15.10	5.60	Kenya Airways Ltd Ord 5.00		10.05	9.20	9.60	9.45	37,717	
17.55	6.00	Marshalls (E.A.) Ltd Ord 5.00					17.50		
230.00	80.00	Nation Media Group Ord. 5.00	cd	194.00	188.00	188.00	200.00	13,772	
36.50	19.75	TPS Ltd Ord 5.00 (Serena)	cd	30.00	28.75	28.75	30.00	3,286	
35.00	20.25	Uchumi Supermarket Ltd Ord 5.00					24.00		
<b>FINANCE AND INVESTMENT</b>									
323.00	119.00	Barclays Bank Ltd Ord 10.00	xd	231.00	219.00	228.00	237.00	45,820	
65.00	10.55	C.F.C Bank Ltd ord.5.00	ca	59.00	59.00	59.00	59.00	2,266	
49.50	14.00	Diamond Trust Bank Kenya Ltd Ord 4.00	cd	35.00	34.00	34.50	34.00	94,384	
19.35	6.50	Housing Finance Co Ltd Ord 5.00		12.10	12.05	12.10	12.05	11,589	
90.00	37.00	I.C.D.C Investments Co Ltd Ord 5.00		69.50	69.50	69.50	69.00	9,093	
77.00	20.00	Jubilee Insurance Co. Ltd Ord 5.00		60.00	60.00	60.00	60.00	60,170	
101.00	27.00	Kenya Commercial Bank Ltd Ord 10.00	cd	65.00	65.00	65.00	65.00	60,726	
36.25	5.40	National Bank of Kenya Ltd Ord 5.00		20.00	19.75	19.85	19.90	5,800	
69.50	22.00	NIC Bank Ltd Ord 5.00	cd	46.00	44.00	45.00	44.50	225,205	
35.00	13.00	Pan Africa Insurance Holdings Ltd					33.50		
250.00	66.00	Standard Chartered Bank Ltd Ord 5.00	xd/cb	185.00	180.00	183.00	188.00	4,125	
<b>INDUSTRIAL AND ALLIED</b>									
26.25	5.60	Athi River Mining Ord 5.00	cd				19.95		
151.00	54.00	B.O.C Kenya Ltd Ord 5.00		148.00	140.00	145.00	137.00	6,216	
130.00	52.00	Bamburi Cement Ltd Ord 5.00	cd	100.00	98.50	99.50	100.00	222,074	
319.00	70.00	British American Tobacco Kenya Ltd Ord 10.00	cd	236.00	229.00	229.00	235.00	20,733	
140.00	45.00	Carbacid Investments Ltd Ord 5.00	cd				125.00		
46.25	9.00	Crown Berger Ltd Ord 5.00		39.00	38.00	38.75	39.00	23,200	
40.00	5.00	Dunlop Kenya Ord 5.00		19.75	19.75	19.75	20.00	500	
34.50	9.05	E.A.Cables Ltd Ord 5.00	xd				20.00		
75.50	30.00	E.A.Portland Cement Ltd Ord 5.00		51.00	51.00	51.00	53.00	1,000	
520.00	181.00	East African Breweries Ltd Ord 10.00	xd	470.00	450.00	461.00	472.00	45,182	
15.20	8.30	Firestone East Africa Ltd Ord 5.00	xd	11.00	11.00	11.00	11.00	57,600	
380.00	120.00	Kenya Oil Co Ltd Ord 5.00	xd				350.00		
18.90	2.50	Mumias Sugar Co. Ltd Ord 2.00	xd	8.80	8.60	8.75	8.50	224,725	
169.00	25.00	Kenya Power & Lighting Ltd Ord 20.00		99.00	97.00	97.50	97.00	8,173	
65.00	27.50	Total Kenya Ltd Ord 5.00	cd	45.00	44.75	44.75	44.50	3,373	
30.50	6.80	Unga Group Ltd Ord 5.00		16.00	16.00	16.00	16.05	1,000	
<b>ALTERNATIVE INVESTMENT MARKET SEGMENT</b>									
8.60	5.00	A.Baumann & Co.Ltd Ord 5.00					8.25		
62.50	20.25	City Trust Ltd Ord 5.00					56.00		
18.00	12.00	Eaagads Ltd Ord 1.25					17.00		
13.05	8.75	Express Ltd Ord 5.00					12.00		
110.00	70.00	Williamson Tea Kenya Ltd Ord 5.00					80.00		
105.00	100.00	Kapchorua Tea Co. Ltd Ord Ord 5.00					100.00		
5.30	5.30	Kenya Orchards Ltd Ord 5.00					5.30		
171.00	160.00	Limuru Tea Co. Ltd Ord 20.00	xd				171.00		
80.00	7.75	Standard Newspapers Group Ord 5.00		53.00	53.00	53.00	54.00	300	
<b>FIXED INCOME SECURITIES MARKET SEGMENT</b>									
<b>PREFERENCE SHARES</b>									
6.30	6.00	Kenya Power & Lighting Ltd 4% Pref 20.00					6.00		
8.30	8.00	Kenya Power & Lighting Ltd 7% Pref 20.00					8.30		