EFFECT OF PROFIT WARNINGS ON STOCK RETURNS AT THE NAIROBI SECURITIES EXCHANGE

BY

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA) OF THE UNIVERSITY OF NAIROBI.

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DECLARATION

The research project is my original work and has not been submitted for the award of a degree at any other university.

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The research Project has been submitted for the examination with my approval as the University supervisor

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First, I am indebted to the all-powerful GOD for all the blessings He showered on me and for being with me throughout the study. I am deeply obliged to my supervisor for his exemplary guidance and support without whose help this project would not have been a success. Finally, yet importantly, I take this opportunity to express my deep gratitude to my loving family and friends who are a constant source of motivation and for their never ending support and encouragement during this project.

DEDICATION

This project is dedicated to my husband Fredrick Njihia and my son Liam both of whom have encouraged me throughout the period of study. Without their support this work would have been more difficult to accomplish.

ABSTRACT

The main purpose of the study was to establish the effects of profits warnings on stock returns at the Nairobi Stock Exchange. The study adopted the use of descriptive design. For the research purpose, the population constituted of all the listed companies at the NSE that issued profit warnings announcement between the years 2003 to 2013. The population of study included fifteen companies as shown in appendix one. A census was done for all the fifteen companies. The study relied on secondary data from the NSE daily market reports, press websites such as nation media and standard media and stock brokers research departments. The data collected included corporate announcements in form of profit warnings, company details, the date of the warning, the industry in which the company belonged and the primary reason given for the warning as well as daily observed average prices for the periods between 2003 to 2013. This data was collected from the published financial statements of listed companies, NSE website, Capital market authority website as well as libraries and libraries of the Kenyan media houses. Secondary data available at the NSE database on daily prices and corporate announcements as well as published data in the internet and print media was used. Stratified and convenient sampling was used to determine size and nature of the sample included in the study. Data was analysed using event study methodology. The study findings established that the significance of returns reaction to the profit warning announcements at the NSE is dependent on the company issuing the announcement. Generally, the actual returns, abnormal returns, market returns, expected returns, cumulative returns and cumulative abnormal returns generally have the same trend on profit warning announcements except for instances where cumulative actual return deviates. The standardized cumulative abnormal returns swing around the trend with sharp declines on the profit warning announcement day and an increase thereafter. Since 6.7 percent and 13.3 percent of issuing companies abnormal returns and cumulative abnormal returns respectively deviate as a result of the profit warning announcement, it is understood that there may be instances of prior market expectations of the profit warnings announcements with does not affect investor expectations and sentiments in the stock market. This prior information to the market should be avoided to make the markets effective.

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ABBREVIATIONS

CAPM	Capital Asset Pricing Method
CDSC	Central Depository and Settlement Corporation
CMA	Capital Markets Authority
EABL	East African Breweries Limited
EMH	Efficient Market Hypothesis
HO	Null Hypothesis
H1	Alternative Hypothesis
KQ	Kenya airways
NASI	NSE-All share Index
NBK	National Bank of Kenya
NYSE	New York Stock Exchange
NSE	Nairobi Securities Exchange
PAD	Post-Announcement Drift
TOTAL	Total Kenya Company Limited

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In allocating the capital effectively and productively, transparency should exist in the market so that investors will make rational, well-informed decisions. If a firm misleads the investors about the future prospect of the firm, it will be difficult for investors to make such decisions (Bodie, *et al*., 2009). According to Fama (1970), if the market is efficient, all available information should reflect in the security price and the security price will move as soon as the new information comes to the market. Based on the Efficient Market Hypothesis (EMH), the market will respond to the new information rapidly.

Companies and their advisers should be aware of the market expectations built into the company's share price. That is, earnings expectations affect the company's stock prices. The earnings estimates of companies are important for investors in the security market because investors assess the company's future income and profitability based on earnings estimates. Therefore, it impacts investors' decision of purchasing or selling the stocks.

1.1.1 Profit Warnings

Clare (2001) define profit warning as an adverse outlook for the company's future earnings and profitability through the press, which is market-relevant information and might result in revising profitability expectations from financial agents. Elayan and Pukthuanthong (2009) define profit warning as an announcement released by companies

and it reveals that the earnings will be lower than expected. The earnings drop can be expressed in other terms, like net profits, sales, earnings before interest and taxes, and earnings per share. In the definition of profit warning, the earnings expectation is used to compare with the incoming earnings. If the incoming earnings will not meet the expected earnings, the company will publish the warning announcement to the market by press, conference, or on the company website.

Holland and Stoner (1996) explain that the profit warning is one of the events that make the companies reveal price-sensitive information to the market. The 1994 Criminal Justice Act defined price-sensitive information as information that can result in a significant effect on the price of securities if the public receives it. Furthermore, Holland and Stoner (1996) point out that the significant effect of information is related to the company's main financial performance aspects such as future earnings and profitability, borrowings and capital structure.

The profit warning is classified into two types: quantitative and qualitative. Bulkley & Herrerias (2004) and Skinner (1994) note that the management adopt quantitative announcement such as "point, range and lower-bound forecasts" and qualitative announcement like "earnings will be down" or "earnings will be disappointing" to disclose bad earnings prior to the real earnings announcement. The authors call this disclosure "the earning-related disclosure".

1.1.2 Stock Returns

Jordan and Fischer (2002) defined return as the motivating force and the principal reward in the investment process and it is the key method available to investors in comparing alternative investments. They document that return has two components. The basic

component is the periodic cash receipts (or income) on investments, either in the form of interest or dividends. The second component is the change in the price of the asset – commonly called capital gain or loss. This element of return is the difference between the purchase price and the price at which the asset can be sold.

According to Reilly and Brown (2003) on the other hand, stock return is the compensation for the time, the expected rate of inflation and the uncertainty of the return after investing in stocks. Lakonisbok and Levi (1982) argue that competition among buyers requires them to compensate sellers for the delays. Rational investors, therefore, bid the observed price above that which would be observed if settlement effects were absent.

1.1.3 Effects of Profit Warnings on Stock Returns

The profit warning disclosure results in a negative market response to warning companies. However, from the long-term perspective, it is helpful for allocating the capital efficiently, reducing the information asymmetry, protecting the interests of the investors, building the investors' confidence in the market and correcting the market expectation regarding overvalued firms. If there is regulation to disclose the profit warning, there will be less information asymmetry problem. Kasznik & Lev (1995) studied the regulated firms like banks and utility providers that give reports to regulators, which indirectly inform the public. From these reports, the public will constantly obtain more detailed and timely operating information than they can obtain from the quarterly financial reports, thus information asymmetry is reduced.

Moreover, the impact of the profit warning is different based on firm specific factors, such as size. Kasznik & Lev (1995), Bulkley & Herrerias (2004), Jackson & Madura (2003), Collett (2004), Francoeur, Labelle, & Martinez (2008), and Elayan & `Pukthuanthong (2009) compared the different effects for large versus small firms following the profit warning. They divided the companies into large or small according to the total assets. All of them found that small firms were beaten more than the large firms. The market reactions following the profit warning is a complicated issue.

1.1.4 Nairobi Securities Exchange

Nairobi Security Exchange is a market for securities, licensed and regulated by the Capital Markets Authority. It was constituted in 1954 as voluntary association of stock brokers and registered under the societies Act. It has the mandate of providing a trading platform for listed securities and overseeing its member firms. The Central Depository and Settlement Corporation (CDSC) provide clearing, delivery and settlement services for securities traded at the Nairobi Securities Exchange. It oversees the conduct of the Central Depository Agents comprised of stockbrokers and investment banks which are members of NSE and custodians. Some of the securities traded in NSE include ordinary shares, preference shares and debentures.

The membership of NSE has grown over the years from one brokerage firm at initiation. As at 8th August, 2013 the NSE was constituted by 62 companies: 7 in Agricultural sector, 9 in Commercial and service sector, 2 in Telecommunication and technology, 4 in Automobile and accessories, 11 in Banking, 6 in Insurance, 3 in Investment, 9 in Manufacturing, 5 in Construction, 5 in Energy and petroleum and 1 in Enterprise market segment.

NSE is guided by rules and regulations. For instance for a company to be listed at NSE it has to meet the listing requirements which include: minimum capital requirements, prospectus showing accounts for the last five years, disclosure requirement, minimum share issue requirement, minimum number of shareholders and filing accounts every year with Capital Markets Authority (CMA). It is a requirement by the CMA and NSE regulation that listed companies should disclose information including profit warning in a manner that allows stakeholders make informed decisions on the analysis of a company's performance. Profit warning has an impact on stock returns in the NSE and the impact is negative and significant for the period of pre-warning and post-warning and on the day of actual announcement.

1.2 Research Problem

The profit warning is a complex event with advantages and disadvantages when it is issued. Therefore, it is a challengeable consideration to the companies as the choice of the type of profit warning and its information content can alter the stock value.

The Business daily newspaper from the Nation media group (December 2nd, 2012) posted that 10 companies had issued profit warnings in the year unlike the previous year where only 2 companies had made such announcements. Examples of such companies include; Uchumi Supermarket, Kenya Airways, Total Kenya, Sasini, CMC holdings, Eveready Kenya, Sameer Africa, East African Breweries limited, East Africa cables, East Africa Portland Cement company, Access Kenya, Mumias Sugar Company, CFC Bank, National Bank, Agricultural firm Kakuzi and Longhorn Kenya.

In Kenya, studies have been done to test various stock market reactions to various information generating corporate events. These include Ondigo (1995), Onyango (2004), Mbugua (2004), Kiio (2006), Kuria (2007), Ndirangu (2008), Cherono (2010), Mbaka (2010) Anyumba (2010) and Aduda and Chemarun (2010) which tested various information content ranging from annual reports, earning announcements, stock dividend announcements, cash dividend announcements, cross border listing announcement, COYA announcement, dividends signaling theory, random walk model and stock splits. Jackson and Madura (2003) found out that small firms reacted more negatively in the announcement and post-announcement periods while in the pre-announcement periods, more negative reactions were observed in large firms. Tucker (2005) reported while in the short term, returns of companies that issued profit warning were more negative relative to firms with no warnings.

From the foregoing, little is known about how the share returns of companies that issue profit warnings adjust to the arrival of the warning. This study gap on the information content of profit warnings is addressed in this study by analyzing the stock returns reaction to profit warnings announcements. The study answers the research question: What are the effects of profit warnings announcement on stock returns for companies listed at the NSE?

1.3 Objective of the Study

To establish the effects of profit warnings on stock returns at the Nairobi Securities Exchange.

1.4 Value of the Study

Knowledge of the extent of market efficiency and the reaction of the market to profit warning announcements are significant to company's management. Since the profit warning may result in negative stock returns, management would minimize their effects through conscious choice of announcements and putting in place strategies to manage investor behavioral biases.

The investors can consider the profit warning rationally and make a wise investment strategy. Investors assess the company's value and the future profitability based on the analysis of the company's financial statements and industry environment. By having knowledge about the profit warning and its impact, investors might re-assess their investment decisions thus avoid overreaction or under-reaction regarding the event of profit warning. Furthermore, some investors might benefit from the significant negative market reaction and take a speculative position right after the disclosure of the profit warning.

The findings of this study are informative to the the financial analysts and fund managers who are interested on the effect of profit warning announcement on share prices and share returns thereby adding to the information that they have in order to be in a better position to advice investors on which companies to invest in.

This study adds to the body of knowledge in the discipline of finance. The study findings are a motivation other academicians and researchers to pursue further research in other countries, and also to undertake the same research in subsequent periods or explore the topic further.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This study draws basis from several research areas. First, it examines theoretical foundations on the efficient market hypothesis, the Random walk theory and Post-announcement drift theory. Literature that documents earlier empirical studies on profit warning announcement is also discussed. Research work on insider trades around profit warning is also revealed. Finally, prior empirical research focusing on related areas of earnings announcements and anomalies at the NSE are revealed.

2.2 Theoretical Review

There are various theories that we shall discuss. These include; Efficient market hypothesis, Random walk theory and Post-announcement drift.

2.2.1 Efficient Market Hypothesis

The origin of efficient markets hypothesis dates back to 1965 when Samuelson 1965 published his proof that properly anticipated prices fluctuate randomly. The term efficient markets was first introduced in economics literature by Fama (1970).The study also known as the efficient market theory asserts that financial markets are "informationally efficient" or that prices on traded assets e.g. stocks, bonds or property already reflect known information and therefore there is no reason to believe that the current prices is too low or too high. It supports that prices of the financial assets traded such as stocks, bond, derivatives, in a market, reflect and incorporate all the available known and

relevant information. In this respect, these prices are unbiased and reflect the aggregate beliefs of all investors about future prospects of firms, market sectors and the market as a whole.

Accordingly it's thus impossible to consistently outperform the market through expert stock selection or market timing by using any information that the market already knows except through luck, and that the only way an investor can possibly obtain higher returns is by purchasing riskier investments. According to EMH stocks always trade at their fair value on stock exchanges, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. Information or news in EMH is anything that may affect prices that is unknowable in the present and thus appears randomly in the future.

2.2.2 Random Walk Theory

The random walk theory was originally examined by Maurice Kendall (1953). The theory argues that the share price movement are independent of one another and unrelated. This happens in an efficient market where the current prices of the securities represent unbiased estimates of their intrinsic values. The theory holds that the price moves in a random manner hence it is not possible to predict future prices. The price movement, whether up or down, occurs as a result of new information and since investors cannot predict the kind of new information (whether good or bad), it is not possible to predict future price movement. The random walk theory is closely related to the EMH.

When Kendall (1953) studied 22 UK stock commodity price series, he concluded that in a series of price which are observed at fairly close intervals the random changes from one

term to the next are so large as to swamp any systematic effect which may be present. The data behaves almost like wandering series. This poses a major challenge to market analysts who try to predict the future path of security prices.

2.2.3 Post-Announcement Drift

PAD is the phenomenon that stock returns continue to drift downward (upward) following a negative (positive) earnings signal reported at the scheduled earnings announcement date. In a seminar work, Ball and Brown (1968) were the first one who provided evidence of the PAD phenomenon after studying annual earnings announcements in the US for the period 1946-1966. Explanations given regarding the source of drift by researchers include methodological issues, misspecification of normal returns and market under reaction. Bernard and Thomas (1989, 1990) and Ball (1992) show that PAD cannot be attributed to research design flaws such as: survivorship bias, hindsight bias arising from restatements of CRSP data or measurement errors in CRSP returns resulting from imbalances in quoting bid or ask prices. In addition, Bernard and Thomas (1989) studied whether PAD is the result of CAPM misspecifications. They show that neither factors from the arbitrage-pricing theory nor beta fluctuations around earnings announcements are able to explain the drift. Fama (1998) failed to explain the phenomenon using a three-factor model (Fama & French, 1996), which extends the CAPM model with two additional factors; the difference between the return on a portfolio of small and large stocks and the difference between portfolios of high and low book-to-market stocks.

The third explanation is that markets under react to earnings announcement, and is considered by many researchers as the predominant explanation. Market under-reaction is

the phenomenon that new information is incorporated into stock prices with a delay resulting in a post-event drift. However the cause of this market under-reaction remains unclear. According to Bernard and Thomas (1990) market under reaction is a consequence of investors who wrongly believe earnings follow a seasonal random walk process, i.e. future earnings equal corresponding prior period earnings. This argument is based on the finding that a relatively large part of the drift occurs around the next earnings announcement, suggesting the market tends to be surprised.

Consequently the model predicts that investors under react to public information. In a contemporaneous paper Barberis, Shleifer and Vishny (1998) develop a model of investor behaviour where market under reaction is the result of investors suffering from a conservatism bias, the phenomenon that people only gradually adjust their beliefs to new information (Edwards, 1968). As a consequence investors assume earnings follow a mean-reverting process and underweight the information content of earnings announcements.

2.3 Determinants of Stock Returns of Listed companies

A growing number of studies found that the cross-sectional variation in average security returns cannot be explained by the market beta alone, and showed that fundamental variables such as size (Banz, 1981), ratio of book-to-market value (Rosenberg et al., 1985; Chan et al., 1991), macroeconomic variables and the price to earnings ratio (Basu, 1983) account for a sizeable portion of the cross-sectional variation in expected returns.

2.3.1 Macro Economic Indicators

Abugri (2006) performed a study to determine whether selected macroeconomic indicators like exchange rates, interest rates, industrial production and money supply in four Latin American countries significantly explain market returns. His research results indicated that the global factors are consistently significant in explaining returns in all the markets. The country macroeconomic variables are found to impact the markets at varying significance and magnitudes.

Robert (2008) while conducting a study on the effect of macroeconomic variables on stock market returns for four emerging economies of Brazil, Russia, India and China affirmed that there was no significant relationship between present and past market returns with macroeconomic variables, suggesting that the markets of Brazil, Russia, India and China exhibit weak form of market efficiency. Coleman and Tettey (2008) while examining the impact of macroeconomic variables on Ghana Stock Exchange using quarterly data for the period 1991 to 2005 concluded that market lending rates from deposit money banks have adverse effect on stock market performance. The study also found inflation to be negatively related to stock market performance and this effect takes time because of the presence of a lag period.

Chen and Jin (2004) conducted a multivariate analysis on twenty portfolios of the New York Stock Exchange (NYSE) using a set of economic variables. The authors concluded that the conditional excess rates of returns are explained by lagged expected inflation, lagged unexpected premium for default, lagged unexpected change in term structure, a seasonal dummy, and lagged market returns.

2.3.2 Firm Size

Fama and French (1992) as well as Daniel and Titman (1997), however the seminal work was performed by Banz in 1981. His findings show that the size of a firm and the return on its common stock are inversely related. This suggests that size may be a proxy for other factors that were not tested but are correlated to size. Brown, Kleidon and Marsh (1983) find that stock returns on size are linearly related to the logarithm of the size variable but the magnitude and sign of that relation are not constant over time.

Ndungu (2003) examined the role of firm size in explaining the cross section of average stock returns in Kenya using weekly returns for the period between 1996 and 2002. The study finds that size effect is weakly exhibited in the NSE. Wafula (2009) investigates the drivers of returns for firms listed at the NSE. The independent variables in the study were book to market ratio, cash flow ratio, dividend yield, firm size and profitability ratio. The study finds that stock returns are weakly driven by the firm specific factors. The sign on the independent variables are mixed having an indication that the disturbance variable is significant. The stock returns for firms listed in the NSE are strongly explained by other factors which were being covered in the study by the error term.

Olowoniyi & Ojenike (2012) investigated the determinants of stock returns of listed firms in Nigeria. Stock return (dependent variable) was measured by dividend layout, expected growth was measured by capital expenditure divided by total assets, size was proxied by logarithm of firms' total assets, profitability was proxied by ratio of earnings before interest, tax and depreciation on total assets, tangibility was measured by total fixed assets divided by net profit after tax while leverage was measured by ratio of book value of total debt to total assets. The findings suggested that with the exception of profitability

and tangibility (which were significantly and negatively related to stock return), all the independent variables were positively and significantly related to stock return.

2.3.3 Profit Warning Announcements

According to Elayan (2009), profit warnings are defined as earnings forecasts made by management that warns of an expected earnings shortfall in relation to a relevant standard. Profit warnings may be released at any time prior to the announcement of actual earnings report. The earnings shortfalls may be in terms of net profits, sales, earnings before interest and taxes (EBIT), and earnings per share (EPS), etc.

In their investigation of management's discretionary before a large earnings disappointment, Kasznik and Lev (1995), reported that the likelihood of warning increased with firm size, the presence of an earlier forecast and membership in the high technology industry. Warnings were also found to be associated with permanent earnings decreases. Helbok and Walker's (2003) findings in the less litigious UK environment where firms reported less frequently indicated that profit warnings are value-relevant events with firms experiencing an average of 20% decline in share price in response to them. They also found profit warnings to signal a permanent earnings decline. Firms did not appear to be reprimanded for their honesty when issuing profit warnings where Tucker (2005), found that while in the short-term , their returns were more negative relative to firms with no warnings ,their long run returns were more positive. In terms of long term consequences, Bulkley, Harris and Herreiras (2002) also found strong reversal one to two years after the warnings, mainly in small firms

Mohamed (2010) studied the effect of earning announcements on the stock prices of companies listed at the NSE. He studied 45 companies declaring earnings between January 2004 and December 2008. The study found that earning announcement may carry some information for the market and stock prices may be adjusted accordingly. The findings showed that statistically significant negative abnormal returns were observed in the post and pre-earnings announcements period.

Jackson and Madura (2003) reported a strong negative reaction, starting five days before the announcement with the reaction complete within five days after the warning .While there was no overreaction to the announcement, small firms reacted more negatively in the announcement and post-announcement periods while in the pre-announcement period, more negative reactions were observed in large firms. Collet (2004), studied the accounting detail provided in profit warnings, in particular information on sales growth and operating margin changes and found only 35% and 42% of firms issuing warnings and upgrades respective provided quantitative information.

2.3.4 Insider Trades around Profit Warnings

Numerous studies have investigated insider trading activity around corporate announcements including equity offerings (Gombola, Lee and Liu, 1997: Ching, Firth and Rui, 2006), bankruptcy (Seyhun and Bradeley, 1997)and takeovers (Seyhun, 1990).They show that insiders are aware of these events well in advance of their announcements, in some cases up to years beforehand. Seyhun and Bradley (1997) report the occurrence of insider selling commencing five years before the bankruptcy filing that continues up to the announcement month. Insider also sell before a fall in price and buy after prices had fallen. According to Ke, Huddalt and Petroni (2003), they trade on

specific information about future accounting disclosures up to two years prior. In their examination of the association between insider trading and voluntary disclosures, Cheng and Lo (2006) report that insiders withheld good news and increased the number of bad news disclosures when they purchase shares but they did not attempt to increase prices when they sold their shares. This is possibly due to litigation concerns associated with sales.

The joint signal of insider trading and the voluntary release of profit warnings may convey insider's private information to the market ,at the least cost in an efficient signal equilibrium (John and Mishra,1990).Net trading by insiders contribute to the overall information content of the corporate announcement. With insiders having under diversified holdings in their own firms, their net trading activity may provide a signal of private information which includes, in addition to information about the future prospects of the firm, the amount of effort individual insiders intend to invest .This is particularly interesting in the event of a profit warning because Donaldson and Weigand (2006) found that in firms that filed for voluntary bankruptcy, insiders had fewer incentives to maximise shareholders wealth compared to firms experiencing involuntary bankruptcy. As a result, the former were net sellers while latter were net buyers in their own firms.

There is limited research on profit warnings announcement at the NSE. However, Dulacha, Hancock and Izan (2006) in their study on corporate voluntary disclosures at the NSE finds that in all years (1992-2001), listed companies make voluntary information disclosures in their annual reports. However, there are related studies on market efficiency at the NSE. Muragu (1994) provides evidence consistent with the market efficiency at the NSE. He observed a low serial correlation of stock prices consistent with

weak form efficiency. Kiio (2006) empirical investigation into market efficiency and the effects of cash dividends announcements on share of companies listed on the NSE reveal that cumulative market adjusted returns to be significant for ten days before and ten days after the announcement for dividend paying firms. This indicates that share prices are indeed responsive to cash dividend announcements.

2.4 Empirical Literature

Empirical studies on profit warnings by Elayan (2009) define profit warnings as earnings forecasts made by management that warns of an expected earnings shortfall in relation to a relevant standard. Management profit warnings may be released at any time prior to the announcement of actual earnings report. The earnings shortfalls may be in terms of net profits, sales, earnings before interest and taxes (EBIT), and earnings per share (EPS), etc.

Previous research has shown that the timing of management disclosures affect the revision of subsequent analyst forecasts. Baginski and Hanssell (1990), show that analysts follow management forecasts more closely in the fourth quartet. These issues suggest that the differential timing of profit warnings have several implications for shareholder reaction.

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Onyango, (2004) in his study covered 16 companies out of a population of 48 listed companies at NSE, discovering the period 1998-2003. The study concluded that the earnings announcement contain relevant information which is fully impounded the stock prices prior to or almost instantaneously at the time of announcement. Secondary evidence resulting from the study showed that NSE shows the presence of semi strong model of EMH. He suggested further research on information content to support his conclusion.

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Insider trading activity around profit warnings has not yet been studied though similarities exists with studies around financial distress (Seyhun and Bradley, 1197), breaks in earnings trends (Ke, Huddart and Petroni, 2003) and around management earnings forecasts (Noe, 1999; Cheng and Lo, 2006). Seyhun and Bradley (1997) reported insider selling beginning five years before a bankruptcy filing, escalating to the announcement month. Top executives were responsible for more intense selling with insiders buying after prices have fallen and selling before they fall. According to Noe (1999), managers are opportunistic in timing their trades to increase personal gains given they are aware of the intention to trade and obligation to release information. He reported that managers sell more after the release of good news and buy more after the bad news releases. Cheng and Lo (2006) provide additional evidence that when managers intend to buy, increase the number of bad news forecasts while delaying good news to decrease share price. However, they were unable to show that managers increased good news forecasts or avoid bad news forecasts when selling, possibly due to the risk of litigation

Prior literature has explored why firms preannounce. Lang and Lundholm (2000) conducted research that examined whether voluntary disclosures represented an attempt to reduce information asymmetry between management, shareholders and analysts. A reduction in information asymmetry lowers the opportunity for investors to profit from informed trading and therefore reduces the costs to investors of acquiring private information (Diamond, 1985; King et al, 1990). Moreover, a reduction in information asymmetry increases liquidity in the company's stock and reduces the cost of capital (Diamond and Verrecchia, 1990). Firms warn in order to reduce earnings surprises. Typically, investors and analysts do not like negative earnings surprises and they discount firms that are not transparent about potential negative earnings. King, et al (1990); Skinner (1994) and Frankel et al (1995) observed that by not being candid about their future earnings, firms may tarnish their reputation with analysts and investors.

One motivation for pre-announcing earnings is to pre-empt litigation. Skinner (1994) argues that announcing bad news early can mitigate litigation costs by reducing the number of potential plaintiffs who could claim that they bought shares at a time when management had held negative undisclosed information. Consistent with this argument, Skinner (1994) documents that unlike firms with good news, firms with bad news are more likely to voluntarily disclose earnings-related information prior to the formal earnings announcement. Further, Kasznik and Lev (1995) find that firms in high-litigation industries have a higher probability of warnings before large earnings surprises.

A second motivation for pre-announcing earnings is to affect the overall market reaction to earnings news. Conversely, Skinner (1994, 1997) suggests that management voluntarily issues earnings estimates with negative implications in an attempt to avoid

shareholder lawsuits that may be brought upon management for its failure to release material information in a timely manner. On the other hand, Damodaran (1988, 1989), Mendenhall and Nichols (1988) and Chen and Mohan (1994) report that management releases profit warnings by timing the releases of bad news hence minimize negative market reaction. These arguments suggest that, in the long run, the market should value profit warning firms for their openness.

Nevertheless, Kasznik and Lev (1995) show that warning firms have higher negative stock market reactions than non-warning firms given that both have the same level of earnings surprise. Kasznik and Lev (1995)'s finding is counterintuitive. Tucker (2007) argues warning firms are penalized because announcing firms tend to have more bad news than non-warning firms.

Bulkley, Harris and Herreiras (2002) noted that profit warnings are the discretionary disclosure of bad news by companies prior to earnings announcement. They may take the form of a specific revised earnings forecast (quantitative warnings) or may be a qualitative statement that simply states, or implies, that earnings will be significantly less than current brokers' expectations. Approximately half of all companies whose earnings announcements are going to be "bad news" warn in advance (Kasznik and Lev 1995).

Numerous studies have investigated insider trading activity around corporate announcements including equity offerings (Gombola, Lee and Liu, 1997: Ching, Firth and Rui, 2006), bankruptcy(Seyhun and Bradeley, 1997)and takeovers (Seyhun, 1990).They show that insiders are aware of these events well in advance of their announcements, in some cases up to years beforehand. Seyhun and Bradley (1997) report

the occurrence of insider selling commencing five years before the bankruptcy filing that continues up to the announcement month.Insider also sell before a fall in price and buy after prices had fallen. According to Ke, Huddalt and Petroni (2003), they trade on specific information about future accounting disclosures up to two years prior. In particular, insider selling increased three tonine quarters before a break in a string of consecutive quarterly earnings increases. In their examination of the association between insider trading and voluntary disclosures, Cheng and Lo(2006) report that insiders withheld good news and increased the number of bad news disclosures when they purchases shares but they did not attempt to increase prices when they sold their shares. This is possibly due to litigation concerns associated with sales.

The joint signal of insider trading and the voluntary release of profit warnings may convey insider's private information to the market ,at the least cost in an efficient signal equilibrium(John and Mishra,1990).Net trading by insiders contribute to the overall information content of the corporate announcement. With insiders having under diversified holdings in their own firms, their net trading activity may provide a signal of private information which includes, in addition to information about the future prospects of the firm, the amount of effort individual insiders intend to invest .This is particularly interesting in the event of a profit warning because Donaldson and Weigand (2006) found that in firms that filed for voluntary bankruptcy, insiders had fewer incentives to maximise shareholders wealth compared to firms experiencing involuntary bankruptcy. As a result , the former were net sellers while latter were net buyers in their own firms.

There is limited research on profit warnings announcement at the NSE. However, Dulacha, Hancock and Izan (2006) in their study on corporate voluntary disclosures at the

NSE finds that in all years (1992-2001), listed companies make voluntary information disclosures in their annual reports. However, there are related studies on market efficiency at the NSE. Muragu (1994) provides evidence consistent with the market efficiency at the NSE. He observed a low serial correlation of stock prices consistent with weak form efficiency. Kiio (2006) empirical investigation into market efficiency and the effects of cash dividends announcements on share of companies listed on the NSE reveal that cumulative market adjusted returns to be significant for ten days before and ten days after the announcement for dividend paying firms. This indicates that share prices are indeed responsive to cash dividend announcements.

2.4 Summary of Literature Review

Kasznik and Lev (1995) found that warnings are associated with permanent earnings decreases. Helbok and Walker's (2003) find that profit warnings are value-relevant events with firms experiencing a decline in share price and earnings in response to them. Bulkley, Harris and Herreiras (2002) also found strong reversal one to two years after the warnings, mainly in small firms. Jackson and Madura (2003) reported no overreaction to the announcement as small firms reacted more negatively in the announcement and post-announcement periods while in the pre-announcement period, more negative reactions were observed in large firms. Onyango (2004) found that the earnings announcement contain relevant information fully impounded in stock prices prior to or almost instantaneously at the time of announcement. Cheng and Lo (2006) provide additional evidence that when managers intend to buy, increase the number of bad news forecasts while delaying good news to decrease share price. Mohamed (2010) found that earning

announcement may carry some information for the market and stock prices at the NSE may be adjusted accordingly. These foregoing studies look at reaction of share prices to price warning announcements in both developed and emerging equity markets. The current study looks at the reaction of share returns to price warnings announcement in an emerging market context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, there is a definition of the research design, population and sample size together with a description on data collection and data analysis techniques adopted in the study.

3.2 Research Design

The test for effects on share returns was accomplished by use of descriptive design using an event study, which is useful when measuring the effect of an economic event. An event study is a statistical method that assesses the impact of an event on the value of a firm. Event studies have been used since the 1930's with increased sophistication and modification over the years. Event studies have been used in a large variety of studies including earnings announcement, corporate evaluations, debt or equity issues, mergers and acquisitions, investment decisions and corporate social responsibility.

3.3 Population of Study

The population of the study constituted of all the listed companies at the NSE that issued profit warnings announcement between the years 2003 to 2013. This period was considered as adequately long enough to capture any incidences of profit warning. In 2002, the Capital Markets Authority put in place the mandatory disclosure rules on profit warning announcements for listed companies. In the event of multiple warnings, the

warnings are treated as separate events. The population of study included fifteen (15) companies as shown in appendix one. A census will be done for all the fifteen companies.

3.4 Data Collection Method

The study relied on secondary data from the NSE daily market reports, press websites such as nation media and standard media and stock brokers research departments. The data collected included corporate announcements in form of profit warnings, company details, the date of the warning, the industry in which the company belonged and the primary reason given for the warning as well as daily observed average prices for the periods between 2003 to 2013. This data was collected from the published financial statements of listed companies, NSE website, Capital market authority website as well as libraries and libraries of the Kenyan media houses. Secondary data available at the NSE database on daily prices and corporate announcements as well as published data in the internet and print media was used. Stratified and convenient sampling was used to determine size and nature of the sample included in the study. Data was analysed using event study methodology based on Campbell et, al. (1997) structure to an event study.

3.5 Data Analysis Method

The following methods were used to analyse the data collected on daily share prices; Average prices, returns and cumulative returns. This statistical analysis was carried out using Ms-Excel and SPSS by manipulating data on stock prices at the NSE. Share price movements are computed over several windows ranging in length from one to thirty days. Standard event study procedures are used to calculate stock returns. The return in any

given period is the market model residual, which is the difference between the stock actual price and the previous price based on the market for that period divided by the previous price. To determine the individual stock prices betas in the estimation model, an estimation period of 30 trading days is used, ending five days before the event date. Hence, the market adjusted returns are calculated on a 30 day computed betas for each firm. Statistically significant returns at announcement accumulated over the entire event window, would support the study on the returns and hence their effect on firm valuation.

3.5.1 Event Date Specification

The profit warning date is assigned day 0 if it happens on trading day. If announcements are done on a non-trading day, the next available trading day is assigned day 0. The event period is taken to be five days before the announcement to five days after the announcement of profit warning.

Returns are measured for the announcement period (day -5 to day +5). Measure of return is constructed on each day over the event window relative to "normal" control period (estimation window covering the 30). Returns are defined as the difference between the actual price and previous price divided by the previous price surrounding a corporate event in this case a profit warning announcement.

$$\mathrm{Re}turn_t = \left(\frac{\mathrm{Pr}ice_t - \mathrm{Pr}ice_{t-1} + DIV_t}{\mathrm{Pr}ice_{t-1}} \right) \quad \text{.....3.1}$$

Where the Actual price also known as the average price is given by the average of Highest and Lowest price of the stock price at a given day expressed as:

Actual price = (Highest price + lowest price)/2

The highest and lowest prices are provided as secondary data from the Nairobi securities exchange for the specific days.

Cumulative returns are the sum of returns in a given time period. The cumulative returns are gotten by adding the return for the day to the previous day returns. It's important in indicating the growth in returns over the period of analysis whether it's increasing or decreasing over the period. In some days, the returns decrease thus having a negative effect on the cumulative returns whereas in some days, the returns increase having a positive effect on the cumulative returns.

The changes in the NSE index for the same period will also be computed. This will be denoted as the market return.

$$NSE\ 20\ share\ \ Index\ Return\ in\ time\ t(Market\ Return) = \frac{(NSE_t - NSE_{t-1})}{NSE_{t-1}} \quad \text{..... 3.2}$$

The following market model will be applied; $AR = \alpha + \beta X + e$

Where;

AR= actual returns

X = market return

β= market risk/partial correlation coefficient for market return and actual returns

α= constant

e = error term,

The Expected returns will be generated from the following;

$$Y = \alpha + \beta X \quad \text{.....3.3}$$

Where;

Y = Expected Return

The Abnormal returns is given by Actual returns minus the Expected returns

Abnormal Return = Actual Returns - Expected Returns 3.4

The cumulative abnormal returns are gotten by adding the abnormal return for the day to the previous day abnormal returns. It's important in indicating the growth in returns over the period of analysis whether it's increasing or decreasing over the period. In some days, the returns decrease thus having a negative effect on the cumulative returns whereas in some days, the returns increase having a positive effect on the cumulative returns.

Standardized cumulative abnormal return is then computed as the abnormal returns on security *i* on day *t* divided by the standard deviation of abnormal returns on security *i* on day *t.*

$$SAR_{it} = \frac{AR_{it}}{\delta(AR_{it})} \quad \text{.....3.5}$$

3.5.2 Tests of Significance of the Study

Test statistics were used to measure the statistical significance of the cumulative abnormal return (CAR). Analysis of variances (ANOVA) was applied where Cumulative Abnormal Returns (CAR) means were compared across the profit warnings announcements to check whether some profit warnings had more informational content compared to others.

The level of significance for the ANOVA and t-test was 5% (95 % confidence level). If the significance number found is less than the critical value (α) set at 0.05, then the conclusion is that the information content of profit warning is significant. In other words, there exists significant difference in abnormal returns before and after the profit warning announcement. Otherwise the events study concludes that profit warnings announcements does not influence stock returns.

CHAPTER FOUR

DATA ANALYSIS AND INTEPRETATION

4.1 Introduction

This chapter presents the results of the analysis and findings of the study with reference to the study objectives. The first section of the chapter presents a summary of the data analysis method used. The second section presents the findings of the study and it includes relevant tables and figures that help to explain the results of the data analysis. The last section of the chapter presents a summary of findings and interpretation of the results.

4.2 Descriptive Statistics

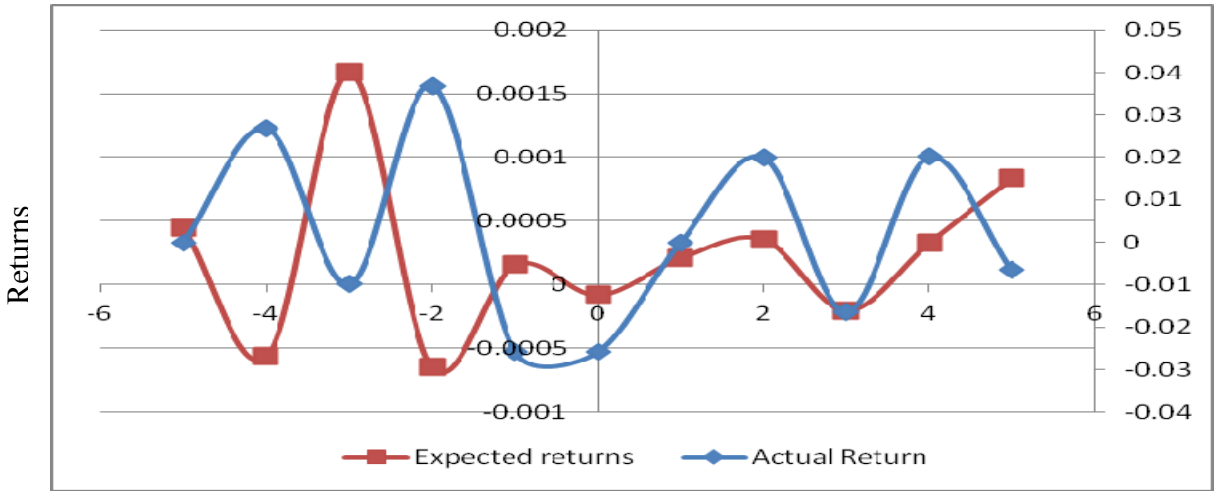
The objective of the study was to establish the effects of profit warnings on stock returns at the Nairobi Securities Exchange (NSE). To achieve this objective, event study methodology was used for fifteen profit warning events in Kenya as attached in appendix one for the period 25th August, 2005 to 30th July, 2013. The study analyzes the performance of the securities market and the company stock returns before and after the profit warnings announcements.

Secondary data obtained from the NSE was compiled and analyzed in Excel format and then transferred to Statistical Package for Social Sciences (SPSS) for further statistical data analysis. The study looked at how the Nairobi security exchange and specific company stocks have been fairing on during a profit warning announcements.

4.3 Return Trends on Profit warning Announcement

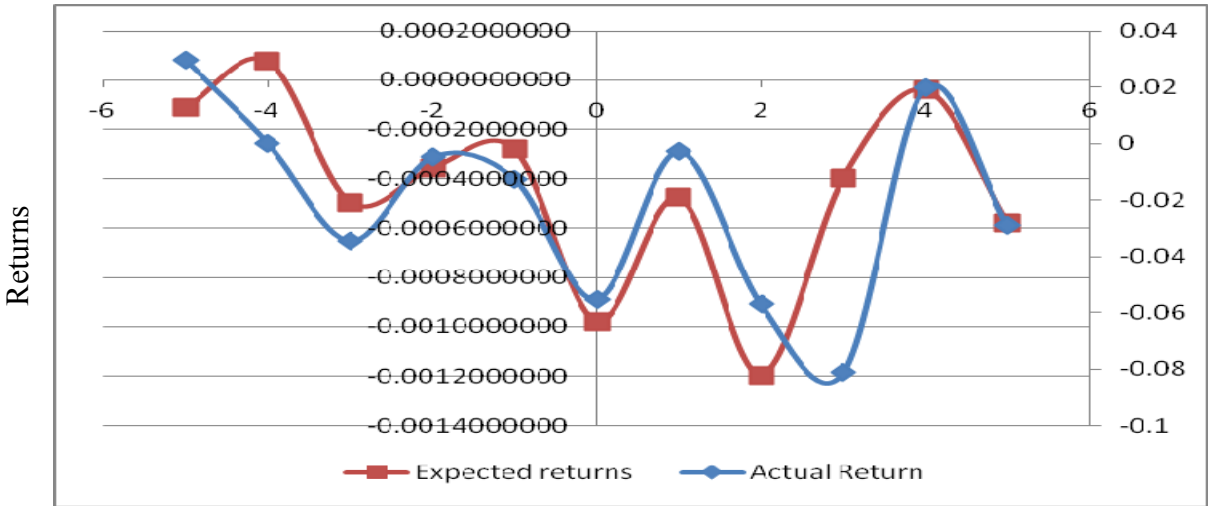
Figures 4.1 to 4.15 below and appendices 2.1 to 2.15 presents the movements in actual return, abnormal return, cumulative return and market returns for the specific companies during the profit warning period.

Figure 4. 1: CFC Stanbic Returns on Profit Warning Announcement



As presented in figure 4.1 above, the actual returns diverge from the expected returns until three days after the announcement and diverge thereafter again. Actual return dips lowest one day to the profit warning announcement.

Figure 4. 2: Uchumi Returns on Profit Warning Announcement



As presented in figure 4.2 above, Uchumi actual returns and expected returns depict similar movement patterns throughout the event window. Both returns decline on the announcement day then rises and declines two days thereafter.

Figure 4. 3: Mumias Returns on Profit Warning Announcement

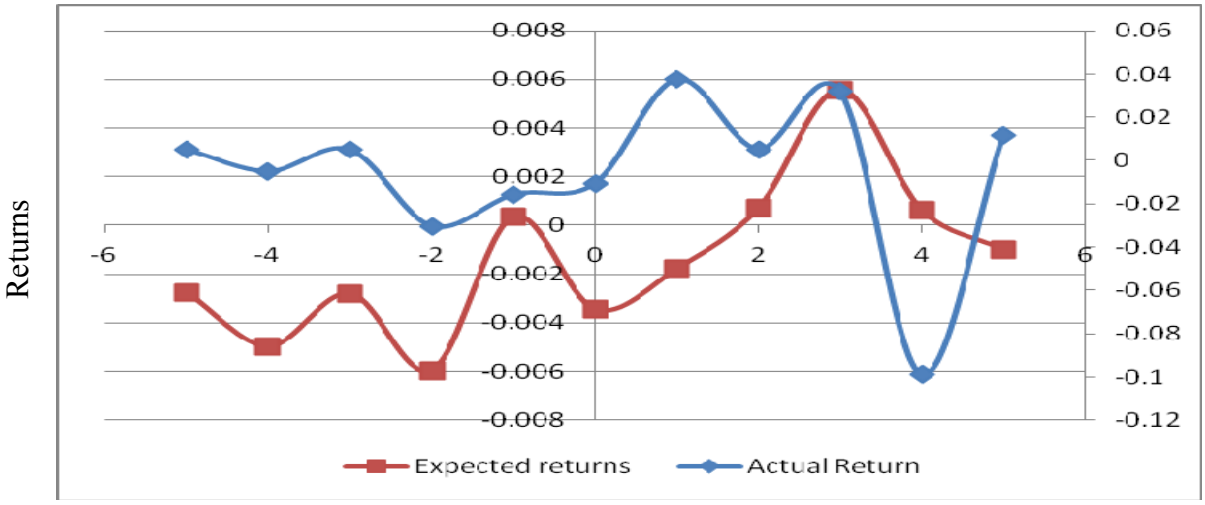
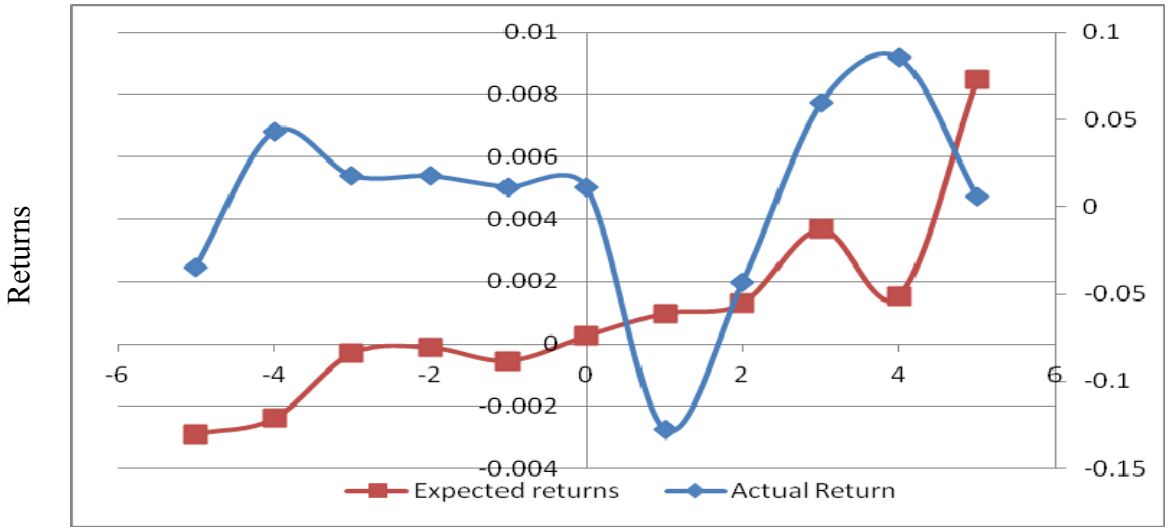


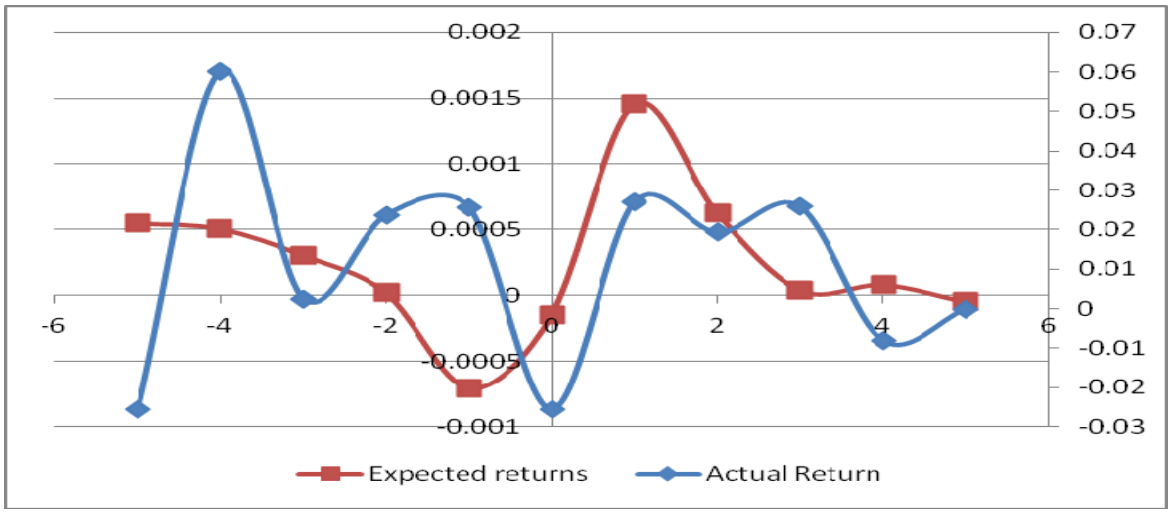
Figure 4.3 above presents the returns for mumias. The actual returns and expected returns do not move in synchrony. The actual returns exceed the expected returns until three days after the announcement.

Figure 4. 4: NBK Returns on Profit Warning Announcement



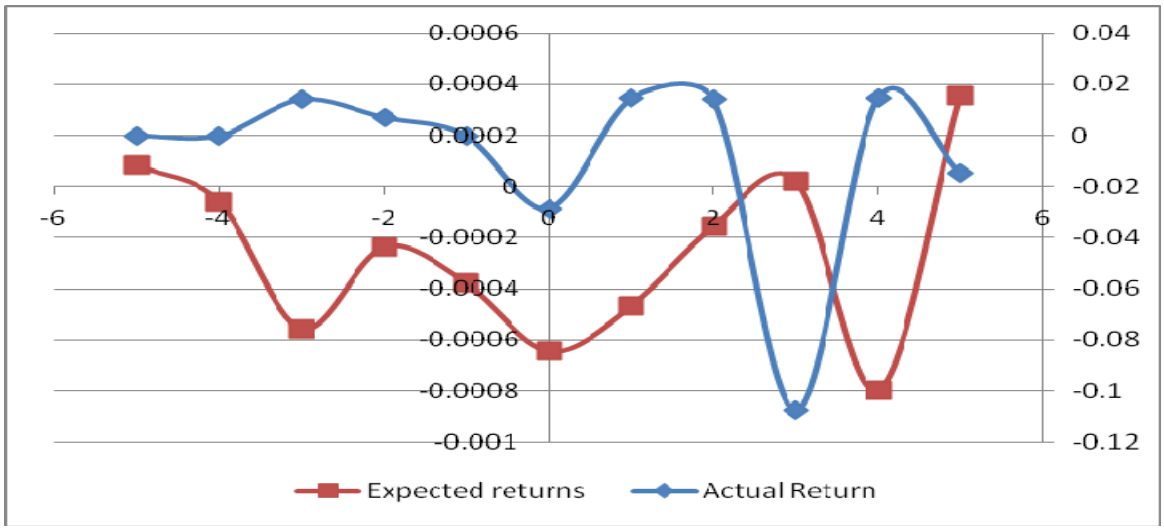
As presented in figure 4.4 above, prior to the profit waning announcement, the actual returns and expected returns do not have the same pattern as actual returns decline slightly but expected returns increase gradually. One day after the warning, the actual returns slide below the expected returns but rises beyond the expected return on the next day.

Figure 4. 5: Longhorn Returns on Profit Warning Announcement



As presented for Longhorn in figure 4.5 above, actual returns decline to level zero on the price warning announcement day. The expected returns decline gradually towards day one before the announcement and then starts to rise gradually until one day after the announcement then declines thereafter.

Figure 4. 6: Kakuzi Returns on Profit Warning Announcement

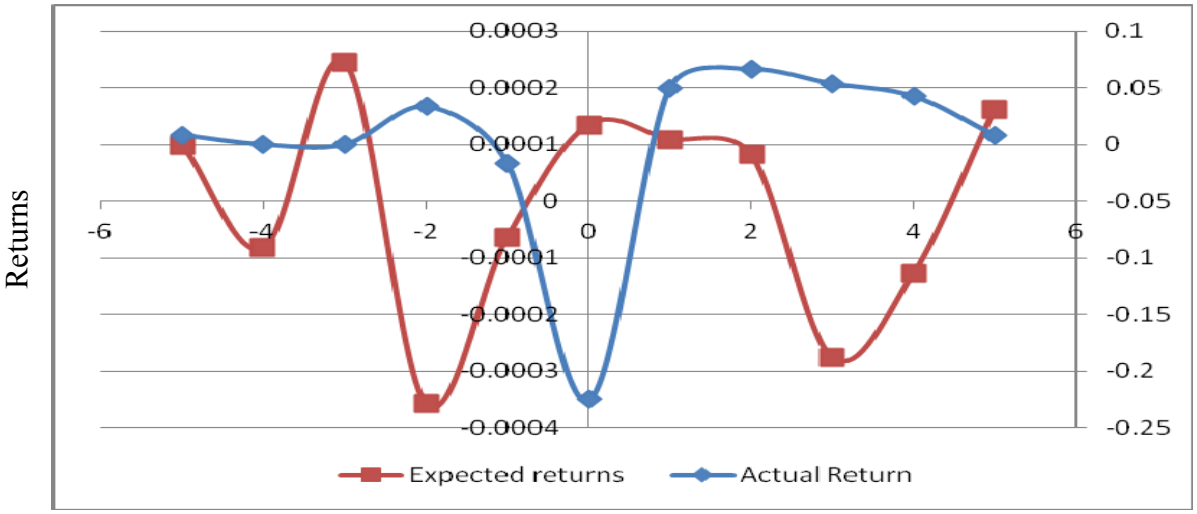


As presented in figure 4.6 above, during the event window, the actual returns for Kakuzi are more than the expected returns which gradually decline prior to the profit warning announcement. On the profit warning announcement day, both the expected returns and actual returns decline at different levels. After which they subsequently rise and decline with different patterns.

Figure 4. 7: EA Cables Returns on Profit Warning Announcement

As presented in figure 4.7 above for EA cables, the actual returns rise slightly before the profit warning announcement but declines on the warning day and subsequently rises. Before the warning, the expected returns swung between the positive and negative. Two days after the announcement, the expected and actual returns move in the same pattern.

Figure 4. 8: Eveready Returns on Profit Warning Announcement



During the profit warning announcement event window for Eveready, the actual returns increase slightly and then declines on the event day and then rises post the profit warning announcement. As indicated in figure 4.8, the expected returns have a different trend from the actual returns.

Figure 4. 9: Access Returns on Profit Warning Announcement

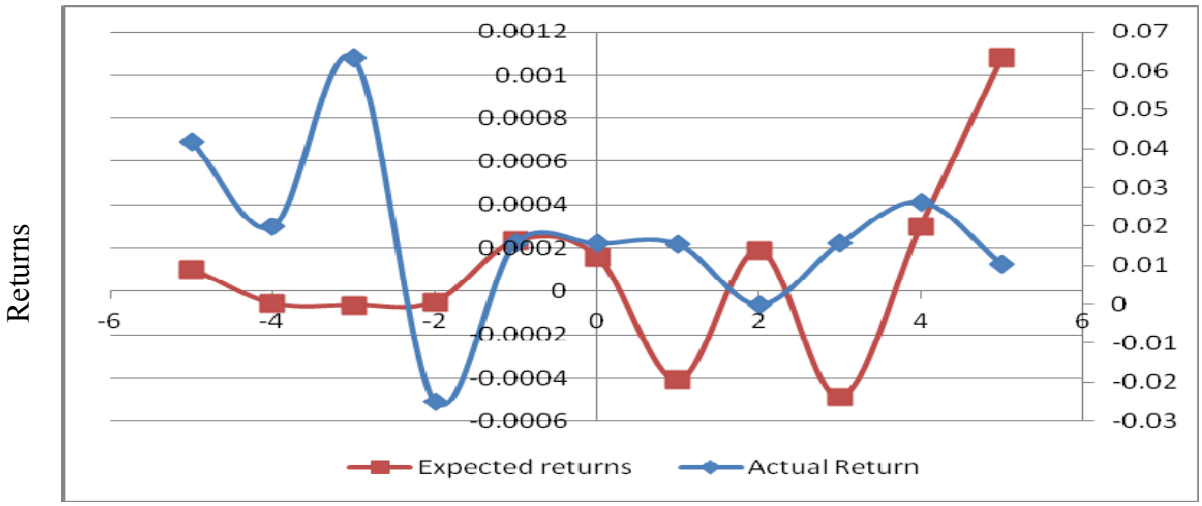


Figure 4.9 above shows that the actual returns and expected returns have different trends throughout the event window. Actual returns decline two days to the announcement and then rises thereafter. It further declines two days after the announcement but rises thereafter.

Figure 4. 10: Sasini Returns on Profit Warning Announcement

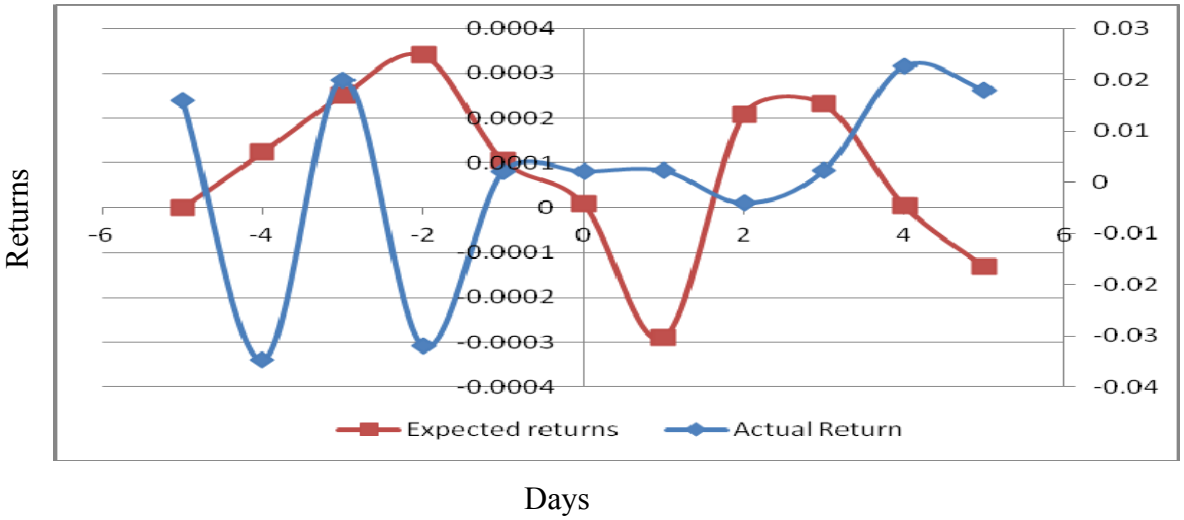
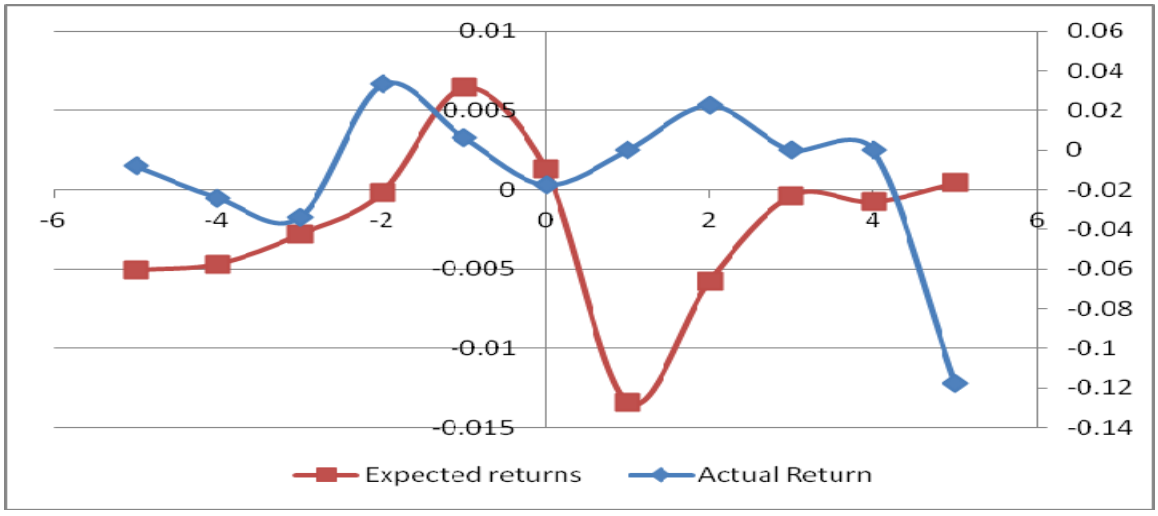


Figure 4.10 presents that Sasini actual returns and expected returns do not have the same trend throughout the event window. The actual returns swing on a daily basis below the expected returns prior to the announcement. However, on day to the announcement, the actual return exceeds the expected returns which decline to one day after the announcement day.

Figure 4. 11: Sameer Returns on Profit Warning Announcement

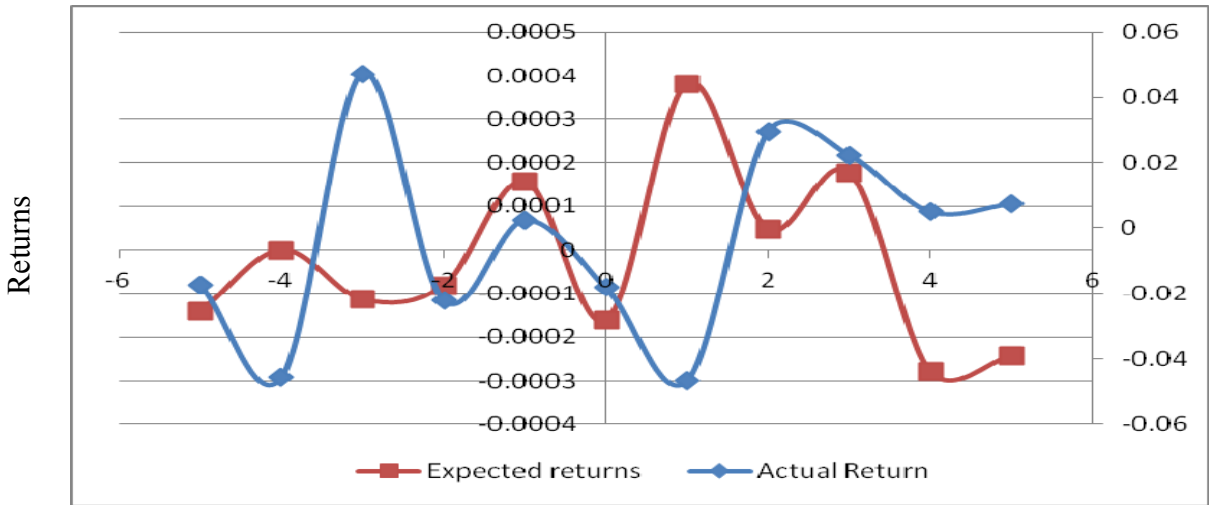
Sameer actual returns and expected returns and market returns do not have the same trend throughout the event window as presented in figure 4.11 above. Prior to the announcement, actual returns surpass expected returns but declines up to one day past the announcement when the expected returns peaks and subsequently declines.

Figure 4. 12: Total Returns on Profit Warning Announcement



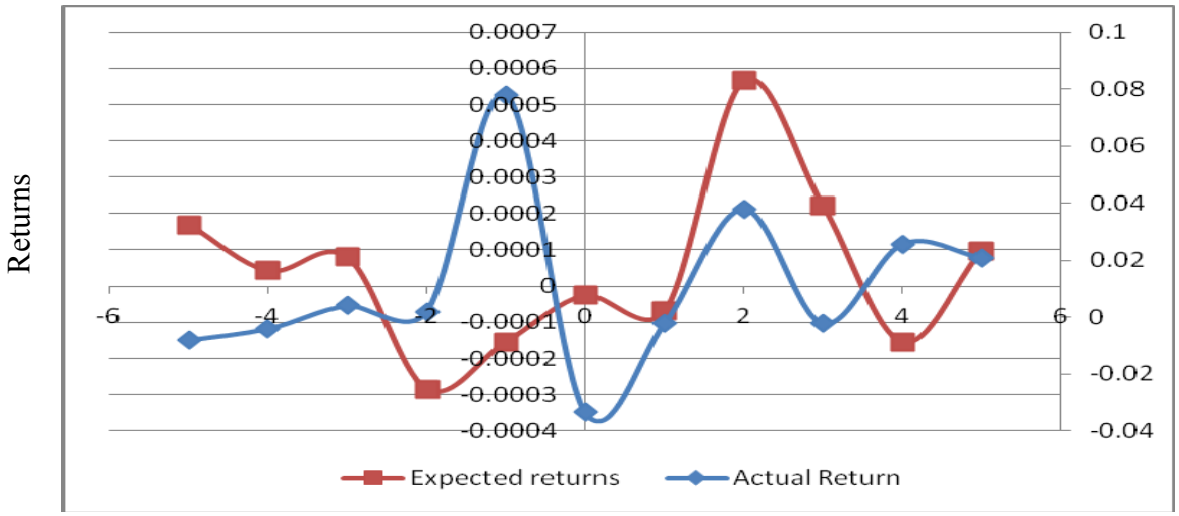
As presented in figure 4.12 above, during the event window, the actual returns and expected returns for Total are not similar. The actual returns gradually swing with increase and decrease both prior and after the announcement. The expected returns increases prior to the announcement and then declines sharply after the announcement and rises one day after the announcement.

Figure 4. 13: CMC Returns on Profit Warning Announcement



As presented in figure 4.13 above, the actual returns and expected returns for CMC do not move in synchronicity throughout the event window. Prior to the announcement, actual returns swing upwards and downwards daily till one day after the announcement when it rises and declines gradually thereafter. Expected returns swing to positive values and to negative values throughout the event window.

Figure 4. 14: Kenya Airways Returns on Profit Warning Announcement



As presented in figure 4.14 above, the actual returns and expected returns for Kenya airways do not move in tandem on profit warning announcement. The actual return declines low on the announcement day but rises for two days thereafter.

Figure 4. 15: EABL Returns on Profit Warning Announcement

Figure 4.15 above presents that the actual returns and expected returns for EABL do not move in the same pattern prior to the profit warning announcement. The expected return declines and then increases when the actual return increases and the declines. On the warning announcement, the expected return dips lower but that actual return rises to strat declining gradually after one day.

4.3 Tests of Significance

Parametric t-test was used to establish the statistical significance of the abnormal returns (AR), cumulative abnormal returns (CAR) and standardized cumulative abnormal returns (SCAR) over the event window period.

4.3.1 Test of Significance on Abnormal Returns

This study tests the following hypothesis:

Null Hypothesis: Price warnings announcement has no effect on returns at the Nairobi Securities Exchange

Alternate Hypothesis: Price warnings announcement has an effect on returns at the Nairobi Securities Exchange.

Table 4. 1: Descriptive Statistics for Abnormal Returns

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Abnormal Return (EABL)	11	.00	.019	.006
Abnormal Return (Kenya Airways)	11	.01	.029	.009
Abnormal Return (CMC)	11	.00	.030	.009
Abnormal Return (Total)	11	-.01	.041	.012
Abnormal Return (Sameer)	11	.00	.015	.004
Abnormal Return (Sasini)	11	.00	.019	.006
Abnormal Return (Access)	11	.02	.022	.007
Abnormal Return (Eveready)	11	.00	.080	.024
Abnormal Return (EA Cables)	11	.00	.043	.013
Abnormal Return (Kakuzi)	11	-.01	.036	.011
Abnormal Return (CFC Stanbic)	11	.00	.022	.007
Abnormal Return (Uchumi)	11	-.02	.034	.010
Abnormal Return (Mumias)	11	.00	.036	.011
Abnormal Return (NBK)	11	.00	.057	.017
Abnormal Return (Longhorn)	11	.01	.026	.008

The descriptive statistics for the variables is presented as number of observations (N), the mean and the standard deviation for the fifteen profit warning announcement events for the various companies. For all the fifteen events, the standard error for the sample mean for the abnormal return (AR) is relatively small meaning that they adequately represent the population mean.

Table 4. 2: T- test on Abnormal Returns

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Abnormal Return (EABL)	.071	10	.945	.000	-.01	.01
Abnormal Return (Kenya Airways)	1.221	10	.250	.011	-.01	.03
Abnormal Return (CMC)	-.361	10	.725	-.003	-.02	.02
Abnormal Return (Total)	-.843	10	.419	-.010	-.04	.02
Abnormal Return (Sameer)	-.100	10	.922	.000	-.01	.01
Abnormal Return (Sasini)	.213	10	.835	.001	-.01	.01
Abnormal Return (Access)	2.687	10	.023	.018	.00	.03
Abnormal Return (Eveready)	.077	10	.940	.002	-.05	.06
Abnormal Return (EA Cables)	-.136	10	.894	-.002	-.03	.03
Abnormal Return (Kakuzi)	-.698	10	.501	-.008	-.03	.02
Abnormal Return (CFC Stanbic)	.234	10	.819	.002	-.01	.02
Abnormal Return (Uchumi)	-1.980	10	.076	-.020	-.04	.00
Abnormal Return (Mumias)	-.400	10	.698	-.004	-.03	.02
Abnormal Return (NBK)	.191	10	.852	.003	-.04	.04
Abnormal Return (Longhorn)	1.442	10	.180	.011	-.01	.03

This output gives the t-test value, the degrees of freedom and the two-tailed significance. The P value for, Access is less than 0.05 and thus the null hypothesis is rejected. The findings establish that at 5% level of significance, that event - day abnormal returns (AR) are statistically significant for the profit warning announcement.

For EABL, Kenya airways, Total, Sameer, Sasisni, Mumias, EA cables, Kakuzi, NBK, Uchumi Longhorn, CMC and CFC Stanbic, P values for abnormal returns are all greater than 0.05 thus the null hypothesis is rejected suggesting that at 5% level of significance,

that event - day abnormal returns (AR) were not statistically significant for the profit warning announcement.

4.3.2 Test of Significance on Cumulative Abnormal Returns

Table 4. 3: Descriptive Statistics for Cumulative Abnormal Returns

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Cumulative Abnormal returns (EABL)	11	.00	.027	.008
Cumulative Abnormal returns (Kenya Airways)	11	.02	.034	.010
Cumulative Abnormal returns (CMC)	11	-.01	.036	.011
Cumulative Abnormal returns (Total)	11	-.01	.044	.013
Cumulative Abnormal returns (Sameer)	11	.00	.023	.007
Cumulative Abnormal returns (sasini)	11	.00	.023	.007
Cumulative Abnormal returns (Access)	11	.04	.025	.008
Cumulative Abnormal returns (Eveready)	11	.00	.114	.034
Cumulative Abnormal returns (EA Cables)	11	.00	.054	.016
Cumulative Abnormal returns (Kakuzi)	11	-.01	.042	.013
Cumulative Abnormal returns (CFC Stanbic)	11	.00	.023	.007
Cumulative Abnormal returns (Uchumi)	11	-.03	.053	.016
Cumulative Abnormal returns (Mumias)	11	-.01	.043	.013
Cumulative Abnormal returns (NBK)	11	.01	.087	.026
Cumulative Abnormal returns (Longhorn)	11	.02	.028	.008

The descriptive statistics for the variables is presented as number of observations (N), the mean and the standard deviation for the fifteen profit warning announcement events for the various companies. For all the fifteen events, the standard error for the sample mean

for the cumulative abnormal return (CAR) is relatively small suggesting that they adequately represent the population mean.

Table 4. 4: T – test on Cumulative Abnormal Returns

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cumulative Abnormal returns (EABL)	.399	10	.698	.003	-.01	.02
Cumulative Abnormal returns (Kenya Airways)	1.819	10	.099	.019	.00	.04
Cumulative Abnormal returns (CMC)	-.506	10	.624	-.006	-.03	.02
Cumulative Abnormal returns (Total)	-.761	10	.464	-.010	-.04	.02
Cumulative Abnormal returns (Sameer)	-.025	10	.981	.000	-.02	.02
Cumulative Abnormal returns (sasini)	.396	10	.700	.003	-.01	.02
Cumulative Abnormal returns (Access)	4.833	10	.001	.037	.02	.05
Cumulative Abnormal returns (Eveready)	.065	10	.949	.002	-.07	.08
Cumulative Abnormal returns (EA Cables)	-.259	10	.801	-.004	-.04	.03
Cumulative Abnormal returns (Kakuzi)	-1.024	10	.330	-.013	-.04	.02
Cumulative Abnormal returns (CFC Stanbic)	.568	10	.582	.004	-.01	.02
Cumulative Abnormal returns (Uchumi)	-2.178	10	.054	-.035	-.07	.00
Cumulative Abnormal returns (Mumias)	-.719	10	.489	-.009	-.04	.02
Cumulative Abnormal returns (NBK)	.312	10	.761	.008	-.05	.07
Cumulative Abnormal returns (Longhorn)	2.663	10	.024	.022	.00	.04

From table 4.4 above, the p values for Longhorn and Access cumulative abnormal returns are all less than 0.05, thus the null hypothesis is rejected as the individual stock returns

for these companies deviated significantly from their means on profit warning announcement.

However, for EABL, Total, Sameer , Sasini, EA cables, mumias, Kakuzi, NBK, Uchumi, CFC Stanbic, Mumias, CMC and Kenya airways, the p values for cumulative abnormal returns are more than 0.05, thus the null hypothesis is not rejected as the individual returns for these companies did not deviate significantly from their means on profit warning announcement.

4.3.3 Test of Significance on Standardized Cumulative Abnormal Returns

Table 4. 5: Descriptive Statistics for Standardized Cumulative Abnormal Returns

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Standardized Cumulative abnormal returns (EABL)	11	.12	.987	.298
Standardized Cumulative abnormal returns (Kenya Airways)	11	.70	1.275	.385
Standardized Cumulative abnormal returns (CMC)	11	-.13	.832	.251
Standardized Cumulative abnormal returns (Total)	11	-.31	1.334	.402
Standardized Cumulative abnormal returns (Sameer)	11	.00	.355	.107
Standardized Cumulative abnormal returns (Sasini)	11	.03	.235	.071
Standardized Cumulative abnormal returns (Access)	11	1.24	.852	.257
Standardized Cumulative abnormal returns (Eveready)	11	.03	1.304	.393
Standardized Cumulative abnormal returns (EA Cables)	11	.00	.053	.016
Standardized Cumulative abnormal returns (Kakuzi0	11	-.41	1.316	.397
Standardized Cumulative abnormal returns (CFC Stanbic)	11	.13	.737	.222
Standardized Cumulative abnormal returns (Uchumi)	11	-.54	.818	.246
Standardized Cumulative abnormal returns (Mumias)	11	-.23	1.069	.322
Standardized Cumulative abnormal returns (NBK)	11	.15	1.602	.483
Standardized Cumulative abnormal returns (Longhorn)	11	.52	.645	.195

As presented in table 4.5 above, the standard error for the sample mean for the standardized cumulative abnormal return (SCAR) for all the fifteen profit warning announcement events are all relatively small suggesting that they all adequately represent the population mean.

Table 4. 6: T – test on Cumulative Abnormal Returns

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Standardized Cumulative abnormal returns (EABL)	.399	10	.698	.119	-.54	.78
Standardized Cumulative abnormal returns (Kenya Airways)	1.819	10	.099	.699	-.16	1.56
Standardized Cumulative abnormal returns (CMC)	-.506	10	.624	-.127	-.69	.43
Standardized Cumulative abnormal returns (Total)	-.761	10	.464	-.306	-1.20	.59
Standardized Cumulative abnormal returns (Sameer)	-.025	10	.981	-.003	-.24	.24
Standardized Cumulative abnormal returns (Sasini)	.396	10	.700	.028	-.13	.19
Standardized Cumulative abnormal returns (Access)	4.833	10	.001	1.242	.67	1.81
Standardized Cumulative abnormal returns (Eveready)	.065	10	.949	.026	-.85	.90
Standardized Cumulative abnormal returns (EA Cables)	-.259	10	.801	-.004	-.04	.03
Standardized Cumulative abnormal returns (Kakuzi0	-1.024	10	.330	-.406	-1.29	.48
Standardized Cumulative abnormal returns (CFC Stanbic)	.568	10	.582	.126	-.37	.62
Standardized Cumulative abnormal returns (Uchumi)	-2.178	10	.054	-.537	-1.09	.01
Standardized Cumulative abnormal returns (Mumias)	-.719	10	.489	-.232	-.95	.49
Standardized Cumulative abnormal returns (NBK)	.312	10	.761	.151	-.93	1.23
Standardized Cumulative abnormal returns (Longhorn)	2.663	10	.024	.518	.08	.95

From table 4.6 above, the p values for the profit warning announcements for Longhorn and Access are all less than 0.05 suggesting that the stock returns for these companies deviated significantly from their means on profit warning announcement. Thus the null

hypothesis is rejected. The table further indicates that p values for CFC Stanbic, Uchumi, Mumias, Kenya airways, CMC, National Bank of Kenya, Kakuzi, East African cables, Sassini, Sameer, Total and EABL profit warning announcements are all greater than 0.05 infering that the stock returns for these companies did not deviate significantly from their means on profit warning announcement. In light of this finding, the null hypothesis is not rejected.

From the analysis therefore, abnormal returns for one out of fifteen companies (6.67%) are established to have deviated on account of the profit warning announcement. Cumulative abnormal returns and standardized cumulative abnormal returns for two out of fifteen companies (13.33%) are established to have deviated on account of the profit warning announcement.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the summary of the findings of the study in chapter four. The conclusion and recommendations drawn from these findings are also discussed herein in relation to the objectives of the study.

5.2 Summary of Findings

This study sough to establish the effects of profit warnings on stock returns at the Nairobi Securities Exchange. The study generally establishes that the actual returns, abnormal returns, market returns, expected returns, cumulative returns and cumulative abnormal returns generally have the same trend on profit warning announcements except for certain instances where cumulative actual return deviates as a result of the information content of the event. The standardized cumulative abnormal returns swing around the trend in all cases with sharp declines on the profit warning announcement day and an increase thereafter. The reactions of the returns are also influenced by the information content of the profit warning announcement.

On the event window of eleven days, the expected returns and the actual returns seldom have the same movement pattern. In most instances, they move in the opposite direction and then they converge after the event. This finding shows that actual returns follow a random walk which is distinct from the expectations.

The study establishes that the standard errors of the abnormal returns, cumulative abnormal and standardized cumulative abnormal returns on profit warning announcements are all minimal suggesting that they are representative of the respective population. From the abnormal returns, the returns of a paltry one out of fifteen (6.7%) companies issuing profit warnings deviate from the mean thereby suggesting that though there is information content in profit warnings announcements, the effect is not on all the issuing companies. With the Cumulative abnormal returns and standardized cumulative abnormal returns, returns of two out of fifteen (13.3%) companies issuing profit warnings deviate from the mean thereby confirming that though there is information content on profit warning announcement events, the effect is not universal on all the companies.

The standard error for the sample mean for the standardized cumulative abnormal return (SCAR) for all the fifteen profit warning announcement events are all relatively small suggesting that they all adequately represent the population mean.

5.3 Conclusions and Recommendations

The study concludes that the significance of returns reaction to the profit warning announcements at the NSE is dependent on the company issuing the announcement. Generally, the actual returns, abnormal returns, market returns, expected returns, cumulative returns and cumulative abnormal returns generally have the same trend on profit warning announcements except for instances where cumulative actual return deviates. The standardized cumulative abnormal returns swing around the trend with sharp declines on the profit warning announcement day and an increase thereafter.

Since 6.7 percent and 13.3 percent of issuing companies abnormal returns and cumulative abnormal returns respectively deviate as a result of the profit warning announcement, it is understood that there may be instances of prior market expectations of the profit warnings announcements which does not affect investor expectations and sentiments in the stock market. This prior information to the market should be avoided to make the markets effective.

This study suggests that there is a weak form of market efficiency, as supported by the significant negative abnormal returns after the announcements. The findings are useful to researchers, practitioners and investors with an interest in the strategic decision-making of firms listed on the NSE. It is observed that once returns are on a down-slide, they do not seem to recover quickly.

It is recommended that firms operating or considering operating in the Nairobi securities exchange should be aware that a profit warning has a significant impact on the stock returns especially during the period prior to and after the actual announcement. The study finds evidence of inefficient adjustment of stock prices to information contained in profit warning announcement for the sample of firms in the study as prices continued to drift days after the announcement date.

Also regulatory authorities should intensify efforts to ensure compliance to insider trading laws by market participants. The authorities need to strengthen their capacity to effectively monitor activities in the market and to effectively deal with insider tradings.

Before the anticipated event, there is evidence consistent with the existence of informed trading that is recognized and addressed by the market maker. A result worth highlighting

is the finding that information processing in financial markets is affected by whether the timing of a news release is known in advance.

5.4 Limitations of the Study

The stock market performance and subsequently returns during the profit warnings announcements have been affected by other market anomalies such as Weekend effect, Monday effect, Holiday effect or Investor behavioural biases.

Macroeconomic indicators like inflation, interest rates and currency depreciation might also control the effect of these events. Unfortunately, these control factors could not be isolated in the study as it is considered difficult to do so.

The study findings are as accurate as the data used and event analysis. This research has not been able to establish the accuracy of the data used beyond the authenticity of the source. This means it cannot be inferred whether the records are accurate and if so, to what extent.

There are chances that profit warning announcements are infiltrated with insider information. This has an effect on the abnormal returns which should further investigated. The extent of insider information on the market depends on corporate governance practices and rules and regulations at the capital markets.

The drivers of return are weakly driven by the firm specific factors such as firm size, profitability ratio, dividend yield, book to market ratio and cash flow ratio.

5.5 Suggestions for Further Research

The study suggests that advanced event study methodologies should be incorporated such as the filtered GARCH-EVT approach and the non-parametric methodology to analyze the effect of profit warnings announcements on the stock market performance regarding stock prices and returns. GARCH-EVT approach enables one to study the event-day effect only, though it is computationally intensive. The study recommends that a similar study can be done on the information content of other forms of corporate announcements.

There should be studies on the other factors that explain abnormal returns arising from profit warning announcements if any. These returns may be explained also by other macroeconomic attributes or market microstructure.

Other than profit warning announcements, there are various other corporate announcements like CEO exit, CEO appointment, dividend announcements, stock splits announcements, rights issue and financial reports which should further be modeled on event studies using advanced approaches.

Further studies should consider the information content of government spending or intended budgetary allocation of returns and prices of companies whose sectors of business are government priority like the stimulus package. This should also apply to government target taxation plans like capital gains tax or sin taxes.

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APPENDIX I

LIST OF COMPANIES AND DATES OF PROFIT WARNING ANNOUNCEMENT

	COMPANY	**DATE**
1	EAST AFRICAN BREWERIES LIMITED	30th JULY 2013
2	NATIONAL BANK OF KENYA	22nd MARCH 2013
3	MUMIAS SUGAR COMPANY	22nd FEBRUARY 2013
4	KAKUZI LIMITED	30th NOVEMBER 2012
5	KENYA AIRWAYS	6th NOVEMBER 2012
6	SASINI LIMITED	2nd AUGUST 2012
7	ACCESS KENYA GROUP LIMITED	12th JULY 2012
8	TOTAL KENYA LIMITED	29th JUNE 2012
9	SAMEER AFRICA LIMITED	29th JUNE 2012
10	LONG HORN KENYA LIMITED	29th JUNE 2012
11	CMC HOLDINGS LIMITED	7th OCTOBER 2011
12	EVEREADY EAST AFRICA	30th NOVEMBER 2010
13	EAST AFRICAN CABLES	14th JULY 2010
14	CFC STANBIC BANK	31st JANUARY 2006
15	UCHUMI SUPERMARKET	25th AUGUST 2005

APPENDIX II: SAMPLES OF RETURNS ON PRICE WARNINGS ANNOUNCEMENT FOR FIVE COMPANIES

CFC STANBIC

Days	Actual Return	Cumulative Actual Return	NSE returns	Expected returns	Abnormal Return	Cumulative Abnormal returns	Standardized Cumulative abnormal returns
-18	0.022222	0.049429	0.000769819	-0.000144393	0.022366393	0.063876609	2.003697207
-17	0	0.049429	0.004004926	-0.000751195	0.000751195	0.023117588	0.725158208
-16	-0.00316	0.046265	0.010852958	-0.002035665	-0.001124335	-0.000373139	-0.011704729
-15	0.019355	0.06562	-0.000553831	0.000103881	0.019251119	0.018126785	0.568605449
-14	0	0.06562	0.007194467	-0.00134945	0.00134945	0.02060057	0.646203743
-13	-0.00333	0.062286	0.005763485	-0.001081044	-0.002248956	-0.000899505	-0.028215907
-12	-0.00336	0.058931	0.003698663	0	-0.00336	-0.005608956	-0.175943105
-11	0.027397	0.086328	0.008834718	-0.001657109	0.029054109	0.025694109	0.805979128
-10	0	0.086328	0.006819239	-0.00127907	0.00127907	0.030333178	0.951498608
-9	0.006329	0.092657	0.002769425	-0.000519455	0.006848455	0.008127525	0.254946195
-8	0	0.092657	-0.003009337	0.000564455	-0.000564455	0.006284	0.197118069
-7	-0.02	0.072657	-0.001513799	0.00028394	-0.02028394	-0.020848395	-0.653977579
-6	0.003356	0.076013	-0.001022112	0.000191715	0.003164285	-0.017119655	-0.537013561
-5	0	0.076013	-0.002410369	0.000452108	-0.000452108	0.002712177	0.085076241
-4	0.026846	0.102858	0.003003225	-0.000563308	0.027409308	0.026957201	0.845600113
-3	-0.00987	0.09299	-0.00889279	0.001668001	-0.011538001	0.015871307	0.497855078
-2	0.036913	0.129903	0.003446551	-0.000646462	0.037559462	0.026021461	0.8162476
-1	-0.02581	0.104096	-0.000839395	0.000157443	-0.025967443	0.011592019	0.363621295

0	-0.02581	0.07829	0.000432864	-8.11913E-05	-0.025728809	-0.051696252	-1.621620774
1	0	0.07829	-0.00111625	0.000209373	-0.000209373	-0.025938181	-0.813635262
2	0.02	0.09829	-0.001911971	0.000358624	0.019641376	0.019432003	0.609547865
3	-0.01645	0.081842	0.001073262	-0.000201309	-0.016248691	0.003392685	0.106422584
4	0.020134	0.101977	-0.001748764	0.000328012	0.019805988	0.003557298	0.111586187
5	-0.00658	0.095398	-0.00446067	0.000836678	-0.007416678	0.01238931	0.388630935
6	-0.00662	0.088775	-0.001458186	0.000273509	-0.006893509	-0.014310187	-0.448885466
7	-0.02667	0.062109	-0.003032286	0.000568759	-0.027238759	-0.034132268	-1.070669391
8	-0.04667	0.015442	-0.00462112	0.000866773	-0.047536773	-0.074775532	-2.345577329
9	-0.05667	-0.04122	0.000253363	-4.75228E-05	-0.056622477	-0.104159251	-3.267293038
10	-0.00699	-0.04822	-0.002880823	0.00054035	-0.00753035	-0.064152827	-2.012361682
11	0.028169	-0.02005	-0.000287775	5.39774E-05	0.028115023	0.020584673	0.645705094
12	-0.0034	-0.02345	0.000931421	-0.000174705	-0.003225295	0.024889727	0.780747097
13	-0.02685	-0.0503	-0.005149114	0.000965808	-0.027815808	-0.031041103	-0.973704979
14	0.014483	-0.03581	0.00551511	-0.001034457	0.015517457	-0.012298351	-0.385777705
15	-0.01724	-0.05305	-0.006021085	0.001129362	-0.018369362	-0.002851905	-0.089459248
16	-0.00704	-0.0601	-0.000127893	2.39887E-05	-0.007063989	-0.02543335	-0.797799599
17	0.007143	-0.05295	0.000215263	-4.03765E-05	0.007183376	0.000119388	0.003744986
18	-0.03214	-0.0851	-0.001623203	0.000304461	-0.032444461	-0.025261084	-0.792395913
19	0.011029	-0.07407	-0.003056942	0.000573384	0.010455616	-0.021988845	-0.689751495
20	-0.01449	-0.08856	0.00160324	-0.000300716	-0.014189284	-0.003733668	-0.117118607

UCHUMI

DAYS	Actual Return	Cummulative Actual Return	NSE returns	Expected returns	Abnormal Return	Cumulative Abnormal returns	Standardized Cumulative abnormal returns
-18	0.004732	-0.02494	0.001029633	0.0001600194	0.0045719806	-0.0201265200	-0.310269614
-17	0.003145	-0.0218	0.007686711	0.0011946224	0.0019503776	0.0065223581	0.100548408
-16	-0.0047	-0.0265	0.003470476	0.0005393605	-0.0052393605	-0.0032889829	-0.050702827
-15	-0.00625	-0.03275	0.000878264	0.0001364945	-0.0063864945	-0.0116258550	-0.179223708
-14	0.001562	-0.03119	0.003899143	0.0006059813	0.0009560187	-0.0054304758	-0.083715994
-13	0	-0.03119	0.002466697	0.0003833592	-0.0003833592	0.0005726594	0.008828095
-12	0.007813	-0.02337	-0.000596068	0.0000000000	0.0078130000	0.0074296408	0.11453504
-11	0.017187	-0.00619	-0.007164475	-0.0011134596	0.0183004596	0.0261134596	0.402564031
-10	0.03096	0.024774	0.001740123	0.0002704395	0.0306895605	0.0489900201	0.755228157
-9	-0.01515	0.009622	-0.005709386	-0.0008873185	-0.0142626815	0.0164268790	0.253236098
-8	0.099688	0.109311	0.000971982	0.0001510596	0.0995369404	0.0852742589	1.314584507
-7	0.09915	0.208461	0.004830292	0.0007506950	0.0983993050	0.1979362454	3.05137711
-6	0.034794	0.243255	0.003072562	0.0004775191	0.0343164809	0.1327157859	2.045941158
-5	0.029762	0.273016	-0.000721322	-0.0001121036	0.0298741036	0.0641905845	0.98955944
-4	0	0.273016	0.000509246	0.0000791439	-0.0000791439	0.0297949597	0.459317887
-3	-0.03448	0.238534	-0.003184871	-0.0004949735	-0.0339850265	-0.0340641704	-0.525131866
-2	-0.00476	0.233772	-0.002287842	-0.0003555626	-0.0044044374	-0.0383894639	-0.591810415
-1	-0.01253	0.221241	-0.00180118	-0.0002799285	-0.0122500715	-0.0166545089	-0.256745232
0	-0.05526	0.165977	-0.006301815	-0.0009793902	-0.0542806098	-0.0665306813	-1.025634277
1	-0.00279	0.163192	-0.003055676	-0.0004748948	-0.0023151052	-0.0565957150	-0.872477241
2	-0.0571	0.106089	-0.007695265	-0.0011959517	-0.0559040483	-0.0582191535	-0.897504103
3	-0.08129	0.0248	-0.002552067	-0.0003966269	-0.0808933731	-0.1367974214	-2.108863485
4	0.019737	0.044537	-0.000243676	-0.0000378706	0.0197748706	-0.0611185025	-0.942200349

5	-0.02903	0.015505	-0.003704268	-0.0005756950	-0.0284543050	-0.0086794343	-0.133801807
6	-0.01163	0.003877	-0.01006088	-0.0015636015	-0.0100663985	-0.0385207035	-0.593833599
7	-0.00671	-0.00283	0.000321781	0.0000500093	-0.0067600093	-0.0168264078	-0.259395218
8	-0.01342	-0.01626	-0.002689224	-0.0004179429	-0.0130020571	-0.0197620663	-0.304651211
9	-0.0453	-0.06156	-0.007612059	-0.0011830203	-0.0441169797	-0.0571190367	-0.880544747
10	0	-0.06156	0.0000104006	0.0000016164	-0.0000016164	-0.0441185961	-0.680130483
11	-0.09483	-0.15639	0.000312015	0.0000484915	-0.0948784915	-0.0948801079	-1.462667885
12	-0.03817	-0.19455	-0.003527268	-0.0005481868	-0.0376218132	-0.1325003047	-2.042619309
13	-0.06	-0.25455	-0.007116027	-0.0011059301	-0.0588940699	-0.0965158831	-1.48788493
14	0	-0.25455	-0.005312218	-0.0008255929	0.0008255929	-0.0580684770	-0.89518128
15	0	-0.25455	0.00883759	0.0013734851	-0.0013734851	-0.0005478922	-0.008446284
16	-0.01965	-0.27421	-0.004631424	-0.0007197880	-0.0189302120	-0.0203036971	-0.313000969
17	-0.06352	-0.33773	-0.002703933	-0.0004202289	-0.0630997711	-0.0820299831	-1.264570883
18	-0.00901	-0.34674	-0.002595217	-0.0004033331	-0.0086066669	-0.0717064380	-1.105423532
19	0	-0.34674	-0.000190388	-0.0000295890	0.0000295890	-0.0085770780	-0.132223885
20	0.031818	-0.31492	0.004419431	0.0006868413	0.0311311587	0.0311607476	0.480372818

MUMIAS

DAYS	Actual Return	Cumulative Actual Return	NSE returns	Expected returns	Abnormal Return	Cumulative Abnormal returns	Standardized Cumulative abnormal returns
-18	0.00495	-0.04648	-0.000143072	-8.04237E-05	0.005030424	0.021992461	0.545051733
-17	0.00495	-0.04153	0.002239509	0.001258874	0.003691126	0.008721549	0.21615114
-16	-0.00495	-0.04648	0.000904227	0.000508284	-0.005458284	-0.001767159	-0.043796504
-15	-0.00495	-0.05143	0.000948694	0.00053328	-0.00548328	-0.010941565	-0.271171045
-14	0	-0.05143	0.006783855	0.003813345	-0.003813345	-0.009296625	-0.23040356
-13	0	-0.05143	0.007378482	0.004147596	-0.004147596	-0.007960941	-0.197300546
-12	-0.005	-0.05643	0.008678256	0	-0.005	-0.009147596	-0.226710106
-11	0.005051	-0.05138	0.008541679	0.004801453	0.000249547	-0.004750453	-0.1177332
-10	0.005	-0.04638	0.00597655	0.003359542	0.001640458	0.001890005	0.046841076
-9	0	-0.04638	0.004927622	0.002769918	-0.002769918	-0.001129459	-0.027992032
-8	0	-0.04638	0.00486876	0.00273683	-0.00273683	-0.005506748	-0.13647688
-7	0	-0.04638	0.003153138	0.001772443	-0.001772443	-0.004509274	-0.111755906
-6	0.005051	-0.04133	-0.00226975	-0.001275873	0.006326873	0.004554429	0.112875025
-5	0.005051	-0.03628	-0.004914243	-0.002762397	0.007813397	0.01414027	0.350446389
-4	-0.005	-0.04128	-0.008856384	-0.004978356	-2.16443E-05	0.007791753	0.193107462
-3	0.005051	-0.03623	-0.0049892	-0.002804532	0.007855532	0.007833887	0.194151704
-2	-0.0303	-0.06653	-0.010615109	-0.005966971	-0.024333029	-0.016477497	-0.408371224
-1	-0.01563	-0.08215	0.000630726	0.000354544	-0.015984544	-0.040317573	-0.999213431
0	-0.01053	-0.09268	-0.006147918	-0.003455871	-0.007074129	-0.023058673	-0.571476251
1	0.037634	-0.05505	-0.003180069	-0.001787582	0.039421582	0.032347454	0.801685418
2	0.005263	-0.04978	0.001241137	0.000697668	0.004565332	0.043986914	1.090152808
3	0.031915	-0.01787	0.009925736	0.00557946	0.02633554	0.030900871	0.765833943
4	-0.09897	-0.11684	0.001116638	0.000627685	-0.099597685	-0.073262145	-1.815697589
5	0.011905	-0.10493	-0.001797021	-0.001010142	0.012915142	-0.086682543	-2.148302965

6	0.059524	-0.04541	0.005176844	0.00291001	0.05661399	0.069529132	1.723180186
7	-0.02198	-0.06739	0.002869545	0.00161303	-0.02359303	0.033020959	0.818377296
8	0.044944	-0.02244	0.008410255	0.004727577	0.040216423	0.016623393	0.411987033
9	0.044444	0.022001	0.016045557	0.009019537	0.035424463	0.075640886	1.874651271
10	-0.00521	0.016793	0.029555836	0.016613943	-0.021823943	0.01360052	0.337069453
11	-0.00521	0.011585	0.039526054	0.022218408	-0.027428408	-0.04925235	-1.220649133
12	-0.00526	0.006321	-0.014934084	-0.008394756	0.003134756	-0.024293652	-0.602083449
13	-0.00532	0.001002	-0.016207026	-0.009110303	0.003790303	0.006925058	0.171627678
14	0.016304	0.017307	-0.011947805	-0.006716107	0.023020107	0.026810409	0.664457686
15	0.091398	0.108705	-0.009861503	-0.005543354	0.096941354	0.11996146	2.973073386
16	0.016304	0.125009	-0.001229099	-0.000690902	0.016994902	0.113936255	2.823747295
17	0.005435	0.130444	-0.000461744	-0.000259556	0.005694556	0.022689458	0.562325788
18	0	0.130444	-0.002222905	-0.001249541	0.001249541	0.006944096	0.172099508
19	0.016854	0.147298	0.001070391	0.000601689	0.016252311	0.017501852	0.433758391
20	-0.00556	0.141742	0.004071198	0.002288504	-0.007848504	0.008403807	0.20827635

LONGHORN

DAYS	Actual Return	Cummulative Actual Return	NSE returns	Expected returns	Abnormal Return	Cumulative Abnormal returns	Standardized Cumulative abnormal returns
-18	0.086957	0.220274	-0.004771042	-0.000429591	0.087386591	0.186397413	4.34364207
-17	0	0.220274	-0.00028604	-2.57554E-05	2.57554E-05	0.087412346	2.036980764
-16	0.041096	0.26137	0.004525671	0.000407497	0.040688503	0.040714258	0.948769414
-15	0.025641	0.287011	-0.003234491	-0.000291238	0.025932238	0.06662074	1.552471392
-14	0.055556	0.342567	0.004822144	0.000434192	0.055121808	0.081054046	1.888812496
-13	0.019481	0.362047	0.003601303	0.000324266	0.019156734	0.074278542	1.73092209
-12	0.012658	0.374706	0.000155306	0	0.012658	0.031814734	0.741382699
-11	-0.00625	0.368456	0.003980113	0.000358375	-0.006608375	0.006049625	0.140975173
-10	-0.0201	0.348355	0.002406821	0.000216713	-0.020316713	-0.026925088	-0.627438667
-9	0.025641	0.373996	-0.003248309	-0.000292482	0.025933482	0.005616769	0.130888259
-8	-0.025	0.348996	-0.005192506	-0.00046754	-0.02453246	0.001401022	0.032648188
-7	0	0.348996	0.008582871	0.000772813	-0.000772813	-0.025305273	-0.589691918
-6	0	0.348996	-0.003331935	-0.000300012	0.000300012	-0.000472801	-0.011017743
-5	-0.02564	0.323355	0.006099548	0.000549211	-0.026189211	-0.0258892	-0.603299233
-4	0.060172	0.383527	0.005627986	0.000506751	0.059665249	0.033476038	0.780096262
-3	0.002571	0.386098	0.003382051	0.000304524	0.002266476	0.061931725	1.443202671
-2	0.023684	0.409782	0.000227385	2.04741E-05	0.023663526	0.025930002	0.60425005
-1	0.025641	0.435423	-0.007798877	-0.000702221	0.026343221	0.050006747	1.165313437
0	-0.02564	0.409782	-0.001590365	-0.000143199	-0.025496801	0.00084642	0.019724221
1	0.027027	0.436809	0.016190867	0.001457847	0.025569153	7.23518E-05	0.001686022
2	0.019284	0.456093	0.006950219	0.000625807	0.018658193	0.044227346	1.030635348
3	0.025815	0.481908	0.000453817	4.08623E-05	0.025774138	0.044432331	1.035412127
4	-0.00804	0.473865	0.000930959	8.38247E-05	-0.008123825	0.017650313	0.411307435

5	0	0.473865	-0.000526965	-4.74486E-05	4.74486E-05	-0.008076376	-0.188204797
6	0.005464	0.479329	-0.000595784	-5.36452E-05	0.005517645	0.005565094	0.129684072
7	0.001359	0.480688	-0.000456337	-4.10892E-05	0.001400089	0.006917734	0.161204823
8	-0.00136	0.479333	0.002129664	0.000191758	-0.001551758	-0.000151669	-0.003534352
9	-0.00813	0.471203	0.00146416	0.000131835	-0.008261835	-0.009813593	-0.228687367
10	0	0.471203	-0.003765488	-0.000339049	0.000339049	-0.007922785	-0.184625653
11	0	0.471203	0.001705097	0.000153529	-0.000153529	0.00018552	0.004323202
12	0	0.471203	-0.00447946	-0.000403336	0.000403336	0.000249807	0.00582129
13	0	0.471203	0.002758	0.000248334	-0.000248334	0.000155003	0.003612043
14	-0.00273	0.468471	0.009874568	0.000889119	-0.003619119	-0.003867453	-0.090123736
15	0	0.468471	0.003771632	0.000339603	-0.000339603	-0.003958722	-0.092250583
16	0.02459	0.493061	0.001106667	9.96457E-05	0.024490354	0.024150752	0.562787965
17	0.006831	0.499892	0.000343338	3.09146E-05	0.006800085	0.03129044	0.729165003
18	0.089918	0.58981	0.008466093	0.000762298	0.089155702	0.095955787	2.236069635
19	-0.00136	0.588447	0.00000773	6.96467E-07	-0.001360696	0.087795006	2.045897921
20	0.065574	0.654021	-0.002065221	-0.000185955	0.065759955	0.064399259	1.500703927

KAKUZI

DAYS	Actual Return	Cumulative Actual Return	NSE returns	Expected returns	Abnormal Return	Cumulative Abnormal returns	Standardized Cumulative abnormal returns
-18	0	0.028373	-0.000293281	-2.73829E-05	2.73829E-05	0.007141705	0.221854225
-17	0.007042	0.035415	-0.000824336	-7.69662E-05	0.007118966	0.007146349	0.221998477
-16	0	0.035415	0.006711751	0.000626659	-0.000626659	0.006492307	0.201680914
-15	0.007143	0.042558	0.002636913	0.000246202	0.006896798	0.006270139	0.194779346
-14	0.014286	0.056844	-0.00183185	-0.000171035	0.014457035	0.021353833	0.663348289
-13	-0.00704	0.049802	0.001143997	0.000106812	-0.007146812	0.007310223	0.227089158
-12	0	0.049802	0.000175613	0	0	-0.007146812	-0.22201286
-11	0	0.049802	0.000697519	6.51256E-05	-6.51256E-05	-6.51256E-05	-0.002023102
-10	-0.00704	0.042759	-0.001081603	-0.000100987	-0.006939013	-0.007004139	-0.217580779
-9	0.021429	0.064188	-0.001936963	-0.000180849	0.021609849	0.014670836	0.455743654
-8	0	0.064188	0.002516912	0.000234998	-0.000234998	0.021374852	0.664001218
-7	-0.00704	0.057146	0.003244052	0.000302889	-0.007342889	-0.007577887	-0.235404023
-6	0.007143	0.064289	-0.002176482	-0.000203213	0.007346213	3.32368E-06	0.000103249
-5	0	0.064289	0.00090324	8.43333E-05	-8.43333E-05	0.007261879	0.225587379
-4	0	0.064289	-0.000633618	-5.91593E-05	5.91593E-05	-2.5174E-05	-0.00078202
-3	0.014286	0.078574	-0.005977555	-0.000558109	0.014844109	0.014903269	0.462964081
-2	0.007143	0.085717	-0.002512672	-0.000234602	0.007377602	0.022221711	0.690308574
-1	0	0.085717	-0.004044935	-0.000377665	0.000377665	0.007755267	0.24091428
0	-0.02857	0.057146	-0.006906749	-0.000644866	-0.027925134	-0.027547469	-0.855751097
1	0.014706	0.071852	-0.005003037	-0.000467121	0.015173121	-0.012752013	-0.396136187
2	0.014085	0.085936	-0.001644069	-0.000153503	0.014238503	0.029411624	0.913660326
3	-0.10759	-0.02166	0.000241593	2.25569E-05	-0.107612557	-0.093374054	-2.900627658
4	0.014706	-0.00695	-0.008564619	-0.000799657	0.015505657	-0.0921069	-2.861264011

5	-0.01471	-0.02166	0.003815902	0.000356281	-0.015066281	0.000439376	0.013649035
6	0.014706	-0.00695	-0.006423988	-0.000599792	0.015305792	0.00023951	0.007440297
7	-0.02143	-0.02838	0.004902731	0.000457756	-0.021887756	-0.006581964	-0.204466079
8	-0.03571	-0.0641	-0.000004961	-4.63165E-07	-0.035709537	-0.057597293	-1.78923686
9	0.018519	-0.04558	0.00607188	0.000566916	0.017952084	-0.017757453	-0.55162818
10	0.003704	-0.04187	0.002719307	0.000253895	0.003450105	0.021402189	0.664850436
11	0.02963	-0.01224	0.004546114	0.000424459	0.029205541	0.032655646	1.014434578
12	0.021739	0.009495	0.009388844	0.000876613	0.020862387	0.050067928	1.555340156
13	0.007246	0.016741	0.000858377	8.01446E-05	0.007165855	0.028028243	0.870686147
14	0.007246	0.023988	-0.002059308	-0.000192272	0.007438272	0.014604128	0.453671393
15	0.021739	0.045727	-0.002384016	-0.00022259	0.02196159	0.029399862	0.913294958
16	0	0.045727	0.003275513	0.000305826	-0.000305826	0.021655763	0.672727622
17	0.007246	0.052973	-0.00012613	-1.17764E-05	0.007257776	0.00695195	0.215959545
18	0.036232	0.089205	0.002619948	0.000244618	0.035987382	0.043245158	1.343393554
19	0.043478	0.132684	0.001792878	0.000167397	0.043310603	0.079297986	2.46336021
20	-0.0625	0.070184	0.004545422	0.000424395	-0.062924395	-0.019613791	-0.609294579