TEST FOR POST EARNINGS ANNOUNCEMENT DRIFT AT THE NAIROBI SECURITIES EXCHANGE
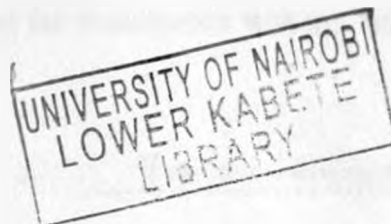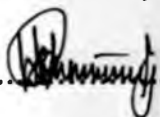
BY

WAMWEYA EDWARD KARIUNGU

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A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

NOVEMBER 2012

DECLARATION

This management research project is my original work and has not been presented in any other university for examination

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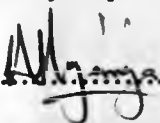
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This management research project has been submitted for examination with my approval as the university **Supervisor**

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Apart from my efforts, the success of any project depends largely on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this project.

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I am grateful to my MBA colleagues and friends especially for the companionship and creating a supportive environment that made the programme enjoyable and a platform for socialising and networking. Macharia Grace, & Carlo you were a treasure.

DEDICATION

I dedicate this to my loving parents Julius Wamweya and lovely Mercy Muthoni for their love, support, prayers, inspiration, and encouragement.

Secondly to my grandmother Grace Wangechi for her prayers and encouragement to pursue education to extents that she never reached.

Above of all to the Almighty God who gives me strength, ability and good health while pursuing my education endeavours.

ABSTRACT

This study was undertaken to test whether post earnings announcement drift exist at Nairobi Securities Exchange (NSE). It investigated abnormal stock returns due earning surprise after earnings announcements. The aim was to verify whether positive earnings surprise were followed by positive abnormal stock returns and equally whether negative earnings surprise was followed by negative abnormal stock returns during the event window of sixty days. The event study was conducted on thirty-eight sampled securities for companies listed and made earnings announcement over the period of three calendar years from January 2009 to December 2011. This study contributes to the body of empirical research focussed on the anomalies on the NSE.

An event study was conducted in which quantitative data was collected and analysed across the sampled companies and through the event study period. The study relied entirely on secondary data available at NSE database. Descriptive statistic, regression, and T-test were used to analyse data collected on daily stock prices and earnings per share. Ms Excel and SPSS were used in aiding the analysis of abnormal returns and earnings surprise.

From the data analysis results of the study revealed that firms that report good news in their earnings, they tend to have their stock returns move upwards in direction of the earnings surprise. For firms that report bad news their stock returns tend to move downwards for a period of at least 60 days from earnings announcement. This clearly shows post earnings announcement exist at NSE. Further research using better methods of earnings forecast and a longer period of study is needed to support this conclusion.

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LIST OF ABBREVIATIONS

AR   Abnormal Returns

AAR   Average Abnormal Returns

ACAR   Average Cumulative Abnormal Returns

ASUE   Average Standardised Unexpected Earnings

CAR   Cumulative Abnormal Returns

CMA   Capital Market Authority

CRSP   Centre for Research in Security Prices

EMH   Efficient Market Hypothesis

EPS   Earnings Per Share

LSE   London Stock Exchange

I/B/E/S   Institutional Brokers Estimate System

NASDAQ   National Association of Securities Dealers Automated Quotations

NSE   Nairobi Securities Exchange

NYSE   New York Stock Exchange

PEAD   Post Earnings Announcement Drift

SUE   Standardised Unexpected Earnings

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

One of the most puzzling market anomalies is the post-earnings-announcement drift (PEAD), where stock prices continue to move in the direction of the earnings surprise up to a year after the earnings are announced. Once a firm's current earnings become known, the information content should be quickly digested by investors and incorporated into the efficient market price. However, evidence show that this is not exactly what happens. For firms that report 'good news' in quarterly earnings, their abnormal security returns tend to drift upwards for at least 60 days following their earnings announcement. Similarly, firms that report 'bad news' in earnings tend to have their abnormal security returns drift downwards for a similar period. (Bernard and Thomas, 1989)

Ball and Brown (1968) were the first to note that even after earnings are announced, estimated cumulative abnormal returns (CAR) continue to drift up for "good news" firms and down for "bad news" firms. Thereafter a long series of studies confirming on the anomaly have been carried out such as Bernard & Thomas (1989) found out that abnormal returns around subsequent earnings announcement hence PEAD. Fama (1998), a paper that criticizes evidence of many market anomalies describes PEAD as an established anomaly that is "above suspicion." Brennan (1991) calls it a "most severe challenge to financial theorists." Motivated from the literature the study tested whether PEAD exist on the Nairobi Securities Exchange (NSE) by measuring earning surprise and abnormal returns associated with it following earnings announcement. Consistent with earlier studies like Bernard & Thomas (1989) the study focused on an event window of 60 days after earnings announcements.

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1.1.1 Post Earnings Announcement Drift

Fama (1969) asserted that at efficient market, prices should contain all the information available to the market and that once new information is available, it will be fully reflected in the adjustment of price. However, studies show the fact that after earnings announcement, abnormal returns of good news firms continues to drift up in positive direction meanwhile abnormal returns of bad news firms continue to drift in the opposite direction. Initially the prices react to information on a large scale, but this reaction does not end after the news, it continues to drift dependent on the direction of the news in months after. This phenomenon was named Post earnings announcement drift (Ball & Brown 1968). PEAD is the tendency for a stock's cumulative abnormal returns to drift in the direction of an earnings surprise for several weeks or even months following an earnings announcement. It is a form of market anomaly that has attracted many researchers in an effort to unlock the puzzle and explain market inefficiency since it was first realized in 1968. Kothari (2001) asserts that this phenomenon provides a serious challenge to the market efficiency hypothesis because it has survived rigorous verification over the last three decades, and cannot be explained totally through other documented anomalies.

Finding an explanation for PEAD has drawn the attention of many researchers. There are three main explanations of post-earnings-announcement drift in the literature. Past explanations have included methodological shortcomings (Jacob, et al, 2000), risk mismeasurement (Ball, et al, 1993), and slow reaction to the information content of earnings (Bernard and Thomas, 1990). The traditional view is that investors underreact initially and then later correct their reactions hence causing drift. Barberis, et al (1998) predict initial investor underreaction and eventual overreaction. Daniel, et al (1998) predicts initial overreaction, which increases over time. These explanations are related to the behavioural

finance literature where investors are not absolutely rational but present several psychological biases, which would explain their incorrect reaction to the information contained in the earnings announcement (Tverskys & Kahneman, 1974). Despite the above the explanation, PEAD is a controversial issue and there is still no full understanding of its origin (Forner, et al 2008).

1.1.2 Nairobi Securities Exchange

This study focused on establishing whether PEAD exist on the Nairobi Securities Exchange. NSE is an emerging market in a developing country and was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act. The first issue of share through the NSE was in 1988 when the first privatization involving the sale of a 20% government stake in Kenya Commercial Bank was done. This privatization marked the start of robust growth for the NSE. Notably, in Feb. 18.1994 the NSE 20-Share Index recorded an all-record high of 5030 points. It was rated by the International Finance Corporation as the best performing market in the world with a return of 179% in dollar terms .In July 1994 setting up a computerized delivery and settlement system was done. On Monday 11 September 2006, live trading on the automated trading systems was implemented. In July 2011, the Nairobi Stock Exchange Limited changed its name to the Nairobi Securities Exchange Limited. The change of name reflected the strategic plan of the Nairobi Securities Exchange to evolve into a full service securities exchange that supports trading, clearing and settlement of equities, debt. derivatives, and other associated instruments (www.nse.co.ke).

Disclosure of accounting information on stock market listed companies has become an important issue because of its significant influence on the security market (Su, 2003).Financial statements are the most reliable instruments, which investors use to analyse

and make decisions. The main purpose of financial reporting is providing information for investors and shareholders. One of the most important statements is statement of income, which shows firm's earnings per share (EPS).

This study seeked to extend the findings of Ball and Brown (1968) to NSE and analyses whether earnings announcements were followed in subsequent months by a return drift in the same direction as the earnings surprise. Kamuruci (2003) studied the predictability of accounting earnings using changes in share prices of all companies listed at the NSE during the period 1996 to 2001.Using weekly average share prices, he found that on average 60.38% of companies had their share prices moving in the same direction as the accounting earnings. This is a sign of presence of PEAD. The study was an event study that focused on analysis of secondary data of earnings and 60 days stock prices after earnings announcement for companies listed at the NSE. The scope of the study was an analysis of 3-year duration from January 2009 to December 2011.

1.2 Statement of the Problem

There is vast empirical evidence of the tendency for a stocks cumulative abnormal return to drift in the direction of an earnings surprise for the time following an earnings announcement. In spite of the great interest that this anomaly has raised in the US market, it has been scarcely studied in other markets. For the UK market, Liu et al. (2003) detect the presence of this phenomenon. Dische (2002) observes the same phenomenon in the German market. In Spain, Forner, et al (2008) studied PEAD evidence Spanish market and found out that the PEAD strategy, consisting of buying stocks with more favourable earnings surprises and short-selling those with more unfavourable surprises, yields significant positive returns in the months following earnings announcement.

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PEAD anomaly has been shown to exist across a range of markets many years after was first reported by Ball and Brown (1968). The anomaly has been tested mostly in developed markets such as NYSE, NASDAQ, and LSE. Almost all evidence in this area is obtained from the US or Western European countries. Developed market are highly liquid and closely regulated with sophisticated investors compared to most emerging markets that are characterized by a relatively large number of poorly informed and unsophisticated investors, low liquidity levels, weak legal, regulatory and institutional framework and operational bottlenecks (Osei, 2002). NSE being an emerging market, majority of investors lack financial sophistication needed to digest news event immediately they are announced. The role of investments advisors and financial analysts is not very much embraced at NSE unlike in developed markets therefore mostly it's characterised by uninformed investors. This creates possibility of PEAD being experienced at NSE.

In Kenya, available evidence documents a few related studies that have been carried out at NSE. Onyangoh (2004) studied on stock prices response to earnings announcement at NSE. The results of the study showed earnings announcement were incorporated in the bid and offer prices several days before the announcement date. In his interpretation of the findings, he found out that there are significant abnormal changes in prices and trading volume around earnings announcement.

Mohamed (2010) studied the effect of the earnings announcement on the stock price at the NSE. The results of the study showed that earning announcement contains relevant information to investors and which are fully impounded in stock prices prior to or almost instantaneously at time of announcement as long as the announcement date has positive excess returns.

Maina (2009), in his empirical investigation of stock returns reaction around earnings announcement, found out that there is a strong tendency for stocks returns to steadily increase over the fifteen days before the announcement day, shoot-up just before the announcement day and then resume their upward drift after announcement day. Kamuruci (2003) studied the predictability of accounting earnings using changes in share prices of all companies listed at the NSE during the period 1996 to 2001. He found out that on average 60.38% of companies had their share prices moving in the same direction as the accounting earnings.

Studies done to test for market anomalies at NSE include Kamau (2003), who found out that turn of the month and January effect are not present at NSE. Mokua (2003) and Cherutoi (2006) studied companies quoted at NSE found out 'weekend effect' is absent at NSE. Njuru (2007) tested for 'undereaction' to stock dividends announcement at NSE, he found out that there is evidence in favour of existence of undereaction anomaly to stock dividend announcement at NSE.

In all the previous studies at NSE, most showed possibility of PEAD but never tested for its existence. None narrowed down to PEAD or used earnings surprises to abnormal returns methodology in the study. There existed a gap of knowledge, which this study intended to fill. The study is an event study using corporate event namely, earnings announcement and most recent data to test for existence of PEAD anomaly at NSE. Little is known about PEAD at NSE therefore the study attempt to provide an answer to the following question:

Does post earnings announcement drift exist at Nairobi Securities Exchange?

1.3 Objective of the Study

The objective of the study is to test the existence of post earnings announcement drift in Nairobi Securities Exchange.

1.4 Significance of the Study

This study will be of paramount importance to the following parties as follows.

a) Investor

Investors will understand the behaviour of stock prices after the earnings announcement and have more information to base their investment decisions. It will enable investors who engage in arbitrage trading to make better choices of stocks to trade in.

b) Brokers and investment advisors

The findings will be useful to them in advising their clients about shares to buy, sell or hold. In addition, they will be in a better position to predict the likely behaviour of stock prices following earnings announcement.

c) Scholars

The findings will add to the wide academia knowledge in finance especially behavioural finance and market efficiency. The researchers and academicians will find this study useful for further discussion and research so that they can explore and further develop their studies.

d) The researcher

The study will assist the researcher qualify for an award of MBA Finance and thus put him on a competitive edge in the business world. The study will also excite more interest in the study of the subject and expose areas that need more research and exploration. Future research, students may fill up the gap in the areas not covered and thereby contribute to the frontier of knowledge in this area of PEAD.

e) Policy makers and regulators

For policy makers and regulators in at NSE and CMA, stock market inefficiency is a matter of concern because it implies less-than-optimal allocation of investment resources within the economy. Outcome of the study will shed more light on whether the theory of efficient markets are supported or contradicted by empirical findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the information from other researchers that have carried out their research in the related field of study. Major areas covered are efficient market hypothesis, market anomalies, earnings announcements, event study, and empirical evidence.

2.2 Efficient Market Hypothesis

Fama et al (1969) argued that in an active market that includes many well-informed and intelligent investors, securities will be appropriately priced and reflect all available information. If a market is efficient, no information or analysis can be expected to result in outperformance of an appropriate benchmark unless by chance. An 'efficient' market is defined as a market where there are large numbers of rational profit-maximizers actively competing, with each trying to predict future market values of individual securities. Current information is almost freely available to all participants. Competition among the intelligent participants leads to market prices that reflect past, current and future information. Therefore, in an efficient market at any point in time the actual price of a security will be a good estimate of its intrinsic value. (Fama, 1970)

Key reason for existence of efficient market is the stiff competition among rational investors who try to profit from any new information. As participants compete with each other to arbitrage on mispriced securities, the likelihood of finding such mispriced security becomes slimmer and the cost incurred in the efforts to analyze the information outweigh its benefits. If this occurs instantaneously, which is necessary for idealized world of frictionless markets

and costless trading, the prices must then reflect all available information and no arbitrage profits can be made as advanced by Getmansky et al, (2003) .Information available is therefore a key driver of securities prices. However, this notion has been challenged empirically, Roll (1988) found evidence that price movements for individual stocks cannot be traced to any specific public announcement. According to Fama (1970), there are three forms of efficient market hypothesis depending on the amount of information impounded into stock prices as follows.

2.2.1 Weak Form Efficiency

This form asserts that all past market prices and data are fully reflected in securities prices. This implies that future prices cannot be predicted by analyzing prices from the past. Excess returns cannot be earned in the long run by using investment strategies based on historical share prices or other historical data. In this form of hypothesis share prices, exhibit no serial dependencies, meaning that there are no patterns to asset prices. This implies that future price movements are determined entirely by information not contained in the price series. Hence, prices must follow a random walk theory where stock price changes have the same distribution and are independent of each other, so the past movement or trend of a stock price or market cannot be used to predict its future movement (Kendall, 1953)

2.2.2 Semi Strong Efficiency

In this form, all relevant publicly available information is fully reflected in share prices. This implies that share prices adjust to publicly available new information very rapidly and in an unbiased fashion, such that no excess returns can be earned by trading on that information.

To test for semi-strong-form efficiency, the adjustments to previously unknown news must be of a reasonable size and must be instantaneous. If there are any such adjustments it would suggest that investors had interpreted the information in a biased fashion and hence in an inefficient manner (Kendall, 1953). According to Onyangoh (2004), he found out that NSE was subject to semi strong form of EMH.

2.2.3 Strong-Form Efficiency

Share prices reflect all information, public and private, and no one can earn excess returns. To test for strong-form efficiency, a market needs to exist where investors cannot consistently earn excess returns over a long period of time. Benard & Thomas (1990),in their study on evidence that stock prices do not fully reflect the implications of current earnings for future at NYSE, they concluded that stock prices partially reflect a naïve earning expectation. Future earnings will be equal to earnings for the comparable quarter of the prior year. The study found abnormal returns around subsequent earnings announcement hence lack of strong form efficiency.

The theory of EMH was relevant for the study since earnings announcement convey important information to the market. How and when the information incorporated into the stock prices leads to likely presence of PEAD. Previous studies like Bernard and Thomas (1989) attributed it to market inefficiency. NSE being not fully efficient was expected to exhibit abnormal returns after earnings announcements dependent on the earnings surprises (Maina, 2007)

2.3 Stock Market Anomalies

According to Schwert. (2003), market anomalies are empirical results that seem to be inconsistent with maintained theories of asset-pricing behaviour. They indicate either market inefficiency or inadequacies in the underlying asset-pricing model. The market anomaly usually relates to structural factors, such as unfair competition lack of market transparency regulatory actions or behavioural biases by economic agents. The anomalies are cross-sectional and time series patterns in security returns that are not predicted by a central paradigm or theory. The following anomalies have been observed to exist by various researchers as follows:

2.3.1 Size Effect

Banz (1981) and Reinganum (1981) showed that small-capitalization firms on the NYSE earned higher average returns than is predicted by capital asset-pricing model (CAPM) from 1936 to 1975. This meant that company's economic growth is ultimately the driving force behind the performance of its stock and smaller companies have much longer runways for growth than larger companies do.

2.3.2 January Effect

Keim (1983) and Reinganum (1983) observed that stocks that underperformed in the fourth quarter of the prior year tend to outperform the markets in the month of January. Roll (1983) asserted that the higher volatility of small firm stocks caused more of them to experience substantial short-term capital losses that investors might want to realize for income tax purposes before the end of the year. This selling pressure reduce prices of the stocks in December, leading to a rebound in early January as investors repurchase these stocks to re-

establish their investment positions. Kamau (2003) found out that this effect does not exist in NSE.

2.3.3 Weekend Effect / Monday Effect

According to French (1980), he noted that the average returns to the Standard and Poor's composite portfolio of US stocks was reliably negative over weekends in the period 1953 to 1977. Monday returns were observed to be negative while those of weekdays were positive. Cherutoi (2006) in her study of weekend effect at NSE found out that it does not exist.

2.3.4 Value Effect

Basu (1983) noted that firms with high earnings-to-price ratios earn positive abnormal returns relative to the CAPM. Ball (1978) attributes this to fault in CAPM rather than market inefficiency where turnover cost, transactions costs and information collection costs would be low. If such a strategy earned reliable abnormal returns, it would be available to a large number of potential arbitrageurs at a very low cost. This makes it a relatively weak anomaly.

2.3.5 Over/undereaction to Announcements

Bernard (1993) on his survey paper dealing with the underreaction of stock prices to announcements of companies' earnings, he conjectures that market participants do not recognize the positive autocorrelations in earnings changes but in fact believe that earnings follow a random walk. Investors do not fully reflect the news content of earnings announcements hence a subsequent drift can be observed. Overreaction hypothesis is derived from the representativeness heuristic, as suggested by Tversky and Kahneman (1974) where investors overrate recent information, neglecting or attributing less importance to past news, in their prospects revisions, based on their judgment assessments of probabilities. This leads

to excessive optimism over good news and extreme pessimism over bad news. Stock prices then deviate temporarily from their intrinsic values.

2.3.6 Post Earnings Announcement Drift

According to Fama (1998) in his paper that criticizes evidence of many market anomalies, describes PEAD as an anomaly "above suspicion." and as "the granddaddy of all underreaction events." Brennan (1991) calls it a "most severe challenge to financial theorists. This anomaly was the main interest of the study to establish if it exists at NSE.

2.4 Earnings Announcement

Earnings are clearly a primary variable of interest to the investment community. Investors view earnings with great interest since it represents a summary measure of performance and is believed to convey information about a firm's future cash-flow prospects (FASB, 1994 and Elliott, 2006). Earnings announcement is an official public statement of a company's profitability for a specific time, typically a quarter or a year. It is made on a specific date during earnings season and is preceded by earnings estimates issued by equity analysts. When the company has been profitable leading up to the announcement, their share price will usually increase after the information is released. Days leading up to the announcement are often filled with speculation. Analyst estimates can be off the mark, and can rapidly adjust up or down the days leading up to the announcement. This can attract the attention of investors who take the estimates at face value, artificially inflating the share price on speculative trading (Maina, 2007).

Information on earnings announcement has an impact on stock prices because of the information content. If the information is good news that the current earnings have exceeded the forecasted or previous once, the stock return will follow the direction of earnings. If the information contain bad news that current earnings are lower than the forecasted or previous earnings, the stock return will follow the decline direction of earnings as asserted by Ball and Brown (1968). However, Ondigo (1995) on test of information content of annual reports and accounts of companies listed at NSE concluded that on average the reports of sampled companies had no information content during the period of study.

2.4.1 Earnings Forecast

Earning forecast is an estimate for a company's future quarterly or annual earnings. This study will base earning forecast on EPS since in a given fiscal year all publicly traded firms compute for EPS by dividing company's profit by the number of shares outstanding. This is considered the single most important aspect in determining a share's price and firm value, because EPS shows the amount of money to which a shareholder would be entitled in the event of the company's liquidation. EPS also shows the reported income, on a per-share basis, that a firm has available to pay dividends to common stockholders or to reinvest in itself (Farlex Dictionary, 2012).

The importance that investors place on earnings and forecasts of earnings has led to a considerable amount of research in the earnings-forecasting arena There are two mainly methods of forecasting which are analyst forecast and time series models. Past studies generally suggests the superiority of analyst forecasts because analysts are good at incorporating a variety of input in their forecasts. Majority of drift studies define the earnings surprise as a time-series forecast error and shows that drift is consistently and significantly larger when using analyst forecast errors. Choice of forecast would seem to be a critical

decision but majority of studies use a single method, usually a time-series model, to predict earnings (Joshua & Richard 2006). Time-series earnings forecasts are less costly alternatives to those of analysts and may be the only feasible source of earnings expectations for firms that are relatively small and uncovered by analysts. In an emerging market like NSE analyst forecast may be scanty due to lack of available data unlike in other developed market like NYSE therefore the study will relay on time series model of forecasting.

2.4.2 Earnings Surprises

An earnings surprise is an unexpected difference between a company's actual EPS and analysts' expected EPS. Almost all the previous studies have used unexpected earnings as advanced by Ball and Brown (1968) this forms the basis in which the stock returns follows news of the earnings surprise. When the surprise is positive, the stock returns follow that direction for at least 60 days and vice versa when the surprise is negative. To test for PEAD the relationship between earnings surprises and stock performance is examined. All drift studies share a basic form for estimating the earnings surprise: actual earnings minus a forecast of earnings divided by a deflator. SUE is used to measure earnings surprise and computed as follows.

$$SUE_Q = (A_Q - F_Q) / SD_Q$$

Where SUE_Q is quarter Q standardized unexpected earning, A_Q is quarter Q actual EPS reported by the firm. F_Q is quarter Q consensus earnings EPS forecasted by analysts in quarter Q-1 SD_Q is quarter Q standard deviation of earnings estimates, which is the deflator for the method.

SUE measures the earnings surprise in terms of the number of standard deviation above or below the forecasted earnings estimate (Hsu, 2002). This method is also used by Ball & Brown, (1968) and Bernard & Thomas (1989).

2.5 Event Study

Event study is statistical method to assess the impact of an event on the value of a firm. It examine the behaviour of firm stock prices in response to a given corporate event .Event can have either a positive or negative effect on the value of the security. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return that stems from the price fluctuation of the market as a whole. Corporate event include earnings announcement, stock splits, dividend announcement ,IPOs, exchange listing , changes in top management among many. Anderson (2007) uses the event study to determine if a dividend signal can be identified given that earnings and dividends are jointly made public. Mohammed (2010) and Onyangoh (2004) used event study methodology to study on stock price behaviour to earnings announcement. Njuru (2007) also used the method to test for undereaction of stock prices to divided announcement at NSE. Event study is helpful in testing the efficient market theory, by investigating the announcements impact on stock prices return (Jones, 2007).

2.6 Empirical Review

Ball and Brown, (1968) in their study "Empirical evaluation of accounting income numbers", sample 261 firms listed at NYSE in the nine fiscal years 1957 to 1965. They constructed two alternative models of what the market expects income to be and then investigated the market's reaction when its expectations proved false. They investigated net income and earnings per share using time-series regression model and earnings per share using a naïve model. Using monthly closing stock prices, they determined abnormal returns (residuals) which represented market reaction. In their findings, the distribution of the residuals showed the behaviours of the drift. They reported that estimated CAR continues to drift up after every

quarterly earnings announcement for good news firms and down for bad news firms. The return residuals for earnings surprises portfolio persisted for as long as two months after the announcement. This research showed existence of PEAD in NYSE. The researchers used monthly closing stock prices that may not be a true representation of daily stock prices in the month. One of their assumptions was that stock prices are from transactions, which have taken place simultaneously at the end of the month.

Forner, et al (2008) tested the existence of PEAD in Spain on a sample of 172 companies quoted in the Spanish stock market for the period between January 1994 and December 2003, using two earnings surprise measures based on earnings announcements; SUE and mean analyst forecasts. They found out that SUE–PEAD strategy yielded positive and statistically significant returns for the 3 and 6-month holding periods and the mean analyst forecast–PEAD strategy for all the holding periods. However, for any holding period, higher return levels were obtained with the SUE measure. The results show that the PEAD strategy, consisting of buying stocks with more favourable earnings surprises and short selling those with more unfavourable surprises, yields significant positive returns in the months following earnings announcement for both SUE and mean analyst forecast measures. Their evidence, which is similar to that observed in the US and UK markets, reduces the suspicion that the phenomenon is a data snooping result. The use of SUE measure in this study shows it is a better method to use in PEAD testing.

Bernard and Thomas (1989) in their study "Post-Earnings-Announcement Drift: Delayed Price Response or Risk Premium?" analysed 84,792 firm-quarters of data for NYSE/AMEX firms for 1974-86. They also conducted some supplementary tests based on 15,457 firm-quarters of data for over-the-counter stocks on the NASDAQ system for 1974-85. They

reported that the return to an equally weighted hedge portfolio consisting of long positions in extreme good news announcers and short positions in extreme bad news announcers earns +4.19% average estimated abnormal returns over the 60-day post-announcement period. Even though one sixth of the overall abnormal return accrues in the first five days. They also found that most of the drift occurs during the first 60 trading days subsequent to the earnings announcement, and there is little evidence of statistically significant drift beyond 180 trading days. They asserted that, if it is assumed all of the drift occurs within 480 days, then the fraction of the drift experienced within 60days is 53%, 58%, and76% for small, medium, and large firms, respectively. Approximately 100% of the drift occurs within nine months for small firms and within six months for large firms. The results of their study put forward the rationale of the window period of the study of 60 days

Brown and Peter (1995) in their study "Post-Earnings Announcement Drift?" extend previous attempts especially by Bernard and Thomas (1989) to examine whether the research design contributes to the observed PEAD phenomenon. Their analysis comprised 82,067 quarterly earnings announcements by NYSE and AMEX firms over the years 1974-1986. For each announcement, trading volume data was collected from the 1991 *CRSP* daily file. Post-announcement period was defined as day +1 to day +60, where day zero was the announcement date. They used regression, T-test and F-test to analyse the data .The results of the study confirmed earlier findings that post-earnings drift is an important feature of observed equity returns and it is neither illusory, nor an artefact of the experimental design. It may be a result of market inefficiency. However, they found out that the magnitude of the post-earnings announcement effect is correlated with factors that proxy for the probability of the firm surviving to be part of the earnings surprise sample, and with determinants of the bid-ask spread.

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Benjamin et al (2011) examined whether the two distinct PEAD are associated with seasonal random-walk-based and analyst-based earnings surprises were attributable to the trading activities of distinct sets of investors. They sampled 73,469 observations for 5,661 firms with data of actual quarterly earnings, analyst forecasts of quarterly earnings and earnings announcement dates from the I/B/E/S unadjusted file for the period 1993–2005. The study focused on a 60-day post-earnings-announcement period and required firms to have stock return data from the CRSP. They hypothesize that drift was attributable to the trading activities of traders who under-react to different forms of earnings innovations. Using regression analysis and T-test to analyse the data, they found that traders continue to trade in the direction of earnings surprises after earnings announcements. Their findings show PEAD exist in the market and could be associated to investor trading activities following earnings announcement.

Needham and Frank (2007) studied the effects of announcement of quarterly earnings surprises on stocks prices risk adjusted rate of return. They sampled 50 firms and analysed 11,183 observations using standard risk adjusted method. They found out that, when a firm announces positive surprise earnings investors take a positive signal about the firm's future, which causes an increase in firm's stock price.

2.6.1 Local Studies

Ondigo, (1995) tested on the information content of annual reports and accounts of companies listed in the NSE .He sampled 18 blue chip companies listed on NSE between 1990 to 1994 and analysed the behaviour of stock prices before and after the release of earnings reports. He concluded that on average, the annual reports of sampled companies had

no information content during the period under study. Possible explanations for this finding is that the stock prices before and after earnings announcement have already adjusted to most of the information contained in the annual reports. This can be confirmed by research on unexpected share price changes after earnings announcement.

Kamuruci (2003) studied the predictability of accounting earnings using changes in share prices of all companies listed at the NSE during the period 1996 to 2001.Using weekly average share prices of all the 53 companies listed, he found out that on average 60.38% of companies had their share prices moving in the same direction as the accounting earnings. He evidenced that there is a correlation between the events that affect accounting earnings changes and changes in security prices. From his findings, there is great reason to believe PEAD exist at NSE. He used weekly data, which might not be a true representative of the daily stock prices.

Onyangoh, (2004) while investigating stock prices response to earnings announcement, he sampled 16 companies quoted at the NSE between 1998 to 2003.He used linear regression to analyse the data. The results of the study showed earnings announcement were incorporated in the bid and offer prices several days before the announcement date. In his interpretation, he found there are significant and abnormal changes in prices and trading volume around earnings announcement. The results purported existence of overreaction hypothesis resulting from the unusual "good" year-end performance, investors appeared to have overreacted to latest information about the security and thus bid prices incorrectly. Overtime their mis-pricing becomes apparent and reversal take place until an equilibrium level is reached. His sample size was small compared to the entire population of 48 listed companies at that time.

Maina (2009) in his empirical investigation of stock returns reaction around earnings announcement for listed companies at NSE, sampled 30 companies in main investments market segment from 2002 to 2006. Using descriptive statistic methods to analyze data, he found out that there is a strong tendency for stocks returns to steadily increase over the 15 days before the announcement day, shoot-up just before the announcement day and then resume their upward drift after announcement day. He explained that any tendency for continuing drift depends on the earning surprise and whether there is continued abnormal trading by optimistic retail investors. He recommended a study directed to investigation of stock returns reaction around earnings announcement with respect to "good" and "bad" news subsamples by classifying earnings announcement as "good" and "bad" news.

Mohamed (2010), in his event study of the effect of the earnings announcement on the stock prices, based his study on 45 continually listed companies at the NSE during 2004-2008. He used descriptive statistics and T-test to test the significance of abnormal returns and market return. His event window was 30 days prior and 30 days after the earnings announcement. The findings of the study were that NSE react efficiently to earnings announcements in price adjustment up until 30 days after announcement. The study also revealed negative excess returns before and after the day of announcements date. The results of the study also showed that earning announcement contains relevant information to investors, which is fully impounded in stock prices prior to or almost instantaneously at time of announcement as long as the announcement date has positive excess returns. The study showed the effects of earnings announcement on stock prices and from the results, they indicate possibility of PEAD at NSE.

Njuru (2007) tested for undereaction to stock dividends announcement at NSE. He sued an event study with dividend announcement as the event. He sampled all the companies that had declared stock bonus in the year 1999 to 2006. He found out that there is evidence in favour of existence of undereaction anomaly to stock dividend announcement at NSE for the period under study. He also found out NSE portrays evidence of inefficiency in the semi-strong form of efficiency From the findings of his event study, there was evidence of existence of market anomalies at the NSE.

Other studies that have tested market anomalies are Kamau (2003), who found out that turn of the month and January effect are not present. Mokua (2003) studied 43 companies and found weekend effect was absent. Cherutoi (2006) analyzed 32 companies quoted at NSE between year 2001 to 2005 and found 'weekend effect' was absent at NSE.

2.7 Chapter Summary

From the literature review there is evidence on existence of PEAD in stock markets. However, most of its studies were confined to developed markets. Little is known about the anomaly in emerging markets like NSE. Studies done on NSE mostly concentrated on effects of earning announcement on stock prices and information content in earning announcement. Most used a small sample, different methodologies and much has changed at NSE since they were carried out. The tested anomalies are weekend effect, turn of the month, January effect, and undereaction to stock dividends announcement None of the above studies has tested PEAD therefore this research intends to contribute in filling the gap of knowledge at NSE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology adopted in order to meet the objectives of the study. Included are research design, population, sampling method, data collection, and data analysis. The aim of this chapter is to explain the methods and tools used in collecting and analyzing data in order to get appropriate information related to the subject under study.

3.2 Research Design

The research is an event study with earnings announcement being the event of importance. The study analyses abnormal stock returns following earning surprise in earning announcement. A descriptive survey design of quantitative method of data collection was adopted which was appropriate in collecting information from the entire population. Descriptive study describes the relationship between independent variable (Earning Surprise) and dependent variable (Abnormal stock return).The technique was appropriate as it involved a careful in depth study and analysis on abnormal stock returns due to earnings surprises.

3.3 Population of Study

The population of study comprised of all listed companies at the NSE between 1st January 2009 and 31st December 2011 (Appendix 1).The period of study was 3 years, which was the most recent and appropriately reflected current development at NSE. It was considered adequate for PEAD to be detected and analysed.

3.4 Sampling Method

A sample of population (Appendix 2) consisted of active and continually listed companies during the period of study. Judgemental sampling was used guided by the following criteria:

i)   Continually listed within the period of the study

ii) Annual financial statements were available for the period between 1st January 2006 to 31st December 2011 and fiscal year ending in December.

iii) Earnings announcement dates were available for the period under study.

iv) Daily stock prices were available for 61 days succeeding the announcement dates.

3.5 Data Collection

The study used secondary data, which involved collection of quantitative data from published financial reports and data from NSE database. The data required was:

i) Annual Earnings and announcement dates for sampled companies.

ii) Daily stock prices for 61 days following earnings announcement with event day inclusive.

The annual earnings (EPS) were obtained from audited financial reports. Date of earning announcement was taken as the day the report was publicly announced either through media or through any other means as provided by NSE database.

3.6 Data Analysis

The data was analysed using descriptive statistics. The results were tested using student

T- test to test the significance of the data and Levene test to test for test for homogeneity of variance. This is in conformity with Ball and Brown (1968), Bernard and Thomas (1989) and Mohammed (2010). Regression analysis was carried out to establish the relationship and correlation of the variables. The study has event window of 60 days after earnings announcement with event day as day 0.

3.6.1 Measurement of Earning Surprise

Earning surprise was computed by getting SUE. This was the most appropriate and common approach PEAD study as used by Hsu (2002) and Forner, et al (2008).

$$SUE_{ti} = \frac{(A_t - F_t)}{SD_t}$$

Where SUE_{ti} = Year t standardized unexpected earnings for company i,

A_t = Year t actual EPS reported by the firm,

F_t = Year t EPS forecasted,

SD_t = Year t standard deviation of earnings estimate.

SUE_{ti} were summed and averaged for 3 years to obtain Average standardised unexpected earnings (ASUEi) for company i.

The absolute value of ASUE measures the degree of unexpected earnings and the sign of indicates whether the unexpected earnings are above or below the forecasted estimate. That is, the greater the positive ASUE the greater the earnings surprise above the earnings estimate while the smaller the negative ASUE the greater the earnings surprise below the earnings estimate. There is no earnings surprise when ASUE equals zero; the actual earnings per share is in line with the earnings estimate. Those with positive ASUE are "good news" and those with negative are "bad news".

3.6.1.1 EPS Forecast

EPS forecast for the current year was forecasted using time series model as advanced by Joshua and Richard (2006).The past 3 years moving average of EPS was used. (Appendix 3)

$$F_{ti} = \frac{EPS_{t-1} + EPS_{t-2} + EPS_{t-3}}{3}$$

Where F_{ti} is forecasted EPS at year t and t is the current year for company i.

3.6.2 Measuring Cumulative Abnormal Returns

CAR, which measures stock returns due to earnings announcement over a period starting from +1 day to +60 days, was computed for each sampled company for 3 years.

$$AR_{ti} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Where AR_{ti} = Abnormal return of current day for security i,

$\quad\quad P_t$ = Day's closing stock price,

$\quad\quad P_{t-1}$ = Previous day closing stock price and t is the current day.

Daily AR for each day t1, t60 were summed up to obtain CAR for that year, which was then averaged by event window to obtain AAR. Annual AARs were summed to obtain ACAR (Appendix 4).

Ms excel and Statistical Package for Social Science (SPSS) was used to aid in the analysis. The SPSS was preferred because of its ability to cover a wide range of the most common statistical and graphical data analysis. Excel was used to generate earnings surprises and abnormal returns computations. SPSS generated regression and statistical values to test relationship, correlation, and significance of variables.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the data findings on PEAD of firms listed at the NSE with respect to share performance after earnings surprise. Secondary data used by the study was collected from the NSE database. Analysis involved evaluation of the earnings announcement drift, associated post earnings announcement abnormal return, and t-test for the market reaction to the earnings announcement. From the study population target of 55 companies, 38 companies were used as they had traded consistently for the period of the study. The study considered the event window of 60 days after earnings announcement. The firms stocks were grouped based on their average nature of surprise of the earnings from expected.

4.2 Standardised Unexpected Earnings (SUE)

Summary statistics for the SUE were analysed by looking at the annual deviation of EPS from the expected based on previous three-year moving averages then standardised by deflator, which is standard deviation of earnings estimates of that year. The cumulative SUE for each company was averaged to obtain ASUE. The decision is based on the sign of ASUE either positive, negative or zero and classified in terms of news as follows.

ASUE<-1   Bad news (unexpected increase)

ASUE>1   Good news (unexpected decrease)

-1>ASUE<1   Zero news (expected)

Table 4.1: Earning Surprise

Company	2009	2010	2011	ASUE	Decision
Kakuzi Limited	0.657	11.643	1.091	4.464	Positive
Rea Vipingo Ltd	-0.308	-2.739	-0.102	-1.050	Negative
Sasini Tea Limited	-1.655	0.995	-1.096	-0.585	Zero
Car & General Limited	0.653	-10.038	0.423	-2.987	Negative
CMC Holdings Limited	-1.719	2.412	-1.245	-0.184	Zero
Kenya Airways Limited	0.848	-0.291	1.341	0.633	Zero
Marshalls Limited	0.101	87.329	0.025	29.152	Positive
Nation Media Group Limited	1.103	5.560	-1.241	1.807	Positive
Scan Group Limited	1.827	-0.719	1.428	0.845	Zero
Barclays Bank Of Kenya	-0.724	-1.322	-0.623	-0.889	Zero
CFC Stanbic Holdings	0.546	-3.805	1.284	-0.658	Zero
Diamond Trust Bank	0.781	4.408	0.755	1.982	Positive
Housing Finance Company	0.016	-5.438	-0.058	-1.827	Negative
Centum Investment Company	-1.284	3.553	-1.213	0.352	Zero
Jubilee Holdings Limited	0.475	1.475	3.340	1.763	Positive
National Bank Of Kenya	1.368	1.679	1.392	1.480	Positive
Kenya Commercial Bank	-1.464	3.332	-1.004	0.288	Zero
NIC Bank Limited	-1.462	0.208	-2.538	-1.264	Negative
Olympia Capital Holdings	0.057	-13.546	-0.013	-4.500	Negative
Pan Africa Insurance Company	1.698	-0.752	-0.231	0.238	Zero
Standard Chartered Bank	1.157	1.262	4.701	2.373	Positive
Athi-River Mining Limited	1.109	1.801	1.366	1.425	Positive
Bamburi Cement Company	0.872	1.744	5.831	2.815	Positive
BAT Limited	0.656	5.747	0.085	2.163	Positive
Crown-Berger Kenya	1.197	-0.967	-1.276	-0.349	Zero
East African Cables	-1.082	2.194	-0.210	0.301	Zero
East African Portland Cement	0.594	-1.089	-12.892	-4.462	Negative
East African Breweries Ltd	-0.710	-4.741	-0.251	-1.901	Negative
Eveready East Africa Ltd	-0.008	46.407	-0.003	15.465	Positive
Kenya Oil Company Limited	-2.356	-0.450	-0.459	-1.088	Negative
Kenya Power and Lighting Company	0.660	4.218	4.542	3.140	Positive
Kenya Electricity Generating Company	-1.900	-0.184	6.839	1.585	Positive
Total Kenya Ltd	-0.180	-5.897	0.082	-1.998	Negative
Eaagads Limited	-0.285	-10.958	0.003	-3.747	Negative
Express Kenya Limited	1.142	-0.692	2.062	0.837	Zero
Kapchorua Tea Company	-1.002	-11.550	-0.775	-4.443	Negative
Williamson Tea Kenya Ltd	2.400	-0.299	-0.134	0.656	Zero
Limuru Tea Company Ltd	-0.993	-8.955	-1.597	-3.848	Negative

Judging from Table 4.1 thirteen firms, on average, had unexpected earnings increase (Good news). Marshall East Africa Ltd had the highest average positive surprise (29.152) followed by Eveready East Africa Limited (15.465). Twelve firms had unexpected earnings decrease (Bad news). Olympia Capital Holdings and East African Portland Cement had the highest average negative surprise of -4.500 and -4.462 respectively. Besides, 13 firms also had zero surprise in earnings announcements. However, of the 13 firms, five had expected decrease in earnings while eight had expected increase in earnings.

4.3 Post Earning Announcement Drift and Stock Performance

Daily Abnormal Returns (AR) were computed for the event window for each company and then averaged by the period of study to obtain Average Abnormal Returns. The decision was based on the sign of AAR, which shows the direction of returns.

AARi > 0   Positive drift

AARi = 0   No drift

AARi < 0   Negative drift

From the inferential analysis, the AAR and Statistical Tests (*t-test*) have been calculated for the period under examination (t1, t60). The independent t-test was conducted to determine whether the market or share reaction (through abnormality in stock returns) were significantly different from across different earnings drift (positive or negative drifts) or whether the difference observed between the two is due to a coincidence arising from random sampling. The findings were presented in Table 4.2. The hypothesis was:

H_0: There is no significant difference in market reaction to drifts in earnings announcement

H_A: There is a significant difference in market reaction to drifts in earnings announcement

From Table 4.2 the study shows that from the first day of announcing earnings to the sixth day, the shares of companies that had negative earnings surprise experience positive abnormal returns than firms that had positive earnings surprise. However, the market was indifferent on the t7, t12, t17, t20, t25, t44, and t48. Firms with negative earnings surprise performed poorly than those with positive surprise on t8, t10, t13, t15, t19, t21, t22 among others.

Table 4.3 presenting the t-test results shows that a significant t-result was established on t1 (p=.042), t9 (p=.05), t10 (p=0.012), t37 (0.018). This depicts that post earnings announcement of positive and negative drift from expected earnings do not influence investors decisions on the first, ninth, tenth and thirty seventh day of trading after announcement at 95% significance level. No investor could gain by trading these companies' share. Thus, the null hypothesis of no significant difference in market reaction to drifts in earnings announcement is not rejected in most of the trading days.

On unexpected surprise, either to the positive or negative, Table 4.4 demonstrates that firms with unexpected decrease in earnings had higher abnormal returns from t1 – t7. This difference was, however, significant on the fifth date after announcement (p = 0.033) at 95% confidence level. Similar relationship was experienced on t30 (p=.041) at 95% confidence level. The study also established that this relationship was reversed in the tenth date with firms that had unexpected increase experiencing higher abnormal returns than those with unexpected decrease (p = 0.083) this also repeated itself on the nineteenth day (t19) (p = .056) and t31 (p=.079) at 90% confidence level and t46 (p=.046) at 95% confidence level.

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Table 4.5 presents results of either market reaction to expected earnings, to the positive or negative. The Table demonstrates that firms with expected decrease in earnings had higher abnormal returns from t1 – t9 with exceptions being on the t3 and t7, which had same abnormal returns. This difference was, however, significant on the fifth date after announcement ($p = 0.033$) at 95% confidence level. Significance relationship was established on the t1 ($p=0.053$) and t3 ($p = 0.029$) at 90% and 95% confidence level. Similar relationship was experienced on t30 ($p=.041$) at 95% confidence level. On the t10, firms that experienced expected increase in earnings had positive abnormal returns than firms that experienced expected decrease in earnings ($p=0.039$). Similar experience was established on the t56 day ($p=0.023$) at 95% confidence level.

The t-stats of the *unin* portfolio both before and after the announcement date, in most of the cases, are statistically significant. This fact, as mentioned in the previous comparison, implies the expectation that the market might have for the forthcoming earnings announcement. Furthermore, while for some firms after the announcement the significance is declining, for many others it remains at high levels and in many cases, it keeps its statistic significance.

4.4 Regression Analysis

The study conducted a regression analysis of the annual cumulative average of the abnormal return of the stocks in question and their respective earning surprise. The aim was to establish whether earning surprise has a linear relationship with stock returns.

Table 4.6: Regression Coefficient

Company	R	Constant	Coefficients	t	Sig
Kakuzi Limited	.519	.002	-0.0002	-.607	.653
Rea Vipingo Ltd	.396	-.002	-0.0003	-.432	.741
Sasini Tea Limited	.561	.000	-0.0012	-.678	.621
Car & General Limited	.507	.001	-0.0003	-.588	.662
CMC Holdings Limited	.200	-.001	-0.0002	-.204	.872
Kenya Airways Limited	.912	-.003	0.0039	2.225	.269
Marshalls Limited	.026	-.003	-0.0000	.026	.984
Nation Media Group	.589	-.002	0.0002	.728	.599
Scan Group Limited	.868	.003	-0.0013	-1.747	.331
Barclays Bank Of Kenya	.605	-.012	-0.0105	-.759	.587
CFC Stanbic Holdings	.893	.000	-0.0024	-1.985	.297
Diamond Trust Bank	.788	-.002	0.0007	1.281	.422
Housing Finance Company	.725	-.001	0.0001	1.053	.484
Centum Investment Company	.495	.003	-0.0005	-.569	.671
Jubilee Holdings Limited	.045	.000	-0.0000	-.045	.971
National Bank Of Kenya	1.000	.020	-0.0142	-253.529	.003
Kenya Commercial Bank	.823	-.001	-0.0005	-1.450	.384
NIC Bank Limited	.741	.001	0.0005	1.103	.469
Olympia Capital Holdings	.336	-.005	-0.0001	-.357	.782
Pan Africa Insurance Company	.002	-.003	0.0000	.002	.999
Standard Chartered Bank	.359	.001	-0.0007	-.385	.766
Athi-River Mining Limited	.944	-.003	0.0038	2.850	.215
Bamburi Cement Company	.661	.001	-0.0000	-.882	.540
BAT Limited	.994	-.001	0.0005	9.304	.068
Crown-Berger Kenya	.945	.002	0.0029	2.903	.211
East African Cables	.523	-.002	-0.0001	-.614	.650
East African Portland Cement	.466	-.002	-0.0002	-.527	.691
East African Breweries Ltd	.276	.001	-0.0000	-.287	.822
Eveready East Africa Ltd	.157	-.003	0.0000	.159	.900
Kenya Oil Company Limited	.639	-.007	-0.0056	-.831	.559
Kenya Power and Lighting Co.	.997	.000	0.0000	-13.247	.048
Kenya Electricity Generating Co.	.917	.000	-0.0002	-2.300	.261
Total Kenya Ltd	.451	-.002	-0.0002	-.506	.702
Eaagads Limited	.500	-.006	-0.0005	-.577	.667
Express Kenya Limited	.591	-.002	-0.0012	-.733	.597
Kapchorua Tea Company	.434	-.002	-0.0001	-.482	.714
Williamson Tea Kenya Ltd	.987	.002	0.0006	6.049	.104
Limuru Tea Company Ltd	.598	-.002	-0.0003	-.746	.592

Table 4.6 established a minimum regression constant of less than 0.000 and a maximum of 0.012. The regression coefficient values ranged from -0.0142 and 0.0038; positive coefficients were established in 12 of the 38 companies whose regression analyses were run. Thirteen correlation coefficient results were established below 0.5. The study established one significant result at 95% confidence level from National Bank of Kenya with a regression coefficient of -0.0142 (p = 0.003). BAT had a coefficient of 0.0005 although at 90% confidence level (p = 0.068).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the key findings presented in chapter four, conclusions drawn based on such findings and recommendations there-to. This chapter is thus structured into summary, conclusions, recommendations, and areas for further research.

5.2 Summary

The study examined the responsiveness of stock returns following an earnings surprise for companies listed at the NSE for the period 2009 to 2011. From the study findings, the Average Abnormal Returns (AAR) and Statistical Tests (*t-test*) have been calculated for all the periods under examination (+1, +60) for every firm individually. The study established an average unexpected drift in 25 of the firms of which 13 were positive and 12 negative. Thirteen of the average earning surprises were expected.

Assuming that the NSE market is an efficient market, the analysis reveals that the earnings announcement produces excessive returns, fact that constitutes a flagrant violation of the semi-strong form of the EMH theory. According to the Market Efficiency Theory, an immediate adaptation of the stock prices around the new earnings was expected.

The linear relationship between earning surprise and share price performance shows that while there is high correlation between the two (correlation value above 0.5 in 25 cases).Generally there is a strong association between earnings surprise and cumulative abnormal returns however, the significance of such relationship were low except for one firm that had a t-significance value of 0.003.

5.3 Conclusions

The analysis in this paper, with 38 firms on the NSE market, do not support the hypothesis that stock prices incorporate immediately the information of new quarterly earnings announcements as soon as they become publicly available. In the long-term, regression values show no linearity between stock performance and earnings surprise. In particular (and in accordance up to a significant grade with the findings of the international literature), the announcement of abnormal positive EPS is accompanied by positive cumulative and statistically significant abnormal returns for the period (+1, +60) after the announcement date. Moreover, the announcement of unexpected positive (negative) earnings resulted in positive (negative) and statistically significant cumulative returns for the period (+1, +60) day after the announcement, when the used sample is either the total of the sample or population. The findings conform to those of Ball & Brown (1968) and Bernard &Thomas (1989).

The expected portfolios present a more moderate reaction (compared to the unexpected ones), with the expected sign (in most of the cases) and the t-stats being statistically insignificant (or rarely, close to the significance limit). Additionally, for the unexpected increase occasion, some observations of the AARs give statistically significant results, which enhance the findings regarding the inefficiency of the market. This shows that is in some cases the market starts realizing the earnings announcement, before they get announced and publicly available. Firms, which are under close surveillance, do not present in general, unexpected earnings and for others, that the state's security guarantees them, do not provide unexpected decreases. Nevertheless, the statistic significance is still present at the unexpected increase portfolio, which strength even more the estimation that the market discounts (up to a point) the upcoming earnings announcement, especially when it is a positive one. Additionally, even with this categorization, the portfolios of expected changes at stock prices, still give more mediocre results in comparison to the unexpected portfolios.
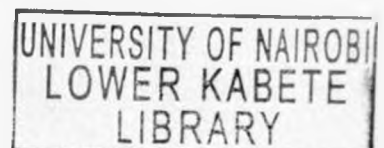
Furthermore, it is crucial to state that in both approaches that were used, it was found a delay in market's reaction. In both tests, the day of the earnings announcement there was not any statistically significant result and those that followed the next period ($t = 1$) were rapidly de-escalated (in unexpected decrease portfolio with a much faster pace than in the unexpected increase portfolio). This finding indicates the immaturity of the NSE market and maybe the inability of it to rapidly decode the new earnings announcements.

With the exception of a few variations caused by the unique characteristics of the NSE market, results are close to the findings that the international literature provides regarding the adjustment of stock prices after the quarterly earnings announcement. In this study PEAD phenomenon is monitored with an alternative portfolios formation approach. Foster et al (2008), in their principal study around PEAD, calculate earnings based on a particular auto-correlated model, assuming that investors compute this model and thus create expectations for the earnings. However, this specific formula, from econometric point of view, is particularly demanding, especially for the average investor. On the contrary, this paper uses a much simpler expectations formation approach around earnings and portfolios construction. Nevertheless, results close to the ones described in the international literature are found.

In conclusion, the most important discovery is that PEAD seems to exist in the NSE market and actually, at a significant level, providing a very strong indication that the NSE market has violated, at least, the semi-strong form of the EMH. After earnings announcements, estimated cumulative abnormal returns continue to drift up for "good news" firms and down for "bad news" firms. However, this conclusion is limited to the period of study, methodology and subject to the limitations of this study.

5.4 Limitations of the Study

Though every attempt was made to make the study as conclusive as possible there were a few limitations encountered, which may in one way or another have an impact on the research. First, the study intended to cover a longer period of at least 5years to be consistent with other studies at NSE. However, the period covered is short which was occasioned by the voluminous nature of data and computations required for the study and necessary applications required to generate the data easily and efficiently this lead to use of 3 years duration. Most international research in this area covers a longer period hence the study would have yielded more conclusive results if a longer period was used.

Lack of availability of proper data such as analyst earnings estimates from financial advisors and stockbrokers, which would have may be lead to attainment of better results. The study employed time series estimation model that may not be wholly adequate. Lack of necessary data for some securities that were listed between the study periods occasioned by either being delisted or were not actively traded during event window. This lead to use of sampled securities that remained active, which may not have been adequate to draw inference to the general population.

The cost of obtaining secondary data from the NSE was prohibitive. Unlike some years back when the exchange never used to charge for data, the situation has now changed. Another limitation is the assumption that other corporate events for example stock split, bonus issue, debt issue announcements during the event window did not occur and if they did, there was no contamination of results.

5.5 Recommendations for Further Study

NSE has been extensively researched and a lot more needs to be done to provide more information to stockholders, traders, students, and public. The market plays a key role in Kenyan economy therefore more information about it needs to be known to attract more players. The role of investment and financial advisors should be well enhanced so that the players base their decision from an informed point of view hence making better decisions. The study focused on PEAD anomaly evidencing its existence at the NSE. The following areas of further study are recommended.

This study results can be verified by conducting the same study with a larger sample or the population and over a longer period to obtain findings that are more reliable. Further study can be conducted in finding the causes of PEAD anomaly at NSE especially whether investor undereaction or overreaction to earnings announcements leads to PEAD. In addition, a study to differentiate between individual investors and institution investors, who actually cause PEAD, may also be carried out.

The study used a time series model of earnings estimation, to improve the results of this study a similar study can be conducted using other methods of earnings forecast for example use of analyst earnings forecasts because measurement errors might be driving the results of this study. A study comparing the PEAD for surprises calculated from analyst and time series forecast may be studied to find out if there is significant difference. Lastly, a study may be carried out to establish the relationship between PEAD and various variables such as stock liquidity, investor trading and trade volumes at NSE.

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APPENDICES

AGRICULTURAL

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi ltd
4. Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd

COMMERCIAL AND SERVICES

8. Express Ltd
9. Kenya Airways Ltd
10. Nation Media Group
11. Standard Group Ltd
12. TPS Eastern Africa (Serena) Ltd
13. Scangroup Ltd
14. Uchumi Supermarket Ltd
15. Hutchings Biemer Ltd
16. Longhorn Kenya Ltd

TELECOMMUNICATION AND TECHNOLOGY

17. AccessKenya Group Ltd
18. Safaricom Ltd

AUTOMOBILES AND ACCESSORIES

19. Car and General (K) Ltd
20. CMC Holdings Ltd
21. Sameer Africa Ltd
22. Marshalls (E.A.) Ltd

BANKING

23. Barclays Bank Ltd
24. CFC Stanbic Holdings Ltd
25. Diamond Trust Bank Kenya Ltd

26. Housing Finance Co Ltd

27. Kenya Commercial Bank Ltd

28. National Bank of Kenya Ltd

29. NIC Bank Ltd

30. Standard Chartered Bank Ltd

31. Equity Bank Ltd

32. The Co-operative Bank of Kenya Ltd.

INSURANCE

33. Jubilee Holdings Ltd

34. Pan Africa Insurance Holdings Ltd

35. Kenya Re-Insurance Corporation Ltd

36. CFC Insurance Holdings

37. British-American Investments Company (Kenya) Ltd

38. CIC Insurance Group Ltd

INVESTMENT

39. City Trust Ltd

40. Olympia Capital Holdings ltd

41. Centum Investment Co Ltd

42. Trans-Century Ltd

MANUFACTURING AND ALLIED

43. B.O.C Kenya Ltd

44. British American Tobacco Kenya Ltd

45. Carbacid Investments Ltd

46. East African Breweries Ltd

47. Mumias Sugar Co. Ltd

48. Unga Group Ltd

49. Eveready East Africa Ltd

50. Kenya Orchards Ltd

51. A.Baumann CO Ltd

CONSTRUCTION AND ALLIED

52. Athi River Mining

53. Bamburi Cement Ltd

54. Crown Berger Ltd

55. E.A.Cables Ltd

APPENDIX 2   Samples of Listed Companies

1. Kakuzi Limited
2. Rea Vipingo Ltd
3. Sasini Tea Limited
4. Car & General Limited
5. CMC Holdings Limited
6. Kenya Airways Limited
7. Marshalls Limited
8. Nation Media Group Limited
9. Scan Group Limited
10. Barclays Bank Of Kenya
11. CFC Stanbic Holdings
12. Diamond Trust Bank
13. Housing Finance Company
14. Centum Investment Company
15. Jubilee Holdings Limited
16. National Bank Of Kenya
17. Kenya Commercial Bank
18. NIC Bank Limited
19. Olympia Capital Holdings
20. Pan Africa Insurance Company
21. Standard Chartered Bank
22. Athi-River Mining Limited
23. Bamburi Cement Company
24. BAT Limited
25. Crown-Berger Kenya
26. East African Cables
27. East African Portland Cement
28. East African Breweries Ltd
29. Eveready East Africa Ltd
30. Kenya Oil Company Limited
31. Kenya Power and Lighting Company
32. Kenya Electricity Generating Company
33. Total Kenya Ltd
34. Eaagads Limited
35. Express Kenya Limited
36. Kapchorua Tea Company
37. Williamson Tea Kenya Ltd
38. Limuru Tea Company Ltd

APPENDIX 3   Earnings Per Share (EPS)

Company	2006	2007	2008	2009	2010	2011
Kakuzi	4.27	3.76	6.79	9.78	14.43	23.04
Rea Vipingo	2.14	2.07	1.88	1.92	2.8	2.48
Sasini	20.29	10.17	6.23	0.18	3.88	2.34
Car and General	1.64	8.71	6.09	7.85	1	0.73
CMC	5.42	7	8.94	1.27	1.59	0.93
Kenya Airways Ltd Ord 5.00	2.82	6.54	10.46	8.88	8.38	8.85
Marshalls (E.A.) Ltd Ord	1.55	2.95	3.11	2.94	11.8	8.16
Nation Media Group Ord	11.99	10.04	10.98	15.1	18.17	7.85
Scangroup Ltd	1.12	1.12	3.15	3.96	1.43	1.82
Barclays Bank Ltd Ord	18.13	2.41	3.31	3.62	4.07	4.49
CFC Stanbic Holdings Ltd	4.62	3.54	6.03	5.93	3.09	0.13
Diamond Trust Bank Kenya Ltd	1.65	2.37	3.49	4.54	6.91	8.31
Housing Finance Co Ltd	0.52	0.51	0.88	0.64	0.59	1.02
Centum Investment Company Ltd	4.39	5.37	11.03	2.03	1.58	0.57
Jubilee Holdings Ltd	7.68	15.18	15.54	14.73	15.85	20.3
Kenya Commercial Bank Ltd	1.91	2.99	3.12	5.6	6.2	7.31
National Bank of Kenya Ltd	3.94	6.64	12.18	1.49	1.89	1.84
NIC Bank Ltd	3.17	3.34	5.56	2.51	3.5	3.33
Olympia Capital Holdings ltd	0.92	2.29	1.14	1.48	0.86	1.33
Pan Africa Insurance Holdings Ltd	1.95	3.68	1.96	4.19	2	2.89
Standard Chartered Bank Ltd	6.74	9.02	9.69	12.76	11.95	17.4
Athi River Mining Ord	1.26	2.15	2.84	4.26	5.08	6.52
Bamburi Cement Ltd Ord	4.73	5.94	7.2	10.5	9.4	19.2
British American Tobacco Kenya Ltd	12.1	13.82	12.01	13.86	17	14.78
Crown Berger Ltd	2.15	1.45	2.69	3.23	1.3	3.64
E.A.Cables Ltd	6.11	10.52	1.41	2.06	2.29	1.46
E.A.Portland Cement Ltd	2.99	6.75	4.58	8.49	5.96	20.38
East African Breweries Ltd	35.04	7.24	8.18	9.31	11.61	10.89
Eveready East Africa Ltd	0.99	0.74	0.08	0.6	0.08	0.13
Kenya Oil Co Ltd	8.32	9.09	8.29	5.84	8.8	7.85
Kenya Power & Lighting Ltd	5.79	16.05	20.78	21.72	22.3	40.76
KenGen Ltd.	3.34	3.07	2.81	1.11	2.68	0.94
Total Kenya Ltd	3.34	3.07	2.81	2.99	4.02	2.79
Eaagads Ltd	0.18	0.89	0.63	0.19	3.69	1.47
Express Ltd	0.14	1.68	2.06	2.29	1.22	0.43
A.Baumann & Co.Ltd	8.9	9.88	6.67	2.24	17.84	17.87
Williamson Tea Kenya Ltd	7.35	9.18	10.08	16.31	11.14	12.55
Limuru Tea Co. Ltd	16.1	5.27	8.05	2.34	14.11	22.47

Source....NSE Database

APPENDIX 4   Averages Abnormal Return (AAR)

COMPANY	2009	2010	2011	ACAR
Kakuzi	0.0038138	-0.0001236	0.0003476	0.0040377
Rea Vipingo	-0.0034072	-0.0015807	-0.0014750	-0.0064629
Sasini	-0.0002911	-0.0019132	0.0039047	0.0017005
Car and General	0.0037610	0.0039699	-0.0029191	0.0048119
CMC	-0.0026811	-0.0017194	0.0015622	-0.0028383
Kenya Airways Ltd	-0.0016952	-0.0039662	0.0029772	-0.0026842
Marshalls (E.A.) Ltd Ord	-0.0034295	-0.0026277	-0.0019031	-0.0079602
Nation Media Group Ord	-0.0027201	0.0000914	-0.0011406	-0.0037693
Scangroup Ltd	0.0011925	0.0038197	-0.0003501	0.0046621
Barclays Bank Ltd Ord	0.0011413	0.0010301	-0.0102477	-0.0080764
CFC Stanbic Holdings Ltd	0.0020668	0.0083512	-0.0061660	0.0042520
Diamond Trust Bank Kenya Ltd	0.0001538	0.0015511	-0.0022019	-0.0004970
Housing Finance Co Ltd	-0.0006902	-0.0018290	-0.0015140	-0.0040333
Centum Investment Company Ltd	0.0061373	0.0011737	0.0010600	0.0083710
Jubilee Holdings Ltd	0.0012047	-0.0011402	0.0006689	0.0007334
Kenya Commercial Bank Ltd	0.0003614	-0.0040638	0.0000378	-0.0036647
National Bank of Kenya Ltd	0.0009495	-0.0024428	-0.0012448	-0.0027381
NIC Bank Ltd	0.0005436	0.0003812	-0.0011003	-0.0001755
Olympia Capital Holdings ltd	-0.0072859	-0.0034162	-0.0024826	-0.0131847
Pan Africa Insurance Holdings Ltd	-0.0018293	0.0023528	-0.0107411	-0.0102176
Standard Chartered Bank Ltd	-0.0031108	0.0041648	-0.0020887	-0.0010348
Athi River Mining Ord	0.0010827	0.0035490	0.0011937	0.0058254
Bamburi Cement Ltd Ord	0.0006072	0.0008445	0.0004795	0.0019313
British American Tobacco Kenya Ltd	-0.0000283	0.0024400	-0.0006779	0.0017337
Crown Berger Ltd	0.0056660	-0.0023123	-0.0005102	0.0028434
E.A.Cables Ltd	-0.0011884	-0.0018205	-0.0020241	-0.0050330
E.A.Portland Cement Ltd	-0.0046362	0.0001067	-0.0006741	-0.0052036
East African Breweries Ltd	0.0003791	0.0006383	0.0006856	0.0017031
Eveready East Africa Ltd	-0.0045470	-0.0030949	-0.0022573	-0.0098991
Kenya Oil Co Ltd	0.0058020	-0.0123253	0.0026090	-0.0039143
Kenya Power & Lighting Ltd	0.0004650	0.0004244	0.0004221	0.0013115
KenGen Ltd.	0.0004993	0.0009561	-0.0010217	0.0004337
Total Kenya Ltd	-0.0039935	-0.0008671	-0.0008087	-0.0056693
Eaagads Ltd	-0.0113966	0.0006572	0.0003535	-0.0103859
Express Ltd	-0.0004001	-0.0016530	-0.0057429	-0.0077960
A.Baumann & Co.Ltd	-0.0034295	-0.0004335	-0.0002261	-0.0040891
Williamson Tea Kenya Ltd	0.0036562	0.0018124	0.0022348	0.0077034
Limuru Tea Co. Ltd	-0.0034295	0.0000184	-0.0001685	-0.0035797

Source…Excel Worksheet.

APPENDIX 5   Earnings Announcement Dates

Company	2009	2010	2011
Athi River Mining	March 31, 2009	15-Mar-10	October 3, 2011
Bamburi	February 26, 2009	February 26, 2010	August 3, 2011
Barclays	February 17, 2009	February 18, 2010	February 10, 2011
BAT Limited	October 22, 2009	March 2, 2010	February 17, 2011
CAR & General	January 28, 2009	January 29, 2010	January 31, 2011
Centum Investment Company	October 28, 2009	22-Mar-10	October 11, 2011
CFC Stanbic Holdings	March 5, 2009	February 19, 2010	March 17, 2011
CMC Holdings	January 9, 2009	January 12, 2010	January 7, 2011
Crown-Berger Kenya	February 12, 2009	April 29, 2010	February 13, 2011
Diamond Trust	March 9, 2009	18-Mar-10	February 25, 2011
Eaagads	May 11, 2009	November 1, 2010	July 11, 2011
EABL	August 27, 2009	August 27, 2010	August 25, 2011
EA Cables	February 10, 2009	February 26, 2010	February 10, 2011
EA Portland	September 30, 2009	10-Mar-10	August 24, 2011
Eveready East Africa	February 27, 2009	February 18, 2010	August 26, 2011
Express Kenya Limited	April 29, 2009	April 29, 2010	February 27, 2011
Housing Finance Co	March 3, 2009	4-Mar-10	January 12, 2011
Jubilee Holdings	April 4, 2009	29-Mar-10	April 14, 2011
Kakuzi	March 5, 2009	April 29, 2010	March 3, 2011
Kapchorua	June 24, 2009	June 25, 2010	June 14, 2011
Kenya Airways	June 5, 2009	June 4, 2010	May 27, 2011
TPS Serena	March 30, 2009	February 25, 2010	March 2, 2011
KenGen	October 16, 2009	October 13, 2010	October 7, 2011
Kenol	April 3, 2009	April 7, 2010	January 23, 2011
KPLC	October 28, 2009	September 24, 2010	February 25, 2011
Limuru Tea	April 20, 2009	March 31, 2010	March 3, 2011
Marshalls Limited	April 13 2009	April 29, 2010	January 12, 2011
Nation Media Group	March 26, 2009	22-Mar-10	February 21, 2011
National Bank Of Kenya	March 10 2009	May 25, 2010	February 22, 2011
NIC Bank	February 19, 2009	February 24, 2010	February 24, 2011
Olympia Capital	August 3, 2009	July 2, 2010	October 11, 2011
Pan Africa Insurance Company	April 22 2009	8-Mar-10	April 1, 2011
Rea Vipingo	January 21, 2009	January 20, 2010	January 24, 2011
Sasini	December 9, 2009	December 8, 2010	February 17, 2011
Scangroup	April 16, 2009	April 29, 2010	February 22, 2011
Standard Chartered Bank	March 3, 2009	4-Mar-10	March 2, 2011
Total	April 2, 2009	4-Mar-10	March 3, 2011
Williamson Tea	June 24, 2009	June 25, 2010	June 14, 2011

Source ....NSE Database

APPENDIX 6 TABLES

Table 4.2: Mean Differences in Positive and Negative Drifts

Day	Drift	N	Mean	Std. Deviation	Std. Error Mean
t1	Positive Drift	58	-.005	.018	.002
	Negative Drift	56	.004	.028	.004
t2	Positive Drift	58	-.004	.028	.004
	Negative Drift	56	.003	.029	.004
t3	Positive Drift	58	.000	.018	.002
	Negative Drift	56	.001	.026	.003
t4	Positive Drift	58	-.002	.021	.003
	Negative Drift	56	.004	.026	.004
t5	Positive Drift	58	-.005	.020	.003
	Negative Drift	56	.005	.031	.004
t6	Positive Drift	58	-.001	.018	.002
	Negative Drift	56	.000	.029	.004
t7	Positive Drift	58	-.002	.021	.003
	Negative Drift	56	-.002	.024	.003
t8	Positive Drift	58	.001	.020	.003
	Negative Drift	56	-.002	.025	.003
t9	Positive Drift	58	-.002	.020	.003
	Negative Drift	56	.005	.018	.002
t10	Positive Drift	58	.005	.019	.003
	Negative Drift	56	-.003	.014	.002
t11	Positive Drift	58	.000	.025	.003
	Negative Drift	56	.002	.020	.003
t12	Positive Drift	58	-.002	.011	.002
	Negative Drift	56	-.002	.021	.003
t13	Positive Drift	58	.003	.018	.002
	Negative Drift	56	-.001	.022	.003
t14	Positive Drift	58	.000	.012	.002
	Negative Drift	56	.003	.022	.003
t15	Positive Drift	58	.000	.018	.002
	Negative Drift	56	-.003	.021	.003
t16	Positive Drift	58	.001	.017	.002
	Negative Drift	56	-.003	.025	.003
t17	Positive Drift	58	.001	.018	.002
	Negative Drift	56	.001	.028	.004
t18	Positive Drift	58	.000	.021	.003
	Negative Drift	56	.004	.014	.002
t19	Positive Drift	58	.002	.021	.003
	Negative Drift	56	-.002	.017	.002
t20	Positive Drift	58	-.003	.016	.002
	Negative Drift	56	-.003	.020	.003

t21	Positive Drift	58	.003	.015	.002
	Negative Drift	56	-.014	.122	.016
t22	Positive Drift	58	-.002	.023	.003
	Negative Drift	56	-.005	.017	.002
t23	Positive Drift	58	.003	.022	.003
	Negative Drift	56	-.002	.021	.003
t24	Positive Drift	58	.003	.017	.002
	Negative Drift	56	.000	.022	.003
t25	Positive Drift	58	.000	.023	.003
	Negative Drift	56	.000	.027	.004
t26	Positive Drift	58	.004	.014	.002
	Negative Drift	56	.001	.025	.003
t27	Positive Drift	58	.005	.019	.002
	Negative Drift	56	.003	.024	.003
t28	Positive Drift	58	.002	.021	.003
	Negative Drift	56	-.003	.021	.003
t29	Positive Drift	58	-.004	.016	.002
	Negative Drift	56	.001	.014	.002
t30	Positive Drift	58	-.002	.020	.003
	Negative Drift	56	.002	.019	.003
t31	Positive Drift	58	.001	.020	.003
	Negative Drift	56	-.012	.063	.008
t32	Positive Drift	58	.000	.018	.002
	Negative Drift	56	-.003	.027	.004
t33	Positive Drift	58	-.004	.023	.003
	Negative Drift	56	.001	.026	.003
t34	Positive Drift	58	-.003	.031	.004
	Negative Drift	56	.004	.021	.003
t35	Positive Drift	58	-.005	.019	.002
	Negative Drift	56	-.002	.021	.003
t36	Positive Drift	58	-.003	.025	.003
	Negative Drift	56	-.005	.018	.002
t37	Positive Drift	58	-.005	.020	.003
	Negative Drift	56	.004	.020	.003
t38	Positive Drift	58	.002	.025	.003
	Negative Drift	56	-.003	.023	.003
t39	Positive Drift	58	-.001	.017	.002
	Negative Drift	56	-.004	.019	.003
t40	Positive Drift	58	.002	.021	.003
	Negative Drift	56	-.016	.100	.013
t41	Positive Drift	58	-.003	.022	.003
	Negative Drift	56	-.001	.017	.002
t42	Positive Drift	58	.003	.013	.002

	Negative Drift	56	-.003	.024	.003
t43	Positive Drift	58	-.009	.024	.003
	Negative Drift	56	-.002	.026	.003
t44	Positive Drift	58	-.002	.020	.003
	Negative Drift	56	-.002	.019	.002
t45	Positive Drift	58	-.003	.018	.002
	Negative Drift	56	-.003	.028	.004
t46	Positive Drift	58	.003	.026	.003
	Negative Drift	56	.006	.023	.003
t47	Positive Drift	58	.006	.026	.003
	Negative Drift	56	.003	.028	.004
t48	Positive Drift	58	.004	.019	.002
	Negative Drift	56	.004	.027	.004
t49	Positive Drift	58	-.002	.022	.003
	Negative Drift	56	.002	.024	.003
t50	Positive Drift	58	.001	.014	.002
	Negative Drift	56	-.002	.019	.003
t51	Positive Drift	58	-.002	.021	.003
	Negative Drift	56	-.006	.019	.003
t52	Positive Drift	58	-.003	.019	.002
	Negative Drift	56	.001	.017	.002
t53	Positive Drift	58	-.002	.023	.003
	Negative Drift	56	-.008	.019	.003
t54	Positive Drift	58	-.004	.030	.004
	Negative Drift	56	.000	.018	.002
t55	Positive Drift	58	.001	.026	.003
	Negative Drift	56	.004	.016	.002
t56	Positive Drift	58	.001	.016	.002
	Negative Drift	56	-.004	.013	.002
t57	Positive Drift	58	.001	.019	.002
	Negative Drift	56	.003	.018	.002
t58	Positive Drift	58	.003	.021	.003
	Negative Drift	56	-.001	.015	.002
t59	Positive Drift	58	.005	.025	.003
	Negative Drift	56	.004	.018	.002

Source.....SPSS

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Table 4.3: T-Test – Negative and Positive drift.

Day		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
t1	Equal variances assumed	3.614	.060	-2.075	112	.040
	Equal variances not assumed			-2.059	91.027	.042
t2	Equal variances assumed	3.846	.052	-1.423	112	.157
	Equal variances not assumed			-1.423	111.644	.158
t3	Equal variances assumed	3.938	.050	-.189	112	.851
	Equal variances not assumed			-.187	97.425	.852
t4	Equal variances assumed	2.014	.159	-1.300	112	.196
	Equal variances not assumed			-1.295	103.935	.198
t5	Equal variances assumed	1.295	.257	-1.894	112	.061
	Equal variances not assumed			-1.882	95.327	.063
t6	Equal variances assumed	2.020	.158	-.005	112	.996
	Equal variances not assumed			-.005	89.633	.996
t7	Equal variances assumed	.030	.863	-.185	112	.854
	Equal variances not assumed			-.184	108.962	.854
t8	Equal variances assumed	2.435	.121	.725	112	.470
	Equal variances not assumed			.722	106.495	.472
t9	Equal variances assumed	.047	.829	-1.977	112	.051
	Equal variances not assumed			-1.980	111.784	.050
t10	Equal variances assumed	.702	.404	2.536	112	.013
	Equal variances not assumed			2.549	105.240	.012
t11	Equal variances assumed	1.065	.304	-.536	112	.593
	Equal variances not assumed			-.539	107.027	.591
t12	Equal variances assumed	3.164	.078	.014	112	.989
	Equal variances not assumed			.014	83.409	.989
t13	Equal variances assumed	.343	.559	1.107	112	.270
	Equal variances not assumed			1.104	106.743	.272
t14	Equal variances assumed	1.525	.219	-1.095	112	.276
	Equal variances not assumed			-1.086	86.415	.281

t15	Equal variances assumed	.273	.602	.732	112	.466
	Equal variances not assumed			.730	107.832	.467
t16	Equal variances assumed	1.455	.230	.946	112	.346
	Equal variances not assumed			.940	94.976	.350
t17	Equal variances assumed	2.413	.123	.072	112	.942
	Equal variances not assumed			.072	91.815	.943
t18	Equal variances assumed	2.889	.092	-1.276	112	.205
	Equal variances not assumed			-1.285	99.657	.202
t19	Equal variances assumed	.255	.614	1.050	112	.296
	Equal variances not assumed			1.054	108.607	.294
t20	Equal variances assumed	.046	.831	-.079	112	.937
	Equal variances not assumed			-.079	105.050	.937
t21	Equal variances assumed	2.890	.092	1.016	112	.312
	Equal variances not assumed			.999	56.719	.322
t22	Equal variances assumed	1.259	.264	.878	112	.382
	Equal variances not assumed			.883	104.162	.379
t23	Equal variances assumed	1.161	.283	1.232	112	.220
	Equal variances not assumed			1.233	111.985	.220
t24	Equal variances assumed	.448	.505	.774	112	.441
	Equal variances not assumed			.770	103.558	.443
t25	Equal variances assumed	.659	.418	.037	112	.970
	Equal variances not assumed			.037	107.922	.970
t26	Equal variances assumed	2.669	.105	.655	112	.514
	Equal variances not assumed			.649	85.222	.518
t27	Equal variances assumed	2.104	.150	.655	112	.514
	Equal variances not assumed			.652	103.145	.516
t28	Equal variances assumed	.502	.480	1.237	112	.219
	Equal variances not assumed			1.237	111.617	.219
t29	Equal variances assumed	1.342	.249	-1.681	112	.095
	Equal variances not assumed			-1.686	110.606	.095
t30	Equal variances assumed	.051	.822	-.952	112	.343
	Equal variances not assumed			-.953	111.990	.343
t31	Equal variances assumed	5.364	.022	1.470	112	.144
	Equal variances not assumed			1.448	65.322	.152

t32	Equal variances assumed	1.998	.160	.516	112	.607
	Equal variances not assumed			.513	96.747	.609
t33	Equal variances assumed	.317	.574	-1.105	112	.272
	Equal variances not assumed			-1.103	110.197	.273
t34	Equal variances assumed	.559	.456	-1.503	112	.136
	Equal variances not assumed			-1.513	101.253	.133
t35	Equal variances assumed	.797	.374	-.864	112	.390
	Equal variances not assumed			-.862	109.446	.391
t36	Equal variances assumed	.061	.806	.549	112	.584
	Equal variances not assumed			.552	104.571	.582
t37	Equal variances assumed	.035	.852	-2.402	112	.018
	Equal variances not assumed			-2.402	111.881	.018
t38	Equal variances assumed	.016	.900	1.150	112	.253
	Equal variances not assumed			1.151	111.928	.252
t39	Equal variances assumed	.005	.942	.870	112	.386
	Equal variances not assumed			.868	109.349	.387
t40	Equal variances assumed	2.110	.149	1.320	112	.190
	Equal variances not assumed			1.298	59.615	.199
t41	Equal variances assumed	1.340	.249	-.759	112	.449
	Equal variances not assumed			-.763	107.446	.447
t42	Equal variances assumed	7.886	.006	1.768	112	.080
	Equal variances not assumed			1.752	85.144	.083
t43	Equal variances assumed	.618	.433	-1.521	112	.131
	Equal variances not assumed			-1.518	110.357	.132
t44	Equal variances assumed	.000	.992	.110	112	.913
	Equal variances not assumed			.110	111.991	.913
t45	Equal variances assumed	2.677	.105	.059	112	.953
	Equal variances not assumed			.059	94.662	.953
t46	Equal variances assumed	.000	.997	-.607	112	.545
	Equal variances not assumed			-.608	111.146	.544
t47	Equal variances assumed	.141	.708	.591	112	.556
	Equal variances not assumed			.590	110.189	.557
t48	Equal variances assumed	1.756	.188	-.148	112	.882
	Equal variances not assumed			-.147	97.800	.883

t49	Equal variances assumed	.227	.635	-1.041	112	.300
	Equal variances not assumed			-1.040	110.673	.301
t50	Equal variances assumed	2.429	.122	.913	112	.363
	Equal variances not assumed			.908	100.953	.366
t51	Equal variances assumed	.026	.872	1.027	112	.307
	Equal variances not assumed			1.029	111.240	.306
t52	Equal variances assumed	.241	.624	-1.240	112	.218
	Equal variances not assumed			-1.242	111.682	.217
t53	Equal variances assumed	.015	.901	1.439	112	.153
	Equal variances not assumed			1.443	110.074	.152
t54	Equal variances assumed	1.817	.180	-.890	112	.375
	Equal variances not assumed			-.897	95.404	.372
t55	Equal variances assumed	4.889	.029	-.879	112	.381
	Equal variances not assumed			-.887	93.255	.377
t56	Equal variances assumed	.019	.892	1.794	112	.076
	Equal variances not assumed			1.801	107.959	.074
t57	Equal variances assumed	.098	.755	-.624	112	.534
	Equal variances not assumed			-.625	111.986	.534
t58	Equal variances assumed	.529	.468	1.217	112	.226
	Equal variances not assumed			1.224	103.126	.224
t59	Equal variances assumed	1.587	.210	.154	112	.878
	Equal variances not assumed			.155	104.317	.877

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Table 4.4: Unexpected Surprise in Earnings Test

Day	Drift	N	Mean	t	Sig. (2-tailed)
t1	Unexpected Increase	37	-.0034	-1.391	.169
	Unexpected Decrease	30	.0059		
t2	Unexpected Increase	37	-.0007	-.623	.536
	Unexpected Decrease	30	.0044		
t3	Unexpected Increase	37	.0005	-.345	.731
	Unexpected Decrease	30	.0023		
t4	Unexpected Increase	37	-.0010	-1.077	.286
	Unexpected Decrease	30	.0056		
t5	Unexpected Increase	37	-.0066	-2.197	.033
	Unexpected Decrease	30	.0090		
t6	Unexpected Increase	37	.0014	-.016	.988
	Unexpected Decrease	30	.0015		
t7	Unexpected Increase	37	-.0019	-.296	.768
	Unexpected Decrease	30	.0000		
t8	Unexpected Increase	37	.0019	1.213	.230
	Unexpected Decrease	30	-.0048		
t9	Unexpected Increase	37	-.0041	-1.549	.126
	Unexpected Decrease	30	.0034		
t10	Unexpected Increase	37	.0058	1.762	.083
	Unexpected Decrease	30	-.0025		
t11	Unexpected Increase	37	-.0029	-1.334	.187
	Unexpected Decrease	30	.0057		
t12	Unexpected Increase	37	-.0004	.696	.491
	Unexpected Decrease	30	-.0040		
t13	Unexpected Increase	37	.0026	.621	.537
	Unexpected Decrease	30	-.0011		
t14	Unexpected Increase	37	-.0014	-.665	.510
	Unexpected Decrease	30	.0021		
t15	Unexpected Increase	37	-.0033	-.378	.707
	Unexpected Decrease	30	-.0015		
t16	Unexpected Increase	37	.0033	1.220	.228
	Unexpected Decrease	30	-.0030		
t17	Unexpected Increase	37	.0021	-.788	.435
	Unexpected Decrease	30	.0066		
t18	Unexpected Increase	37	-.0005	-.829	.410
	Unexpected Decrease	30	.0034		
t19	Unexpected Increase	37	.0049	1.945	.056
	Unexpected Decrease	30	-.0042		
t20	Unexpected Increase	37	-.0039	-.475	.636
	Unexpected Decrease	30	-.0019		
t21	Unexpected Increase	37	.0028	-.642	.524
	Unexpected Decrease	30	.0066		

t22	Unexpected Increase	37	-.0004	1.094	.278
	Unexpected Decrease	30	-.0050		
t23	Unexpected Increase	37	.0016	-.271	.787
	Unexpected Decrease	30	.0028		
t24	Unexpected Increase	37	.0002	-.096	.924
	Unexpected Decrease	30	.0006		
t25	Unexpected Increase	37	.0005	.511	.611
	Unexpected Decrease	30	-.0024		
t26	Unexpected Increase	37	.0066	.571	.571
	Unexpected Decrease	30	.0035		
t27	Unexpected Increase	37	.0036	.540	.592
	Unexpected Decrease	30	.0008		
t28	Unexpected Increase	37	-.0002	.853	.397
	Unexpected Decrease	30	-.0042		
t29	Unexpected Increase	37	-.0048	-1.136	.260
	Unexpected Decrease	30	-.0006		
t30	Unexpected Increase	37	-.0046	-2.097	.041
	Unexpected Decrease	30	.0063		
t31	Unexpected Increase	37	.0031	1.793	.079
	Unexpected Decrease	30	-.0076		
t32	Unexpected Increase	37	-.0021	-.472	.639
	Unexpected Decrease	30	.0002		
t33	Unexpected Increase	37	-.0054	-1.547	.127
	Unexpected Decrease	30	.0026		
t34	Unexpected Increase	37	.0007	-1.081	.284
	Unexpected Decrease	30	.0052		
t35	Unexpected Increase	37	-.0058	-1.190	.239
	Unexpected Decrease	30	.0000		
t36	Unexpected Increase	37	.0006	.676	.502
	Unexpected Decrease	30	-.0031		
t37	Unexpected Increase	37	-.0048	-2.177	.033
	Unexpected Decrease	30	.0070		
t38	Unexpected Increase	37	.0042	1.138	.260
	Unexpected Decrease	30	-.0019		
t39	Unexpected Increase	37	-.0028	-.353	.725
	Unexpected Decrease	30	-.0011		
t40	Unexpected Increase	37	.0009	.301	.765
	Unexpected Decrease	30	-.0002		
t41	Unexpected Increase	37	-.0042	-.604	.548
	Unexpected Decrease	30	-.0019		
t42	Unexpected Increase	37	.0043	2.039	.046
	Unexpected Decrease	30	-.0058		
t43	Unexpected Increase	37	-.0062	-1.194	.237
	Unexpected Decrease	30	.0003		
t44	Unexpected Increase	37	-.0014	-.643	.523
	Unexpected Decrease	30	.0016		
t45	Unexpected Increase	37	-.0042	-1.227	.225
	Unexpected Decrease	30	.0011		

t46	Unexpected Increase	37	.0024	.383	.703
	Unexpected Decrease	30	.0005		
t47	Unexpected Increase	37	.0047	.182	.856
	Unexpected Decrease	30	.0036		
t48	Unexpected Increase	37	.0027	.967	.338
	Unexpected Decrease	30	-.0020		
t49	Unexpected Increase	37	-.0031	-.351	.727
	Unexpected Decrease	30	-.0013		
t50	Unexpected Increase	37	.0010	.888	.379
	Unexpected Decrease	30	-.0021		
t51	Unexpected Increase	37	.0010	1.267	.210
	Unexpected Decrease	30	-.0048		
t52	Unexpected Increase	37	-.0019	-.242	.810
	Unexpected Decrease	30	-.0008		
t53	Unexpected Increase	37	.0024	1.434	.157
	Unexpected Decrease	30	-.0046		
t54	Unexpected Increase	37	-.0025	-.481	.632
	Unexpected Decrease	30	.0005		
t55	Unexpected Increase	37	-.0049	-1.829	.072
	Unexpected Decrease	30	.0045		
t56	Unexpected Increase	37	.0015	.558	.579
	Unexpected Decrease	30	-.0007		
t57	Unexpected Increase	37	.0014	-.005	.996
	Unexpected Decrease	30	.0014		
t58	Unexpected Increase	37	.0023	.633	.529
	Unexpected Decrease	30	-.0001		
t59	Unexpected Increase	37	.0052	.379	.706
	Unexpected Decrease	30	.0031		

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Table 4.5: Expected Surprise in Earnings Test

Day	Drift	N	Mean	t	Sig. (2-tailed)
t1	Expected Increase	21	-.0083	-1.968	.053
	Expected Decrease	26	.0018		
t2	Expected Increase	21	-.0100	-2.394	.029
	Expected Decrease	26	.0024		
t3	Expected Increase	21	-.0012	-.010	.992
	Expected Decrease	26	-.0012		
t4	Expected Increase	21	-.0024	-.772	.444
	Expected Decrease	26	.0027		
t5	Expected Increase	21	-.0013	-.110	.913
	Expected Decrease	26	-.0006		
t6	Expected Increase	21	-.0039	-.188	.851
	Expected Decrease	26	-.0028		
t7	Expected Increase	21	-.0036	.016	.987
	Expected Decrease	26	-.0036		
t8	Expected Increase	21	-.0007	-.277	.783
	Expected Decrease	26	.0010		
t9	Expected Increase	21	.0003	-1.237	.225
	Expected Decrease	26	.0059		
t10	Expected Increase	21	.0027	2.132	.039
	Expected Decrease	26	-.0045		
t11	Expected Increase	21	.0053	1.528	.135
	Expected Decrease	26	-.0015		
t12	Expected Increase	21	-.0060	-1.420	.162
	Expected Decrease	26	-.0007		
t13	Expected Increase	21	.0027	1.375	.176
	Expected Decrease	26	-.0018		
t14	Expected Increase	21	.0016	-.746	.460
	Expected Decrease	26	.0046		
t15	Expected Increase	21	.0059	1.750	.087
	Expected Decrease	26	-.0039		
t16	Expected Increase	21	-.0035	-.086	.932
	Expected Decrease	26	-.0030		
t17	Expected Increase	21	.0002	.809	.423
	Expected Decrease	26	-.0053		
t18	Expected Increase	21	.0005	-.988	.330
	Expected Decrease	26	.0050		
t19	Expected Increase	21	-.0030	-.851	.399
	Expected Decrease	26	.0012		
t20	Expected Increase	21	-.0014	.418	.678
	Expected Decrease	26	-.0037		
t21	Expected Increase	21	.0025	1.147	.262
	Expected Decrease	26	-.0371		
t22	Expected Increase	21	-.0035	.145	.886
	Expected Decrease	26	-.0046		
t23	Expected Increase	21	.0055	1.754	.087
	Expected Decrease	26	-.0073		
t24	Expected Increase	21	.0069	1.219	.229
	Expected Decrease	26	-.0012		

t25	Expected Increase	21	-.0014	-.446	.658
	Expected Decrease	26	.0020		
t26	Expected Increase	21	-.0014	-.007	.994
	Expected Decrease	26	-.0013		
t27	Expected Increase	21	.0083	.509	.613
	Expected Decrease	26	.0047		
t28	Expected Increase	21	.0056	1.107	.274
	Expected Decrease	26	-.0016		
t29	Expected Increase	21	-.0032	-1.174	.247
	Expected Decrease	26	.0019		
t30	Expected Increase	21	.0036	1.373	.180
	Expected Decrease	26	-.0034		
t31	Expected Increase	21	-.0035	.695	.491
	Expected Decrease	26	-.0172		
t32	Expected Increase	21	.0028	1.108	.274
	Expected Decrease	26	-.0057		
t33	Expected Increase	21	-.0027	-.108	.914
	Expected Decrease	26	-.0018		
t34	Expected Increase	21	-.0108	-1.184	.246
	Expected Decrease	26	.0025		
t35	Expected Increase	21	-.0042	.023	.982
	Expected Decrease	26	-.0044		
t36	Expected Increase	21	-.0087	-.250	.803
	Expected Decrease	26	-.0073		
t37	Expected Increase	21	-.0054	-1.180	.245
	Expected Decrease	26	.0007		
t38	Expected Increase	21	-.0023	.381	.705
	Expected Decrease	26	-.0051		
t39	Expected Increase	21	.0010	2.028	.050
	Expected Decrease	26	-.0082		
t40	Expected Increase	21	.0032	1.282	.210
	Expected Decrease	26	-.0344		
t41	Expected Increase	21	-.0018	-.375	.710
	Expected Decrease	26	.0009		
t42	Expected Increase	21	.0019	.333	.741
	Expected Decrease	26	.0002		
t43	Expected Increase	21	-.0150	-1.230	.225
	Expected Decrease	26	-.0051		
t44	Expected Increase	21	-.0025	.726	.472
	Expected Decrease	26	-.0066		
t45	Expected Increase	21	-.0014	.876	.386
	Expected Decrease	26	-.0087		
t46	Expected Increase	21	.0053	-.893	.378
	Expected Decrease	26	.0128		
t47	Expected Increase	21	.0076	.679	.501
	Expected Decrease	26	.0019		
t48	Expected Increase	21	.0056	-.796	.430
	Expected Decrease	26	.0119		
t49	Expected Increase	21	-.0014	-.969	.338
	Expected Decrease	26	.0058		
t50	Expected Increase	21	.0020	.471	.640
	Expected Decrease	26	-.0008		

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c1	Expected Increase	21	-.0077	-.036	.972
	Expected Decrease	26	-.0074		
c2	Expected Increase	21	-.0058	-1.866	.069
	Expected Decrease	26	.0027		
c3	Expected Increase	21	-.0108	.238	.813
	Expected Decrease	26	-.0122		
c4	Expected Increase	21	-.0078	-.956	.344
	Expected Decrease	26	-.0013		
c5	Expected Increase	21	.0102	1.001	.323
	Expected Decrease	26	.0036		
c6	Expected Increase	21	.0012	2.356	.023
	Expected Decrease	26	-.0070		
c7	Expected Increase	21	.0002	-1.029	.309
	Expected Decrease	26	.0050		
c8	Expected Increase	21	.0050	1.005	.323
	Expected Decrease	26	-.0017		
c9	Expected Increase	21	.0039	-.235	.816
	Expected Decrease	26	.0052		

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