THE EFFECT OF PROFIT WARNING ANNOUNCEMENT ON THE SHARE PRICES OF COMPANIES LISTED IN NAIROBI SECURITIES EXCHANGE

MEDLIN NJOKI MBIYU

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

NOVEMBER, 2017

DECLARATION

This research project is my original work and has not been presented to any other university for the award of a degree.

Signed_____Date _____

MEDLIN MBIYU

D63/84009/2016

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

Signed_____Date _____

PROF. ADUDA

DEDICATION

This research project is dedicated to my parents, who taught me that the best knowledge is that which is obtained for its own sake and that there is no end to learning.

ACKNOWLDGEMENT

First, I acknowledge my supervisor, Prof. J. Aduda, for his guidance, forthright criticism and suggestions that helped me in conducting this study. I am deeply indebted to him for his input in this Project.

I also appreciate the staff and lecturers in the school of business, University of Nairobi, for the role they played in enabling me pursue my dream of obtaining a Degree of Master of Science in Finance.

Special gratitude goes to my family, my biggest cheerleaders who believed in me, there are not enough words to express how much their encouragement has motivated and uplifted me when times got tough.

I also cannot forget to thank my fellow classmates with whom we journeyed together in class, during exams and out of class. The struggles and triumphs resulted in long lasting connections and a better learning experience which I will carry with me for life.

For my friends and colleagues, your committed inquiries and constant rallying in regards to the pursuit of this degree gave me the added kick I needed to continue and make a reality of this dream. I thank you.

For my mother, who experiences my successes and failures as they were her very own, I salute you and invite you to share in this key step as well.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

US: United States

MPS: Market Prices Per Share

GDP: Gross Domestic Product

NSE: Nairobi Securities Exchange

ETS: Electronic Trading System

CMA: Capital Markets Authority

NBK: National Bank of Kenya

NPL: Non Performing Loans

EMH: Efficient Market Hypothesis

EBIT: Earnings Before Interest and Tax

EPS: Earnings Per Share

EU: European Union

CAR: Cumulative Abnormal Returns

AR: Abnormal Returns

CAPM: Capital Asset Pricing Model

OLS: Ordinary Least Squares

SCAR: Standardized cumulative abnormal returns

ABSTRACT

Profit warning is among the most material market information where investors are required to be informed even before making their investment decisions. In the last five years, different companies have been issuing profit warnings in Nairobi Securities Exchange highlighting poor performance. The objective of this study was, therefore, to determine the relationship between profit warning and share prices of companies listed in Nairobi Securities Exchange. This study used descriptive design and an event study methodology. The population comprised of all the 68 listed companies in Nairobi Securities Exchange. The sample size of the study was 28 companies that have issued profit warnings in the last five years (2012-2016). Through the event study methodology, the study identified the event (profit warning), calendar date of the event (profit warning announcement date), events window and estimation period. The study used statistical methods to compute the abnormal returns after which the results were analyzed to obtain the Cumulative Abnormal Returns. T-test statistic was used to measure the statistical significance of the abnormal returns, cumulative abnormal returns and standardized cumulative abnormal returns. The study results indicated that there were high negative and significant abnormal returns and cumulative abnormal returns after profit warning announcements. The study also found that the market takes too long to recover from the effect of profit warning announcements on share prices. The abnormal returns on day one, second day, third day, fourth day, fifth day, sixth day and seventh day were highly negative and statistically significant. The study established that one day before profit warning announcement, the abnormal returns were significant. This shows the possibility of insider trading or leakage of information before the profit warning announcement. The study concludes that profit warning announcements have a negative effect on share prices in companies listed in Nairobi Securities Exchange. This study recommends that the Capital Market Authority should come up with policies to prevent insider trading in Nairobi Securities Exchange. Due to the negative effect of profit warning announcements on share prices, firms may shy away from making complete disclosure of their profits through profit warnings. This is due to the fear that the share market and investors will react negatively to information on profit warning announcements. In addition, firms that have issued more than one profit warnings in the last five years should seek to identify factors affecting their performance and develop strategies to ensure improvement of performance. This will help in ensuring that there are no frequent abnormal returns in their firms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Globally, the capital market plays a major role in countries' financial systems through the facilitation of growth in all sectors of an economy by channeling surplus funds to economic areas with deficits (Wang & Zhang, 2011). Therefore, financial disclosure of listed companies not only ensures efficient operational proficiency of the capital market, but also provides important information to investors. Investors usually make investment decisions based on the information that is available to them. Many investors and analysts rely on the information on profit in determining whether to hold, buy or sell shares of a particular company. Profit warning gives an indication of how the firm is performing in the current year, as compared to the previous years. It also gives an indication of earning that the investors are expected to make and general information about the financial performance of a given company (Shahid & Khan, 2014). Investors are more willing to invest in capital markets if they are assured that their orders are carried out fairly, efficiently and that market intermediaries including listed companies can be relied on to safeguard their interests. Their expectation is that a high return will be brought from their investment in the future and use this to compensate for the risks and expenses that are related (Nyabundi, 2013). In this regard, most investors will take steps towards determining the true value of firm and as a result will out rightly need substantive, credible and time value relevant information of a firm.

In explaining the influence of profit warnings on share prices, the study will be anchored on three theories: efficient market theory, signaling theory and Agency theory. According to Fama (1970), in an efficient market, the security price should mirror all information accessible to the public, and the value of the security will change the moment new information comes to the market. According to signaling theory by Spence (1973), profitable firms benefit from announcing their competitive advantage by disclosure of important information to the market through more and better communication. According to Ross (1973), agency relationship exists when two parties, one referred to as the agent acts on behalf of the other party referred to as the principal in matters requiring decision making. The activities that a firm engages in have a direct effect on its share returns, as a result the agents are expected to release any information that will have an impact on the company's earnings to the principals immediately.

The unsecured announcement of profit warnings is regulated differently in different countries. In the United States (US), the listed companies were required to make a disclosure of their profit warnings selectively before August 2000, Unlike Tanzania, Uganda and Rwanda, in Kenya, it is a legal requirement by the Capital Markets Authority that listed companies disclose a profit warning when they expect the projected earnings to fall by 25% in comparison to the earnings of the previous year (Nairobi Securities Exchange, 2017). Failure to do so may result in sanctions as some firms have been punished before. For example, in 2012 CMC Motors was penalized by capital markets authority for failing to comply with some corporate governance requirements as required by the CMA Act. As a result, over the years listed companies in Kenya have been announcing profit warnings. In the year 2014, 11 companies listed in Nairobi Securities

Exchange announced profit warnings. In the year 2015, the number of companies that issued profit warnings increased to 18, which was the same number in the year 2016 (Anyanzwa, 2017). After profit warning announcements, investors may decide to sell their shares, which may negatively affect the share prices of a company.

1.1.1 Profit warning Announcements

Profit warning refers to an attempt by a corporation to share information on earnings disappointments with investors or investment community. According to Lusweti (2014), a profit warning is a statement released by an organization advising the capital market and investors that its profits will be below the expected profits. The disclosure of information through profit warnings leads to an improvement in transparency and reducing asymmetry of information in the share market, which may subsequently lead to re-evaluation of share prices by helping investors to make the right choices. Maina (2014) indicates that profit warning announcement is one of the few occasions that force a company to reveal confidential and price sensitive information to the public. Decrease in earnings in an organization may be in terms of earnings per share, net profits, and profit before tax and sales.

Different countries around the world have different policies guiding profit warning announcements. In the United States, before the year 2000, companies listed in the share market were allowed to selectively announce their profit warnings. In China, companies listed in the mainland China are under mandatory regulation to announce profit warnings while companies listed in Hong Kong Share Exchange fall under voluntary disclosure

rule (Wang & Zhang, 2011). In Kenya, listed companies are required to make profit warning announcement if the profit of the company is expected to be lower by over twenty five percent as compared to the previous year.

Profit warnings can be classified as qualitative or quantitative. Quantitative warning is an announcement that entails use of numbers, which give the actual number of estimated earnings or interval. Qualitative warning, shows that that earnings will fall below the expectations without them giving a specified estimate of the new earnings. Wang and Zhang (2011) identifies two main reasons why companies tend to issue profit warnings, one is to avoid shareholders lawsuits for failure to provide timely negative information and the second is to manage the reputational costs of the company. It also helps to reduce the expectations gap that shareholders maybe having and also reduce the market impact in the security price.

1.1.2 Share prices

A share represents a unit of ownership in a corporation/Company. A share price is simply the value of an individual share in a number of commercial shares of a trading company. A share price is the maximum amount a person has agreed to pay for a share, or the lowest amount it can be bought for. Maina (2014) stated that the goal of every investor is to obtain a fair to high return from their investment. These returns are measured in terms of dividends paid or capital gains/losses. In most cases, dividends are paid by firms at the end of the year and thus investors focus mainly on share price movements of the shares they hold to assess their returns.

The share price in the secondary market is either overpriced or underpriced which later determines the shares return. Investors buy undervalued share with the expectation that in future the share prices will usually rise up leading to the realization of capital gains. The investors will sell overvalued share if there is a speculation that the market prices will fall in the future in order to avoid future losses. Using the efficient market hypothesis, the share prices reflects all information that is available concerning the share and provides an unbiased estimate of the share return. The share value can be estimated by the investors using fundamental, technical or psychological analysis. Focusing on the fundamental analysis, Shahid and Khan (2014) defines this share value as the justified market price which expresses the real worth of a share.

Due to random valuations of firms by public capital markets, managers provide the information known by them alone to the capital markets to correct the wrong valuations since shares value is dependent on information. Market price based financial performance measures have proved to be accurate method to measure value for firms (Gathoga, 2016). Relative levels change in price earnings ratio signal that the market is changing its expectations about the future earnings potential of a firm. The capital gains and the dividend paid are the main measure of the shares returns. The changes in the market prices per share (MPS) determine the share return which could be either positive or negative returns (Anyanzwa, 2017).

The price at which a share is currently trading is known as the market price of the share. The market prices change for a certain depending on the demand and supply of a given share. Investors and analysts usually receive information that affects how they perceive a given share. Negative information may cause the price to go down and positive

information for example growth in earning of a company, or a profitable business venture that a company is pursuing, may be perceived as positive information and would lead to increased demand for the share (Lusweti, 2014). In Kenya, The Nairobi Securities Exchange usually releases daily share prices of the listed companies at the exchange and the variation from the previous day share price.

Share prices in the share market are normally affected by a wide range of factors. In the United Arab Emirates, Al-Tamimi, Alwan and Rahman (2016) found that Gross Domestic Product (GDP), inflation (consumer price index) and interest rates had a significant influence on share prices. In Pakistan, Shahid and Khan (2014) found that firm specific factors such as asset growth, return on assets, dividend yield and organizational size had a significant influence on share prices. In Kenya, Kitatia, Zablonb and Maithya (2015) indicates that inflation, foreign exchange rate and interest rates has a significant influence share prices in Nairobi Securities Exchange.

1.1.3 Relationship between Profit Warnings and Share Prices

Share markets always react to different types of corporate announcements including profit warnings, which later reflect in share returns. The efficient market hypothesis indicates that the share prices should wholly and instantly reflect all information available in the public domain. In addition, for investors to make informed decisions, information on a company performance in terms of profitability should be available (Wang & Zhang, 2011).

Profit warnings announcement comes before the annual earnings announcements and hence prepares the investor on what to expect as the actual earnings. The signaling effect makes the market to react in accordance to any relevant information that is released to the public (Shahid & Khan, 2014). Disclosure of information enhances efficiency in the market through provison of informed traders with costless information that ensures efficiency in the market. The earnings of the company determine the shares returns, since the earnings are the main performance measure of the firm and its prospects for growth and success in the future. When a company issues an announcement to warn investors about its future performance the market responds as reflected by the market prices and the returns of the shares (Nyabundi, 2013).

Studies conducted around the world show different findings on the effect of profit warnings on share prices. In Netherlands, Heesters (2011) found that profit warnings in the Dutch Share Market were followed by a decrease in share prices in the short-run, which continued to decrease up to a period of one year. Similarly, Tumurkhuu and Wang (2010) found that share prices in the United States and in the European Union responded negatively to profit warning announcements. However, qualitative warnings had more negative effect as compared to the quantitative warnings. Further, YinKhelifa, Benamraoui and Saadouni (2017) established that that profit warnings has a significant effect on share prices in Hong Kong Share Exchange. In Kenya, Kiminda, Githinji and Riro (2014) found that profit warnings have a negative and significant effect on share prices, for the period of post-warning and pre-warning and during the day of announcement.

1.1.4 The Nairobi Securities Exchange

NSE began when Kenya was still under British colonial rule and this was in 1954. It began as an overseas share exchange market and had the permit from the London market. NSE has membership in the African Share Exchanges Association. In terms of volumes of trading, it is the fourth largest share exchange market in Africa and the fifth in terms of the capitalization of the market as a percentage of Gross Domestic Product (GDP). The Exchange works in association with the Dar es Salaam Share Exchange and the Uganda Securities Exchange, including cross listing of numerous equities. In 2016, Electronic Trading System (ETS) was commissioned and is used in trading.

Companies that are listed at the NSE are mandated to disclose their earnings to the public informing them about their financial performance. The Kenyan Capital Markets Authority (CMA) through legal notice number 60 of 2002 in The Requirements Public Provisions, & Schedule (2002) made profit warning announcement a mandatory disclosure. The notice stated that when a material discrepancy of the forecasted earnings for the current year and the earnings level in the previous financial year arises, a firm shall disclose such information by making a public announcement. The material discrepancy refers to the earnings being at least 25% lower in the current year to date than the earnings level in the previous financial year.

To ensure compliance with the CMA regulations, firms that predict their earnings will be less than 25% of the previous year's earnings have been keen to issue profit warnings announcements. In the year 2015, the total number of profit warnings amounted to eighteen and the same number issued profit warnings in the year 2016. One of the major factors contributing to the increased number was due to the weakening Kenya Shilling

that led to many firms incurring foreign exchange losses. The firms that were adversely affected by the devaluation of the currency included Car and General, East African Cables among others (NSE, 2016). Other firms that issued profit warnings include Standard Chartered Bank, Uchumi Supermarket, Express Ltd, Standard Group, Atlas Development, TPS East Africa, Mumias Sugar, BOC, Liberty Holdings, Pan African Insurance, BRITAM, Home Africa and Kurwitu Ventures.

Failure to comply with the mandatory requirement has led to companies being penalized by the CMA. Examples of listed companies in Kenya that have failed to comply with the CMA regulations include CMC motors in 2012, Centum in 2013 and National Bank of Kenya (NBK) in 2016 who issued the announcement on a day before the actual earnings announcement (CMA, 2016). Competition, the global economic environment, company reconstruction, business re-engineering, cash flow problems, terrorist threats, epidemics, business interruptions and accounting adjustments were the major reasons highlighted in the issue of profit warnings. The profit warnings announcements have led to the decline in the shares returns. This has adversely affected the volume of shares traded which decreased by 7% in 2015 compared to 2014 and a low market capitalization which declined by 10.1% in 2015 compared to 2014. The NSE has continued to experience a looming bearish market (NSE, 2016).

1.2 Statement of the problem

Profit warning is among the most material market information where investors are required to be informed even before making their investment decisions. Disclosure of profit warning have a negative impact on share price of the respective companies that are listed and this in turn affects the liquidity of shares in the share market. This is attributed

to poor performance of listed firms. Profit warning restricts listed companies from raising or tapping additional capital through equity financing in form of a rights issues. This warning affects the investors in relation to investment decisions where they may lose confidence in the market and alternatively put their money somewhere else or even withdrawing from the market.

In the last five years, different companies have been issuing profit warnings in Nairobi Securities Exchange highlighting poor performance. In the year 2013, 11 companies listed in Nairobi Securities Exchange issued profit warnings. In the year 2015, the number of companies whose profits decreased by more than 25% in Nairobi Securities Exchange increased to 18, from 11 in the year 2014. The banking sector has since last year been facing challenges, specifically after the introduction of interest rate capping by the government of Kenya (Anyanzwa, 2017). In one day, listed commercial banks lost Ksh. 47 billion as a result of foreign investors retreat. In November 2016, Family Bank issued a profit warning indicating that its profits were expected to decrease by more than 25 per cent, an issue that was attributed partly to interest rate capping (Ngugi, 2016). In June 2017, the Capital Market Authority fined the National Bank of Kenya for failing to issue profit warnings for its less more than 25 per cent decrease in profits in the year 2016. In the year 2015, the Standard Chartered bank also issued profit warnings as a results of poor performance attributed to an increase in Non-Performing Loans(NPL) portfolio in the institution. Similarly, companies that issue profit warnings also experienced a decrease in their share prices (Ngugi, 2016).

Various studies have been conducted in Kenya on profit warnings and share prices. For instance, Lusweti (2014) researched on impact of profit warning on share price of companies that are listed at the NSE and found a negative and significant effect of profit warning on share prices. In addition, Maina (2014) carried out a study to investigate whether profit warnings affect share returns at the NSE and established that although profit warnings had a significant effect on share returns it significantly depended on the sectors in which the companies belonged. Also, Kamau (2016) researched on the effect of the announcement of profit warning share returns of firms listed at the Nairobi Securities Exchange and found that profit warnings had a negative influence on share prices. Lusweti's (2014) study covered a period of 5 years starting from 2008 to 2013. Maina's (2014) study covered a period of 10 years beginning form 2003 to 2013. Four years after this period there has been significant changes in the economy that could have affect share prices such as the introduction of interest rate capping policy. Despite the poor performance of some of the companies listed in Nairobi Securities Exchange in the last five years, there are no current studies showing the impact of profit warnings on the share prices of companies listed in Nairobi Securities Exchange. This study therefore sought to answer the question: what is the effect of profit warning on share prices of companies listed in Nairobi Securities Exchange.

1.3 Objective of the study

The objective of the study is to determine the relationship between profit warning announcement and share prices of companies listed in Nairobi Securities Exchange

1.4 Value of the study

The findings of this research study may be of benefit to academicians and other researchers, investors at the NSE, capital markets authority as a regulatory body and the managers of the listed companies in the NSE. To the capital markets authority, the study may be importance as the findings may help the body formulate regulatory policies to ensure proper allocation of the economy's resources. The study may further assist the authority to evaluate and understand effect of profit warning on the share prices in the share market, which may inform the review of various policies on profit warning announcement. To the investors, the research may be of great value because they may use the results to make and implement important investment decisions.

To academicians and other researchers, this study helps to fill the existing research gap on the impact of profit warning on share prices of companies listed in Nairobi Securities Exchange. Consequently, the study highlights the different effects profit warning has on share prices and what causes them hence contributing significantly to the already existing body of knowledge and theory building. It thus acts as a point of reference for future studies in the field of finance and economics especially in the concept of share returns and profit warnings.

Listed companies in Nairobi Securities Exchange play a major role not only in the capital market, but also in the National economy. Therefore, the management of companies that are listed in the NSE, the research is vital in that it helps them in making decisions regarding capital rising through equity as well as how to increase investor confidence generally while increasing returns.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter encompasses of literature review on the impact of profit warning announcement on share prices among listed companies, both globally and locally. Specifically, the chapter comprises of a theoretical framework followed by empirical review and summary of the literature review.

2.2 Theoretical Literature Review

Over the years, various theories have been developed to explain share market behavior and factors that affect share prices. This study will be anchored on four theories: efficient market hypothesis theory, agency theory, signaling effect theory and the random walk theory.

2.2.1 Agency Theory

The agency theory can be traced back to the year 1972 when Stephen Ross developed a paper building on the theory of a firm (Ross, 1973). In the year 1976, Michael Jensen and William Meckling developed the agency theory so as to explain the importance of separating the ownership of firms from control. According to Ross, agency relationship exists where two parties one called agent acts on behalf of the other "principal" in a particular domain of decision problems. In most cases, an agency problem arises where the agent acts in a manner inconsistent with the expectation of the principals. With this conflict of interest there was need to separate ownership of firms from control (Mohamed, 2010).

There are several reasons why principal agent relationship exist. First, shareholders (principals) are at times too many and are geographically dispersed hence they may not be available to actively manage the firm. Secondly, these shareholders may not be possessing the necessary skills required to run the organization and thus the need to engage specialized personnel to run the companies. To minimize the agency problem, Jensen and Meckling (1976) indicate that firms must be willing to incur agency costs to monitor the agents.

The activities that firm agents engage in have a direct impact on a firm's share returns because it can either increase or decrease the returns that investors expect. When investors engage agents, they expect that the agents will engage in activities that will maximize their wealth. In the quest to fulfill their agency duties, CMA legal notice no. 60 of 2002 requires agents to notify the shareholders and the market of any material changes in the firm that will affect the returns investors expect. For instance, whenever a company is expecting its profits to decrease by more than 25 per cent, the management are required to issue profit warnings as a way of fulfilling their (agents) duties.

2.2.2 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) is a financial economics theory that indicates that the price of an asset fully reflects all the available in the market. The theory was founded by Professor Eugene Fama who indicated that shares will always trade at value which is fair, which makes it difficult for the investors to sell their shares at prices that are inflated prices or purchase of shares that are undervalued. As a result, the theory indicates that it is therefore impossible to beat the overall market by use of expert

selection of share or market timing, and that investors can only get returns that are higher by buying riskier investments or by chance (Bulkley & Herrerias, 2003).

Fama (1970) proposed three variants of hypothesis: strong form, weak form and semi strong form. He argues that the market is always information efficient and hence an investor cannot consistently achieve returns where there is an excess of the average return in the market on a basis that is risk-adjusted, assuming that available information during the investment is made. Hypothesis that is of a weak form indicates that the prices of assets traded in the market (property, share or bonds) reflect the information available to the public. The information available in the public domain includes historical price trend. Hypothesis of a strong form indicates that the prices of assets traded in the market also reflect the hidden information and information not available in the public domain (Collett, 2004). In addition, the semi strong form of the hypothesis indicates that the prices of the traded assets reflect information available in the public and the prices change instant change to reflect information in the public domain, which may include annual earnings figures or companies' announcements.

2.2.3 Signaling Effect Theory

Signaling theory is used in the description of a behaviour that exists between two parties that have an access to information that is different. In this theory, the sender (firm) chooses how to relay some information to the recipients (stakeholders) and these recipients choose how to interpret the signals. From previous studies done, profit warnings serve as bad news to investors and therefore, when a company issues a profit warning, such warnings serve as signals to the market that, share returns shall be lower in the coming days. However, Kiminda, Githinji & Riro (2014) argues that a good firm can

15

separate itself from a bad firm by issuing a costly signal and attracting scrutiny from the market and therefore we consider profit warning announcements as an example of such a costly signal.

According to Maina (2014), signaling theory is beneficial if it is true because the market must be able to rely on this information and therefore a firm's management should first possess the information and prospects as well as have incentives to convey this information to the market. Signaling theory is based on the assumption that information to all parties is not available at the same time. In the same way, dividends serve as a signal of better returns to the investors as per dividend signaling theory, profit warning come as a shock to some investors and therefore in response to the information, researches done by Maina (2014) and Kamau (2016) among others have found that profit warnings lead to negative returns.

2.2.4 Random walk theory

According to Fama, (1970), the random walk theory proposes independence in share prices and the past trend cannot be used to predict the future share price. According to the theory, future share prices are random and cannot be determined earlier. This happens where the market is efficient and the current prices of the securities unbiased estimates of their intrinsic values. The theory holds that the price moves in a random manner predicting future prices is not possible (Heesters, 2011).

However, although share prices are determined by factors such as size of the firm and dividend policies, investors rely more on the information released in the security's market in order to make rational decisions. In case there is a change in the share prices, investors

are keen to ensure that they maximize their wealth and make decisions that are rational in order to minimize losses (Sehgal & Bijoy, 2015). This theory links to the study in that it is difficult to predict the share price after profit warnings are given as the share prices are random.

2.3 Empirical Literature Review

Profit warnings can be defined as forecasts on earnings that are made by the management and are used to warn on an expected shortfall in earnings in relation to the relevant standards once the actual earnings report has been made, the management releases its profit warning (Afego, 2013). The earnings shortfall may be in terms of net profits, sales, earnings before interest and taxes (EBIT), and earnings per share (EPS). The earnings are made at the end of a financial period but should be before quarterly and annual reports of the earnings that are required.

Various past studies have highlighted the relationship between profit warnings and share prices. These studies explain how profit warnings affect share prices of listed companies. Tserandash and Xiaojing (2010) researched on profit warning relationship with share returns in European Union (EU) markets and the results indicated that profit warning had an influence that was negative on share return in the EU area. Further, the more negative effects were brought about by qualitative warnings on the share returns of the companies as compared to quantitative warnings.

Sponholtz (2008) looked into the content of information on annual earnings announcements in the Danish share. The research indicated that there was a significant reaction in the abnormal price in the surrounding periods of the announcements. Unlike

the EMH, the reactions in abnormal prices persist for only several days after making of the announcement, and this suggested that the Danish share market is likely not to be information efficient. In Netherlands, Heesters (2011) carried out a study on share returns following profit warnings in Dutch Share Market. A sample size of 117 listed firms that were first-time profit warnings at Euronext Amsterdam between 2001 and 2007 were used. The results of the study showed that large abnormal negative returns follow profit warnings in the short-term. Abnormal returns will continue drifting downwards in the medium term for an entire twelve month post-event period and this phenomenon is attributed to market under reaction.

In Pakistan, Qureshi, Abdullah and Imdadullah (2012) conducted a study on share prices' variability around earnings announcement dates at Karachi Share Exchange. CAR Analysis was used in the study to analyze earnings announcement impact over the share returns around announcement dates. The findings suggested that Karachi Share Exchange experiences share returns that are abnormal during market earnings announcement dates and for categories that are different thus an indication that efficiency in market hypothesis does exist in Pakistani market. This points out the existence of information dissemination inefficiency in the market.

In India, Sehgal and Bijoy (2015) researched on share price reactions to earnings announcements. About 469 companies were used as a source for data and the period of study was from December 2002 to December 2011. The data covered 37 quarterly periods. 32 out of the 37 quarters indicated significant pre-event abnormal returns, which maybe as a result of superior analysis that is coupled with information asymmetry. Out of the 37 quarters, 35 quarters implied a strong rejection of an efficiency that is semi strong

in regard to earning announcements. A strong continuation pattern in earnings was present and it suggested that investors were in a position to anticipate the informational contents of earnings. Abnormal returns that are Post-event are higher for financial verses non-financial closing quarters.

In Nigeria, Afego (2013) conducted a research on share price response to earnings announcements in Nigerian Share Market. The event study method was used. The findings indicated that abnormal returns that were cumulative have magnitude that is dominated by reactions that are significant 20 days prior to the date of release of the earnings. This indicates that a market portion reaction can be due to private acquisition and probably information abuse by the insiders. Due to the downward drift of the abnormal cumulative returns that are persistent 20 days after announcement, there exists an inconsistency with the efficient markets hypothesis.

In Ghana, Owusu, Gyau and Amaning (2016) carried out a study on the effect of earnings announcement on share price of manufacturing companies on the Ghana Share Exchange. The study adopted an event study methodology. With a 21 days window and a 60 day estimation period, the researchers used the Standardized Excess Return approach which corrected for most of the challenges associated with intercompany aggregation of shares. Using the Single Index and Risk Adjusted Returns Model the study found out that there was no effect on share prices thus the Ghana Share Exchange lacks efficiency in the semi strong form.

In Kenya, Maina (2014) did a research on the effect of profit warnings on share returns at the NSE and used descriptive design for data analysis. The findings indicated that the significance of returns reaction to the profit warning announcements at the NSE is dependent on the company issuing the announcement. In addition, Mohamed (2010) researched on the effect of earning announcements on the share prices of 45 companies that declared earnings between January 2004 and December 2008. The study established that there was a negative statistical significance of abnormal returns in the post and pre-earnings announcements period.

Gathoga (2016) carried out a research on the impact of profit warnings announcement on share returns of listed companies in East Africa. The population of the study was 35 companies that issued profit warnings between the year 2011 and 2015. The study used Event study methodology in the analysis of data. The findings of the study established that profit warning announcements generally result in decrease in actual returns and expected returns of the companies making profit warning announcements. However, while three quarters of the companies studied experienced a decrease in share prices around the announcement date, one quarter of the companies experienced an increase in share prices after profit warnings announcements.

In addition, Muite (2012) carried out a study on the effect of profit warning announcements on share prices at the NSE. 59 companies that were quoted in the NSE were focused on in this study and samples were drawn from companies where profit warnings had been issued. The results indicated that profit warning has a negative effect on the share return in the NSE and significant for the period of post-warning and pre-warning and on the day of actual announcement. A more significant effect was realized

during the three day period after profit warning. In addition, the study found that leakages of information before profit warning announcements led to a decrease in share prices.

Lusweti (2014) conducted a study on impact of profit warning on share price of companies listed at the Nairobi Securities Exchange. Secondary data of the share prices of companies listed at NSE over a five year period from the year 2008 to 2013 was collected from Nairobi Securities Exchange. The data collected was analyzed according to NSE sector segment using SPSS version 21 and which was presented in tables and graphs. The findings indicated that profit warning has negative effect on the share prices in Kenya with only exemptions where it is released earlier in the financial year and is accompanied with optimistic information that things may be better towards the end of the year.

Wainaina (2016) conducted a study on the effectiveness of profit warnings in predicting decline in share prices in the NSE. The data used is of Kenya's NSE, between the years 2002 and 2016. Decline in share prices in the NSE as a result of issuance of profit warnings begins two days prior to the issuance of a profit warning. The decline that occurs in the pre-event window is however statistically insignificant at 2.976% of the total decline over the entire profit warning period.

2.4 Summary of the Literature Review

Efficient Market Hypothesis is of the opinion that no relationship exists between profit warnings and share returns because any new information is immediately incorporated in a firms share. In addition, the random walk theory proposes independence in share prices and the past trend cannot be used to predict the future share price. Signaling theory and

the agency theory on the other hand both concur that there is a significant relationship between profit warnings and share returns because when firms issue profit warnings, such warnings serve as a signal to the market that the firm may not be doing well and that the firms' future returns are likely to be affected. As a result of this, the market reacts leading to abnormal returns due to overreaction to the information. The empirical literatures shows that profit warning announcements affect share prices.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter indicates procedures that were followed during the research. It describes the research process includes research design, population of the study, instruments that were be used in data collection as well as data analysis and presentation methods.

3.2 Research Design

This study used descriptive explanatory design. A descriptive explanatory design is a type of research design that seeks to clarify whether and how there is a relationship between two variables (Bryman & Cramer, 2012). It also helps in the identification of the actual reasons for the occurrence of a phenomenon. This study therefore adopted a descriptive explanatory design to explain the relationship between profit warnings announcements and share prices in Nairobi Securities Exchange.

3.3 Target Population

The population of the study comprised of comprised of all the listed companies in NSE. There are 68 listed companies in Kenya. The sample size of the study was companies that have issued profit warnings in the last five years (2012-2016). The sample size of this study was 28 companies that had issued profit warnings within this period (2012-2016).

3.4 Data Collection

This study made use of secondary data. Collection of secondary data consists of collection and analyzing of information from published materials and from other desk

search sources such as the internet. A data extraction tool was used in the collection of secondary data. A data extraction tool is a tool used in retrieval of data from secondary sources for processing and analysis. Secondary data on stock market returns and share prices for individual companies was collected from Nairobi Securities Exchange website and annual reports.

3.5 Data Analysis

Event study methodology is a method which is used to measure the effect of an event on the value of a security. According to MaCkinlay (1997), this methodology has many applications for example, in accounting and finance, event study has been used to study mergers and acquisitions, the issue of new debt or equity, investment decisions as well as warnings announcements. The methodology operates on the assumption that in an efficient market, share prices respond to new information immediately. The occurrence has an instantaneous effect on the share price which can be gauged by study of short time periods compared to the absolute measure method which requires observation for longer time period.

The study used quantitative methods to analyze the effect of profit warnings on share price and share returns. Information on daily average share prices was collected and used to calculate the effect of profit warning announcement on share prices. Through the event study methodology, the study identified the event (profit warning), calendar date of the event (profit warning announcement date, t=0), events window (-15, +15days). It is important to correctly identify the event date because missing it would lead to missing of important observations of the impact of the event. To fully measure the impact of an event, MaCkinlay (1997), indicates that normal and abnormal returns need to be

24

calculated. Actual returns are returns that would be anticipated in case the event does not happen while the abnormal returns are the actual returns minus the expected returns of the asset over the event window. In this study, the focus is to find out the effect of these warnings on share prices. The study used statistical methods to compute the abnormal returns (AR) after which the results were analyzed to obtain the Cumulative Abnormal Returns (CAR).

3.5.1 Event Date Specification

If profit warning announcement is issued on a trading day, it is assigned day 0. If the announcement is issued on a day with no trading day taking place, the next trading day that is available will be assigned day 0. The study was an analysis of an event period of thirty one days, consisting of 15 days before announcement of profit warning and 15 days after profit warning announcement, with the warning announcement date being day 0. The study used an estimation period of 30days before the event window. This was done to avoid the overlapping of data.

3.5.2 Measuring Daily Returns

The daily share return at any given period is the market model residual. This was computed as below;

$$Actual\ stock\ returns = \frac{Actual\ stock\ price - previous\ stock\ price}{previous\ stock\ price}$$

Whereas the actual share price is the average of the lowest and highest share price at a given day as expressed from the securities exchange. The study used the NSE 20 share index as a benchmark to compute the expected returns for companies listed in Kenya.

Studies done by Tserandash and Xiaojing (2010), Bulkley and Herrerias (2005) and Jackson & Madura (2003) indicated that the market model was the most preferred and best tool. Abnormal returns (AR) was computed using the market model to yield the CAR and SCAR.

3.5.3 Abnormal Returns

Abnormal Returns (AB) are most of the times used in estimating the impact of the announcements of profit warnings. A normal return refers to expected returns disregarding share movement as a result of an event (Gathoga, 2016). The Capital Asset Pricing Model (CAPM) was used in his study in the determination of the rate of shares return. Sharpe (1994) indicates that an investor is normally rewarded for taking systematic risks by use of share returns. In this study, the actual share returns were calculated by use of the following formula;

$$R = \frac{(MP_t - MP_{t-1})}{MP_{t-1}}$$

Where; MP represents shares market price at time t and R is the actual share returns. In this study, the dividends paid were not considered and therefore the returns captured the movement of share prices only.

Expected/normal returns was calculated by use of the following formula.;

$$ER_{xt} = \alpha_x + \beta_x Rm_t$$

Where; ER_{xt} represents expected returns at time t, on share x; Rm_t represents market returns at time t; α_x represents a constant of share x and $\beta_x Rm_t$ represents the share x price volatility relative to the overall market. Both α and β was calculated by use of

ordinary least squares (OLS) method depending on the historical share data and the market index for the estimation period.

The expected returns were then estimated using the following equation and the values of α and β obtained from the equation above.

$$ER_t = \alpha + \beta Rm_t$$

Abnormal returns were then measured by obtaining the difference between expected/normal return rate and the actual return rate. The following formula was used in the calculation of abnormal returns;

$$AR_{it} = R_{it} - (\alpha_i + \beta_i RM_t)$$

Where;

AR_{it} = Abnormal return of share i at time t

R_{it} = Return of share at time t

Rm_t = market return at time t

α and β = constants

3.5.4 Cumulative abnormal returns

The cumulative abnormal return was computed as:

$$CARi, t = \sum_{t=0}^{n} AR_{it}$$

Where; CAR_{it} – cumulative abnormal return on share i obtained in the event window n, n – The event window

3.5.5 Standardized cumulative abnormal returns

Standardized cumulative abnormal returns (SCAR) was computed as:

$$\text{SCARiT} = \frac{(\text{CAR it})}{\sigma(\text{CARit})}$$

Where; σ (CARit) - The standard deviation of CAR's adjusted for forecast error.

T-test statistic was used to measure the statistical significance of the ARs and CARs, and SCARs reported during the event window at 5% significance level. T-test statistic assumes a normal distribution of data.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study, their interpretations and discussion guided by the purpose of the study, which was to determine the relationship between profit warning and share prices of companies listed in Nairobi Securities Exchange. The chapter begins with descriptive statistics, followed by test for significance, analysis of abnormal returns and summary and interpretations of the findings.

4.2 Descriptive Statistics

The first step in the data analysis was to calculate share returns for each of the 28 companies. The second step was to calculate the market return, which was used in the calculation of alpha and beta values required in the calculation of the expected/normal returns. The alpha and beta values were obtained by use of ordinary least squares method (OLS) and covered 30 days, starting from day -16 to day -45. In the regression equation, share returns were used as the independent variable and market returns (NSE 20 share index) was used as the dependent variable. From the findings, the alpha value (α) was -0.002 and the beta coefficient (β) was 0.236. The alpha value (α) and beta coefficient (β) obtained were then used in the computation of expected returns.

$$E(Rit) = -0.002 + 0.236Rmt$$

The abnormal returns were then calculated by subtracting the expected returns from the actual share returns. This was done for all the 28 companies. The abnormal returns for each of the 28 companies was then obtained by subtracting expected returns from the

actual share returns. Cumulative abnormal returns were then obtained by cumulatively adding the abnormal returns. The calculation of actual share returns, market returns, expected/estimated returns, abnormal returns, cumulative abnormal returns and standardized abnormal returns was done by use of Microsoft excel. However, the calculation of t-statistics and p-values was done by use of SPSS version 22.

4.2.1 Abnormal Returns Per Sector

An abnormal return in the share of a firm refers to the returns generated by a particular portfolio of security over is period of different that is considered different from the estimated to expected returns. The study covered 28 companies from sectors such as agriculture, banking, commercial and services, construction and allied, energy and petroleum, insurance, investment and manufacturing and allied.

4.2.1.1 Agriculture Sector

For the time period ranging from 2012 to 2016, two companies listed in Nairobi Securities Exchange had profit warning announcements. These firms include Kakuzi and Kapchorua Tea. Between day -15 and 0, there was minimal abnormal returns, which was below 0.0164. However, in day one the companies expected a sharp increase in their abnormal returns from -0.0115 to -0.2395. On day 2 the abnormal returns decrease to 0.0391 and then normalized thereafter.
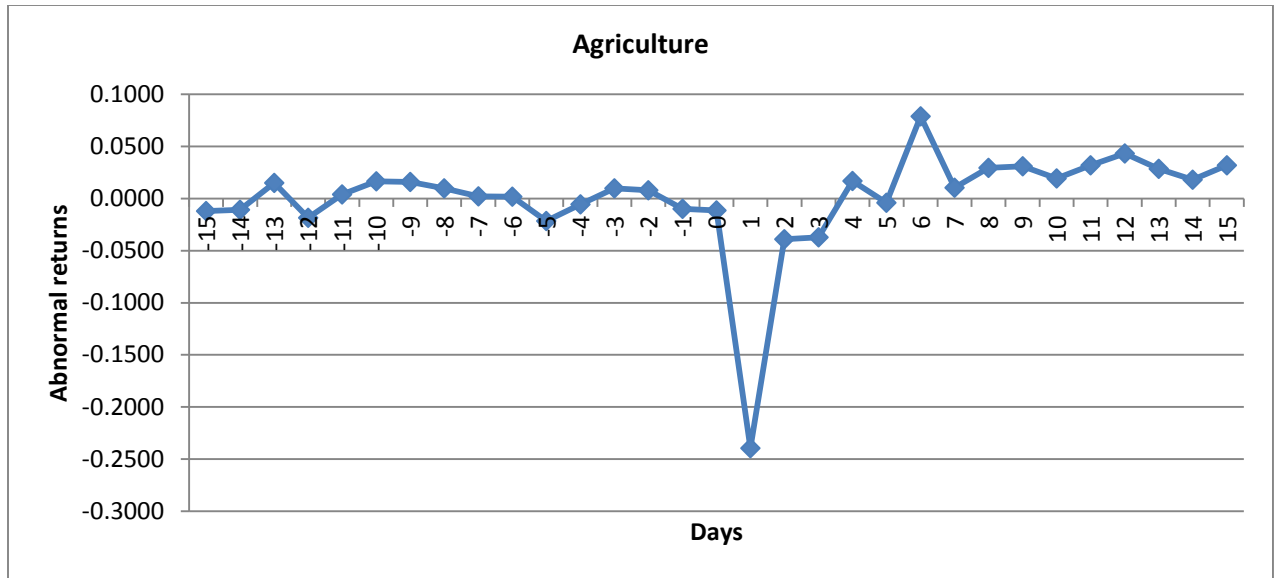
Figure 4.1: Abnormal Returns for the Agriculture Sector

4.2.1.2 The Banking Sector

During the period ranging from 2012 to 2016, three commercial banks listed in Nairobi Securities exchange announce profit warnings. These commercial banks include the National Bank of Kenya, Family Bank Limited and Standard Chartered Bank. Between day -15 and -13 the abnormal returns were minimal, but later increased to 0.0257 in day -1. However, between day -1 and 1 the abnormal returns sharply decreased -0.0956. It then increased to 0.0018 in day and later normalized.
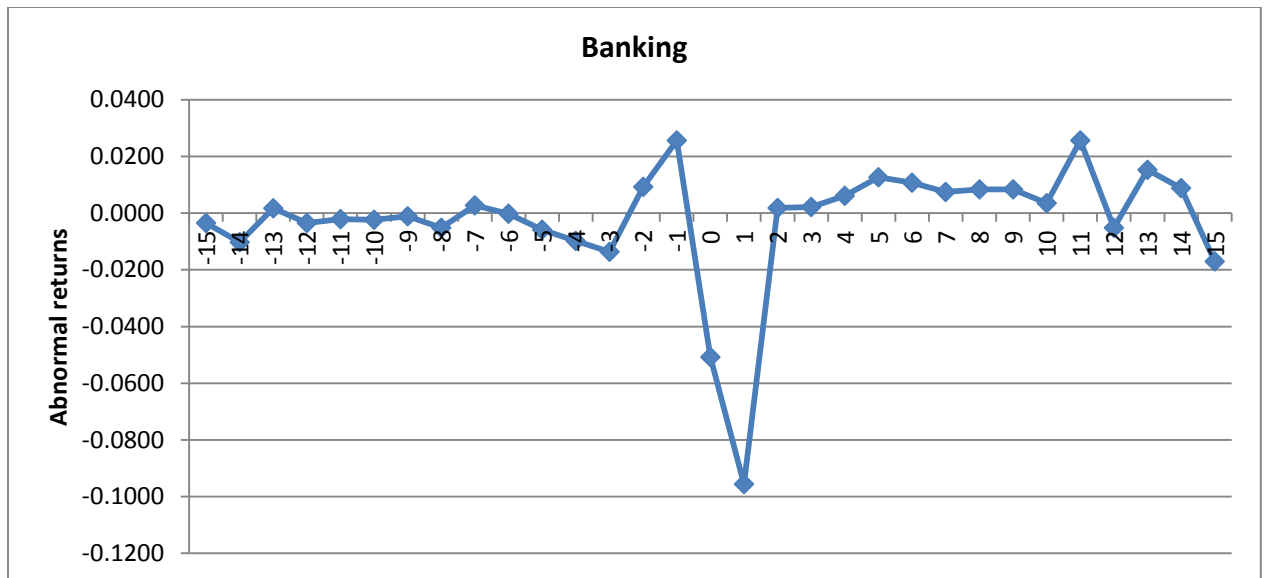
Figure 4.2: Abnormal Returns for the Banking Sector

4.2.1.3 Commercial and Services Sector

Between the year 2012 and 2016, 7 companies in the commercial and services sector in Nairobi Securities Exchange had profit warning announcements. These companies include Atlas Development and Support Services, Express Ltd, Kenya Airways, Longhorn Kenya Ltd, Standard Group Ltd, TPS East Africa (Serena), Uchumi Supermarket Ltd. Between day 15 and -1 prior to the profit warning announcements, the companies had minimal abnormal returns. However, between the day of profit warning announcements (0) and day 1, the abnormal returns sharply increased from -0.002 to -0.2622. For the time period between day 2 and day 15 after the announcement of the profit warnings the companies experienced minimal abnormal returns.
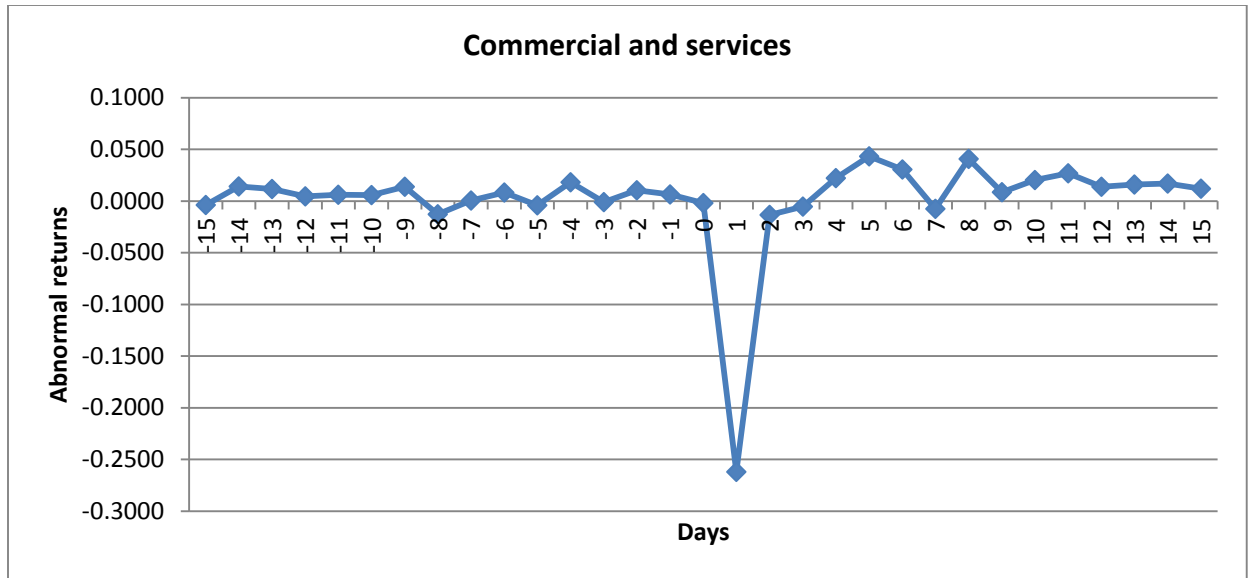
Figure 4.3: Abnormal Returns for the Commercial and Services Sector

4.2.1.4 Construction and Allied Sector

For the period ranging from 2012 and 2016, 4 companies in the construction and allied sector (ARM Cement, Crown paints, EA Portland cement and East African Cables Ltd) had given profit warning announcements. Fifteen days prior to the profit warning announcements (-15 to 0) the abnormal returns were minimal. On day 1 after the profit warning announcements they increased to -0.1436. The figure then increased to -0.0073 on day and then normalized thereafter.
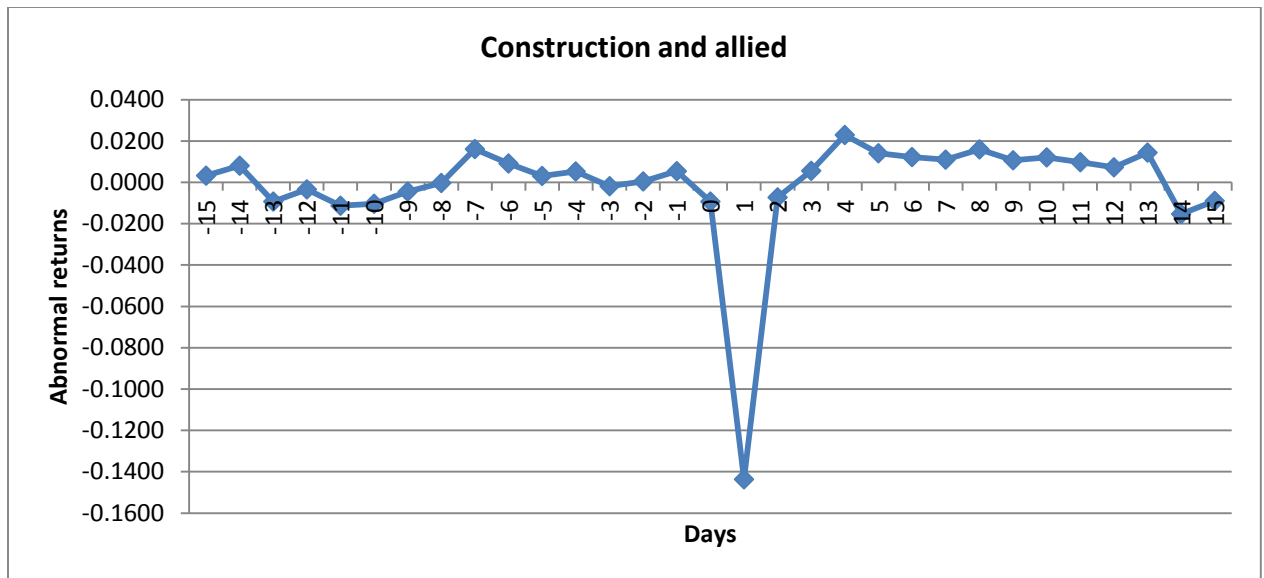
Figure 4.4: Abnormal Returns in the Construction and Allied Sector

4.2.1.5 Energy and Petroleum Sector

In the energy and petroleum sector, two companies announced profit warnings between the year 2012 and 2016. These companies include Kenokobil and Total Kenya. Prior to the day of announcement (-15 to -1), abnormal returns had some fluctuations, which was considered normal. However, between day -1 and day 1 the abnormal returns increased from 0.0091 to -2765.
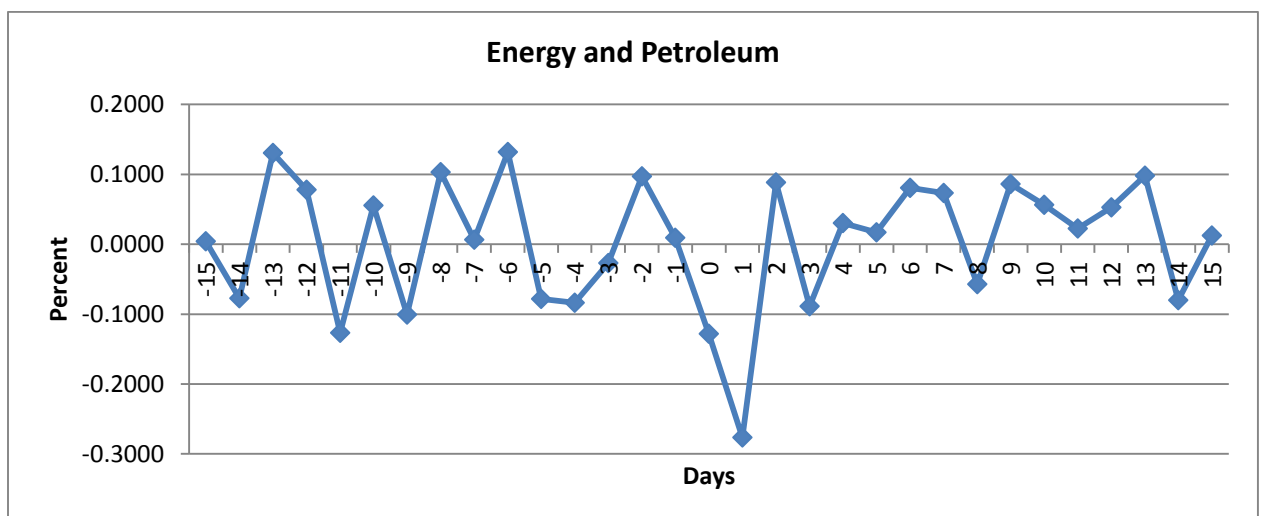
Figure 4.5: Abnormal Returns for the Energy and Petroleum Sector

4.2.1.6 Insurance Sector

In the insurance sector, three companies had issued profit warnings between the year 2012 and 2016. These companies encompass BRITAM Holdings Ltd, Liberty Holdings and Pan African Insurance. Before the profit warnings announcement day (day -15 to day 0), the abnormal returns were minimal, although slightly fluctuating. Between day 0 and day, the abnormal returns increased from -0.0267 and -0.1429. However, the figure decreased to -0.0265 in day 2, before normalizing thereafter.
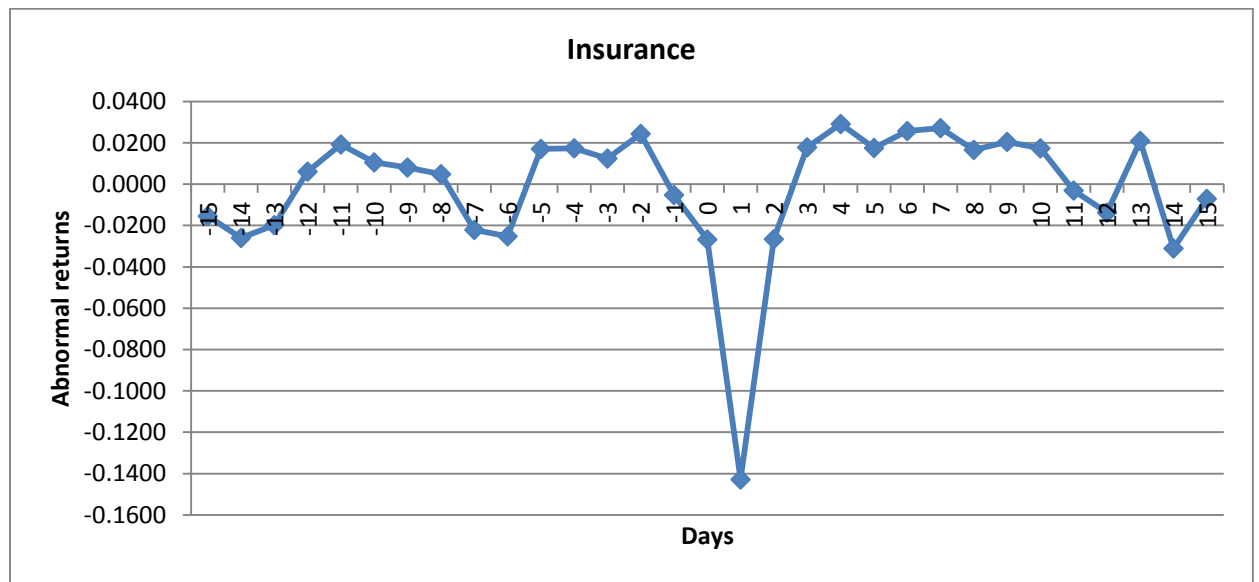
Figure 4.6: Abnormal Returns for the Insurance Sector

4.2.1.7 Investment Sector

For the period between 2012 and 2016, four companies in the investment sector announced profit warnings. These companies include Home Africa, Kurwitu Ventures, Nairobi Securities Exchange and TCL Africa Trans-Century Ltd. Prior to the profit warning announcements (day -15 to day 0) and the period between day 2 and day 15, after the profit waning announcements, the four companies had minimal abnormal

returns. However, for between the day of profit warning announcement (day 0), and day 1 the abnormal returns decreased from -0.0087 to -0.1702.
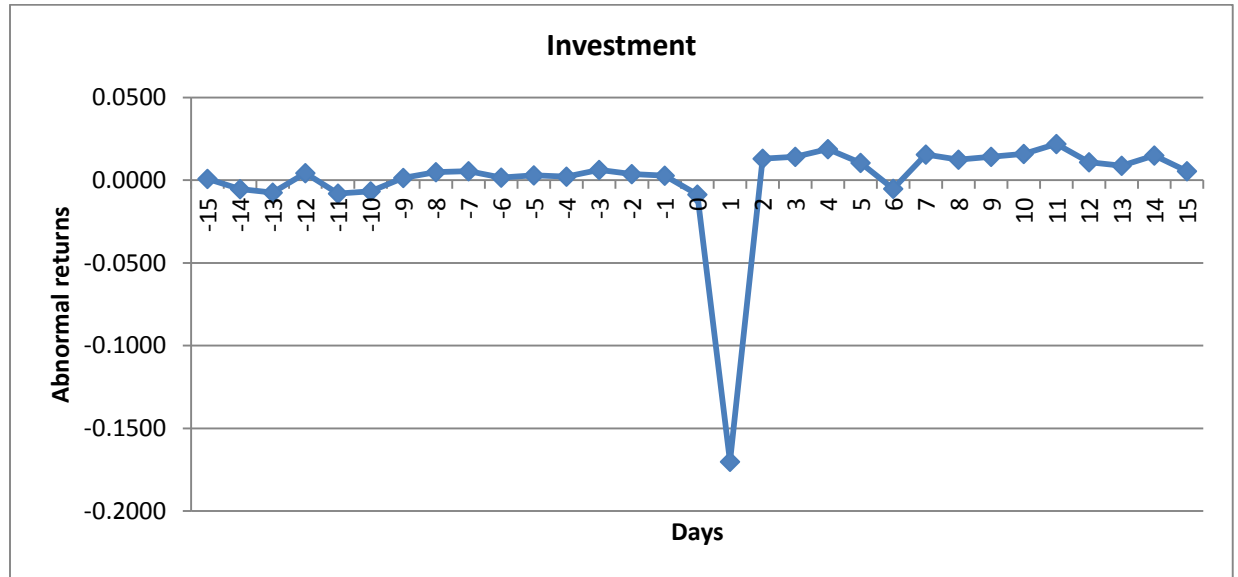
Figure 4. 7: Abnormal Returns in the Investment Sector

4.2.1.8 Manufacturing and Allied Sector

In the manufacturing and allied sector, three companies made profit warning announcements between the year 2012 and 2016. These companies comprise of Boc Kenya Limited, EABL and Mumias Sugar. Between day -15 and day 0 as well as the period between day 2 and day 15, the abnormal returns were minimal. However between day 0 and day, the abnormal returns had a sharp increase from -0.0022 to -0.1945.
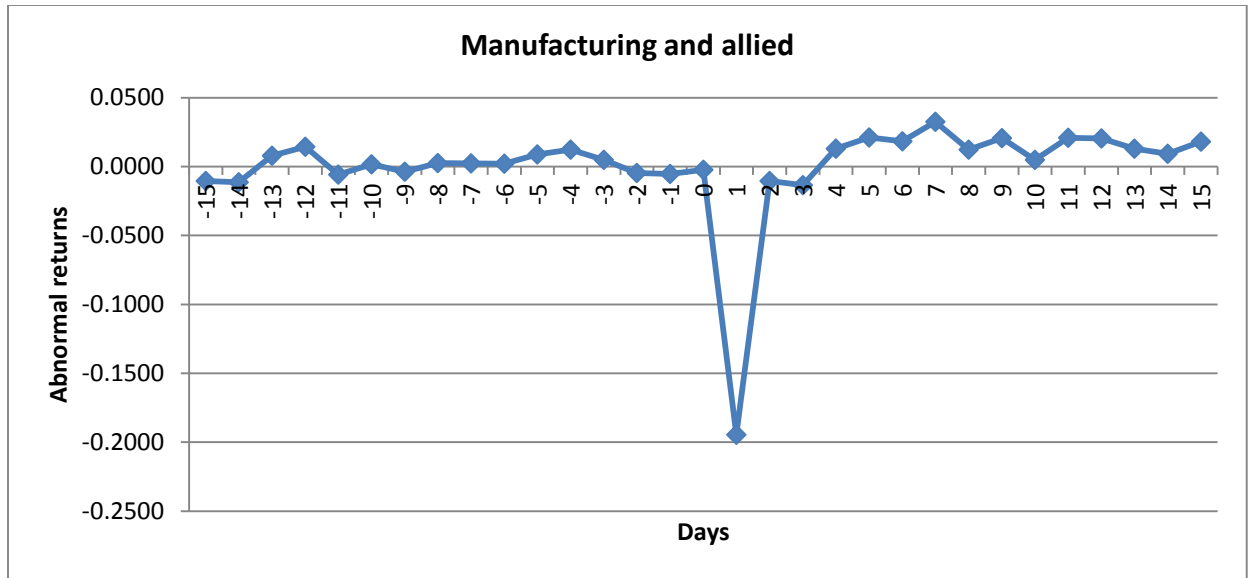
Figure 4. 8: Abnormal Returns in the Manufacturing and Allied Sector

4.3 Test for Significance

A t-test was used in determining whether profit warning announcements has a statistically significant effect on share prices. The study used a 95% confidence interval, which gives a 5% (0.05) level of significance. This implies that for an association to be statistically significant the p-value must be less than the significance level.

4.3.1 Abnormal Returns

Table 4.1 shows the average abnormal returns, standard deviation of abnormal returns, standardized abnormal returns, t-statistics and p-values. According to the findings, for 12 days out of the 31 days event window, there were negative abnormal returns and for 19 days there were positive abnormal returns. In addition, on the first day (t=-2.751, P= 0.010), second day (t=-10.039, P= 0.000), third day (t=4.265, P=0.000), fourth day (t=4.265, P=0.000), fifth day (t=4.324, P=0.000) and sixth day (t=3.206, P=0.000) after the profit warning announcements, the abnormal returns were statistically significant.

This is because the p-values were less than the significance level (0.05). The study used a

5% level of significance level.

Table 4. 1: T-test for Abnormal Returns

Days	Average ARit	σARit	SARit	T	P-value
-15	-0.0041	0.0254	-0.1597	-0.845	0.405
-14	-0.0075	0.0449	-0.1661	-0.879	0.387
-13	0.0098	0.0448	0.2194	1.161	0.256
-12	0.0073	0.0260	0.2819	1.491	0.147
-11	-0.0088	0.0440	-0.2000	-1.059	0.299
-10	0.0052	0.0372	0.1387	0.734	0.469
-9	-0.0027	0.0338	-0.0788	-0.417	0.680
-8	0.0058	0.0361	0.1597	0.845	0.405
-7	0.0020	0.0298	0.0663	0.351	0.728
-6	0.0106	0.0468	0.2275	1.204	0.239
-5	-0.0051	0.0399	-0.1276	-0.675	0.505
-4	0.0014	0.0293	0.0476	0.252	0.803
-3	-0.0005	0.0181	-0.0251	-0.133	0.895
-2	0.0138	0.0495	0.2788	1.475	0.152
-1	0.0043	0.0283	0.1512	0.800	0.431
0	-0.0216	0.0415	-0.5198	-2.751	0.010
1	-0.1936	0.1021	-1.8971	-10.039	0.000
2	-0.0027	0.0558	-0.0492	4.265	0.000
3	-0.0068	0.0340	-0.1984	4.265	0.000
4	0.0200	0.0249	0.8060	4.324	0.000
5	0.0207	0.0342	0.6059	3.206	0.003
6	0.0259	0.0317	0.8172	-1.050	0.303
7	0.0150	0.0319	0.4711	1.204	0.239
8	0.0163	0.0460	0.3542	1.874	0.072
9	0.0194	0.0615	0.3153	1.669	0.107
10	0.0173	0.0441	0.3922	2.075	0.048
11	0.0198	0.0433	0.4572	1.491	0.147
12	0.0130	0.0429	0.3035	1.606	0.120
13	0.0216	0.0319	0.6789	3.593	0.001
14	-0.0017	0.0487	-0.0351	-0.186	0.854
15	-0.0293	0.1927	-0.1518	-0.803	0.429

4.3.2 Cumulative Abnormal Returns

The finding, as shown in table 4.2, show that 20 days out of the 31 days of the event window, there were negative abnormal returns. The findings also show that the first day (t=-9.917, p=0.000), second day (t=-9.868, p=0.000), third day (t=-9.057, p=0.000), fourth day (t=-8.875, p=0.000), fifth day (t=-6.993, p=0.000), sixth day (t=-6.418, p=0.000) and seventh day (t=-4.265, p=0.000) had high negative cumulative abnormal returns after profit warning announcements.

Table 4. 2: Cumulative Abnormal Returns

Days	CARit	σCARit	SCARit	t	p-value
-15	-0.00406	0.02540	-0.15975	-0.771	0.448
-14	-0.01151	0.04048	-0.28441	-1.407	0.171
-13	-0.00171	0.04304	-0.03962	-0.07	0.945
-12	0.00561	0.05575	0.10055	0.549	0.588
-11	-0.00318	0.05329	-0.05960	-0.231	0.819
-10	0.00197	0.04929	0.04004	0.35	0.729
-9	-0.00070	0.05524	-0.01269	0.091	0.928
-8	0.00508	0.04606	0.11032	0.705	0.487
-7	0.00706	0.04909	0.14372	0.804	0.428
-6	0.01770	0.07093	0.24960	1.305	0.203
-5	0.01261	0.06058	0.20815	1.057	0.300
-4	0.01402	0.05828	0.24053	1.201	0.241
-3	0.01353	0.06076	0.22274	1.063	0.298
-2	0.02735	0.06862	0.39863	1.987	0.058
-1	0.03164	0.06547	0.48333	2.478	0.020
0	0.01007	0.06864	0.14671	0.729	0.472
1	-0.18353	0.09422	-1.94782	-9.917	0.000
2	-0.18627	0.09685	-1.92331	-9.868	0.000
3	-0.19302	0.10925	-1.76672	-9.057	0.000
4	-0.17299	0.10052	-1.72096	-8.875	0.000
5	-0.15232	0.11085	-1.37411	-6.993	0.000
6	-0.12638	0.10030	-1.26009	-6.418	0.000
7	-0.11130	0.09462	-1.17622	-4.265	0.000
8	-0.09501	0.08803	-1.07927	-0.231	0.819
9	-0.07565	0.10095	-0.74936	-0.771	0.448
10	-0.05839	0.08289	-0.70441	-1.407	0.171
11	-0.03857	0.09398	-0.41038	-2.027	0.053
12	-0.02559	0.07706	-0.33205	-1.648	0.111
13	-0.00393	0.09057	-0.04339	-0.194	0.848
14	-0.00564	0.06908	-0.08166	-0.435	0.667
15	-0.03491	0.21700	-0.16088	-0.867	0.394

4.4 Analysis of Abnormal Returns

Based on the event window (-15 day to +15 days) the abnormal returns for all the 28 companies were calculated. As indicated in figure 4.9, the abnormal returns attained an

40

increasing trend, the first day, second day and third day after the profit warning announcements. As indicated in table 4.2, the market receives information on profit warnings as bad news. This is shown by the high abnormal returns after profit warnings announcements which statistically significant at 5% level of significance. The effect of profit warnings announcements on share prices are significant for 6 days: the first day (t=-2.751, P= 0.010), second day (t=-10.039, P= 0.000), third day (t=4.265, P=0.000), fourth day (t=4.265, P=0.000), fifth day (t=4.324, P=0.000) and sixth day (t=3.206, P=0.000).

The results show the possibility of insider trading. This is because the abnormal returns on day 1- were statistically significant (t=2.478, P=0.000). Many times investors take advantage of insider trading information, which leads to significant abnormal returns before the profit warning announcements date. Generally, the highly significant abnormal returns clearly show that there is information leakage before announcements and therefore the market reacts to it.
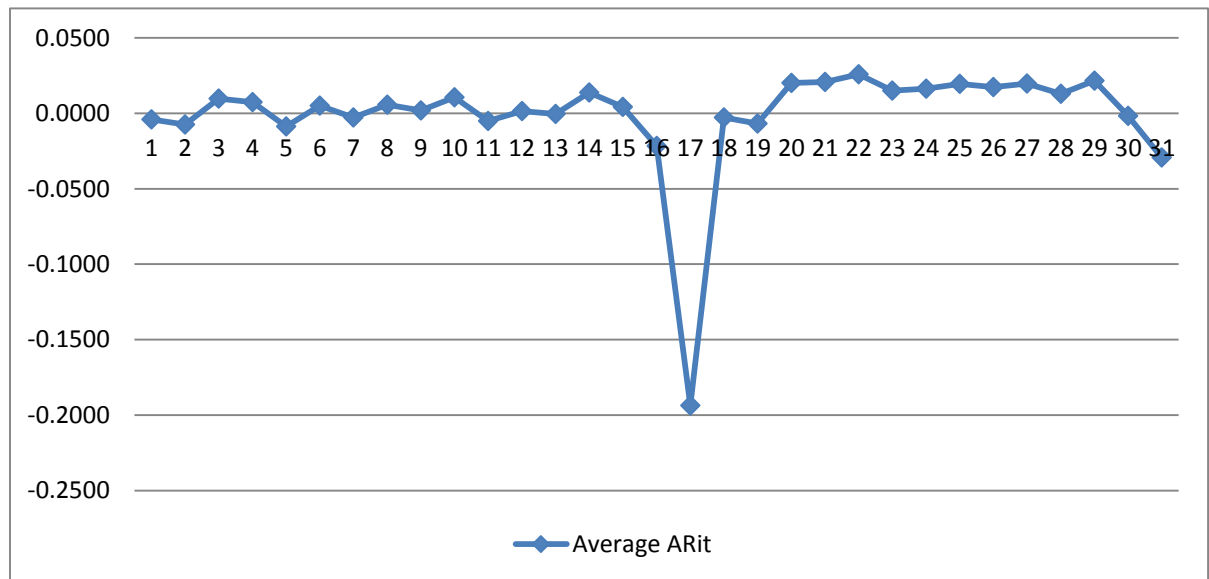
Figure 4.9: Graph of Average Abnormal Returns for All the Companies

Figure 4.9 shows that there is a sharp increase in the negative abnormal returns form the data of profit warning announcements to the third day (+3). This sharp increase in abnormal returns is as a result of overreaction of the market to the profit warning unexpected news. After day three, the abnormal returns begin to resume to the initial pattern prior to the event data.
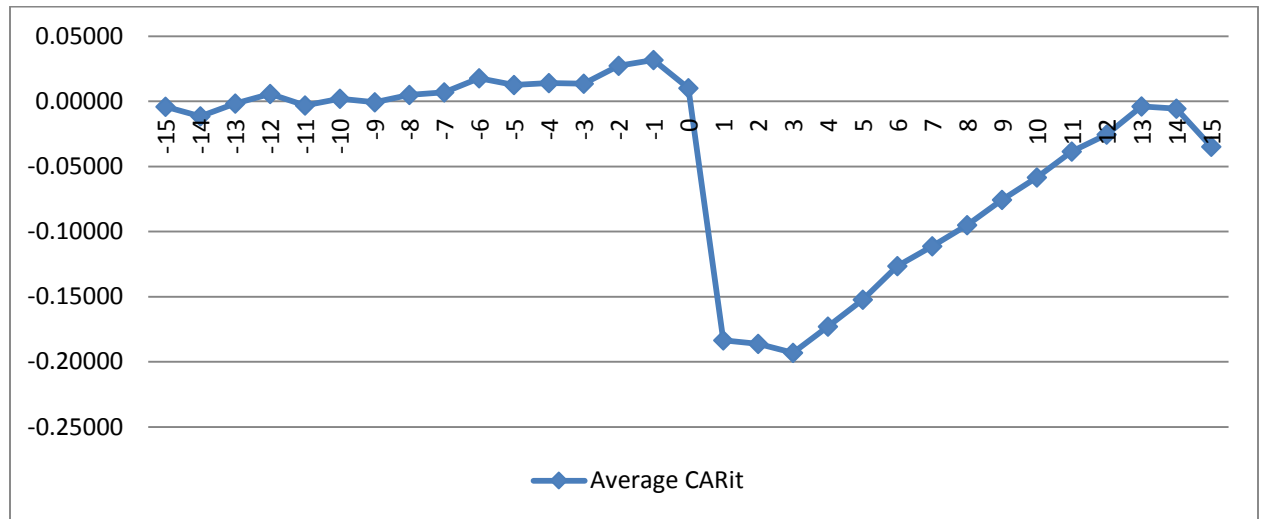
Figure 4.10: Cumulative Abnormal Returns for all the 28 Companies

On the first, second and third day after the profit warning announcements, the 28 firms made cumulative abnormal returns that were statistically significant (p-value<0.05). the decline in returns after profit warnings was so high in such a way that even 15 days after the announcement, investors were still making losses. The improvement in abnormal returns between day 3 and day 15 was small and hence did not manage to reverse the effect of profit warnings. This implies that the effect of profit warning was still felt 15 days after the profit warning announcement.

4.5 Summary and Interpretations of the Findings

The objective of this study was to determine the relationship between profit warning announcement and share prices of companies listed in Nairobi Securities Exchange. The study found that there were high negative abnormal returns and cumulative abnormal returns after profit warning announcements. This implies that profit warning announcements have a negative effect on share prices. The study also found that the market takes too long to recover from the effect of profit warning announcements on share prices. This is because 15 days after the profit warning announcements, the share returns were still negative. The study established that both abnormal and cumulative abnormal returns were negative and significant. The significant cumulative abnormal returns show that profit warning announcements provide important information that the market uses in the adjustment of share prices.

The findings of this study concur with Tserandash and Xiaojing (2010) study on profit warning relationship with share returns in European Union (EU) markets that found that profit warning had an influence that was negative on share return in the EU area. Similarly, In Netherlands, Heesters (2011) study on share returns following profit warnings in Dutch Share Market found that large abnormal negative returns follow profit warnings in the short-term. Abnormal returns will continue drifting downwards in the medium term for an entire twelve month post-event period and this phenomenon is attributed to market under reaction. In addition, the findings concur with Lusweti (2014) study on impact of profit warning on share price of companies listed at the Nairobi Securities Exchange that established that profit warning has negative effect on the share prices in Kenya with only exemptions where it is released earlier in the financial year and

is accompanied with optimistic information that things may be better towards the end of the year.

The findings show that the reactions of the share prices to profit warning announcements is consistent with the efficient market hypothesis (EMH). The efficient market hypothesis indicates that the it is impossible to beat the overall market by use of expert selection of share or market timing, and that investors can only get returns that are higher by buying riskier investments or by chance. The findings of this study show the generation of negative abnormal returns after the profit warning announcements. These findings agree with Kamau (2016) findings that the share prices of a company always reflect the available relevant information in the public domain.

The effect of profit warnings on share prices remains significant six days after the profit warning announcements. Also, the study found that 15 days after the announcement of profit warnings investors were still making losses. Unlike the EMH, the reactions in abnormal prices persist for several days after making of the announcement. These findings agree with Afego (2013) findings that due to the downward drift of the abnormal cumulative returns that are persistent 20 days after announcement, there exists an inconsistency with the efficient markets hypothesis. However, the findings are contrary to Heesters (2011) argument that abnormal returns will continue drifting downwards in the medium term for an entire twelve-month post-event period and this phenomenon is attributed to market under reaction.

The study found that one day before profit warning announcement, the abnormal returns were significant. This shows the possibility of insider trading or leakage of information before the profit warning announcement. In addition, the results show that the market observes the provided information immediately thus reacting significantly. These findings agree with Kamau (2016) findings that there was possibility of insider trading or leakage of information one data 3 days before profit warning announcements.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study sought to investigate the relationship between profit warning and share prices of companies listed in Nairobi Securities Exchange. The study found that there were high negative abnormal returns and cumulative abnormal returns after profit warning announcements. The study also found that the market takes too long to recover from the effect of profit warning announcements on share prices. This is because 15 days after the profit warning announcements, the share returns were still negative. The reaction of the market to the profit warning announcements was significantly negative and this can be explained by the fact that investors presumably interpret profit warnings as bad information. The extent of the negative market reactions shows that the event (profit warning announcement) is not just statistically significant but it is also economically significant. As a result of the significant effect of profit warning announcements on share prices, the timing and the content of profit warning announcements are important.

The study also found that there was a possibility of insider trading one day before profit warning announcement where the abnormal returns were statistically significant. In addition, a sharp decline was found on day one after the profit warning announcement implying that the market receives information on profit warnings negatively and thus high negative cumulative abnormal returns around the event date.

5.2 Conclusions

The objective of this study was to determine the relationship between profit warning announcement and share prices of companies listed in Nairobi Securities Exchange. The study found that the reaction of the market is immediate and negative after profit warning announcements. Therefore, the study concludes that profit warning announcements have a negative effect on share prices. This is because the highly negative abnormal returns on day one (t=-9.917, p=0.000), second day (t=-9.868, p=0.000), third day (t=-9.057, p=0.000), fourth day (t=-8.875, p=0.000), fifth day (t=-6.993, p=0.000), sixth day (t=-6.418, p=0.000) and seventh day (t=-4.265, p=0.000) were statistically significant. This implies that the market receives news on profit warnings negatively, thus triggering a reaction by investors. A such, companies considering to be listed in Nairobi Securities Exchange should be aware that it is their obligation to report profit warnings and this leads to negative abnormal returns because investors react negatively to such news.

The results of this study were in agreement with existing empirical literature that indicates that profit warning announcements lead to large negative abnormal returns. One day after profit warning announcements, negative abnormal returns increase considerably. This increase in negative abnormal returns can be attributed to the negative market reaction when the public/investors react to the profit warning announcements.

The study also concludes that there was a possibility of insider trading. This is because one day before the profit warning announcements, the negative abnormal returns were significant. Investors often take advantage of insider trading information, which leads to significant abnormal returns before the profit warning announcements date. Generally,

the highly significant abnormal returns clearly show that there is information leakage before announcements and therefore the market reacts to it.

5.3 Recommendations

The study found that there was possibility of insider trading, one day before announcement of profit warnings. This study recommends that the Capital Market Authority should come up with policies to prevent insider trading in Nairobi Securities Exchange.

It is important that companies listed in Nairobi Securities Exchange should evaluate the impact of various types of announcements as the public reacts immediately to information released. In addition, the content and timing of profit warning announcements should been keenly considered as they significantly influence share prices. Also, the study recommends that companies listed in Nairobi Securities Exchange should consider profit warning announcements in their strategic plans as they negatively affect market perception and the value of a firm.

Due to the negative effect of profit warning announcements on share prices, firms may shy away from making complete disclosure of their profits through profit warnings. This is due to the fear that the share market and investors will react negatively to information on profit warning announcements. Therefore, the Capital Market Authority should raise the fines of failing to make profit warning announcements from Ksh. 50,000 to a higher figure that would forces firms to comply.

The study also recommends that firms that have issued more than one profit warnings in the last five years should seek to identify factors affecting their performance and develop strategies to ensure improvement of performance. This will help in ensuring that there are no frequent abnormal returns in their firms.

To investors, stockbrokers and potential investors, the study recommends that they should pay attention to daily company announcements so as to know when companies are making profit warning announcements. This will enable them in reducing the expected losses or losses that they are likely to suffer from investing in the share of a firm.

5.4 Limitations of the Study

The unavailability of data from Capital Market Authority, company websites and Nairobi Securities Exchange on share prices and market returns was one of the main challenges faced in this study. Even though Nairobi Securities Exchange presents data on share prices and market returns, the data available is only for two days. The Capital Market Authority also presents data on share prices per companies listed in Nairobi Securities Exchange, but the data available is only for one data. Individual company websites present financial statements on quarterly and annual basis, but does not present data on share prices.

Companies issue profit warnings for different reasons, but formal company announcements by companies listed in Nairobi Securities Exchange do not outline what motivates them to make profit warnings. Different reasons for issuing profit warning announcements may influence share prices differently and hence companies should provide reasons for issuing profit warnings.

Some of the companies had issued more than one profit warning announcements during the study period (2012-2016). The would have led to a cofounding effect and hence affect the credibility of the results. However, for companies that had issued more than one profit warning announcements during the study period, the most recent announcement was used.

The shares of the companies that issued profit warning announcements but did not trade in Nairobi Securities Exchange during the event window. Therefore, it was difficult to calculate the share returns and abnormal share returns. The companies whose shares did not trade during the event window were excluded from the study.

5.5 Suggestions for Further Studies

This study was limited to a period of 5 years and hence focused on 28 companies listed in Nairobi Securities Exchange that had issued profit warnings. This study therefore recommends that further studies should be conducted to cover a period of 10 years (2007 to 2016).

In addition, this study was limited to one type of company announcements. Therefore, the study suggests that further studies should be conducted on the effect of other types of company announcements such as acquisition, merger and change of directorship on share market prices in Nairobi Securities Exchange.

Further, this study did not show whether the effect of profit warnings announcement on share prices was varying per sector in Nairobi Securities Exchange. Companies listed in Nairobi Securities Exchange are categorized into 13 sectors. This study therefore

suggests that further studies should be conducted on effect of profit warnings announcement on share prices in specific sectors in Nairobi Securities Exchange.

While the study looked at the effect of profit warning announcements on share prices, it did not outline the determinants of profit warning announcements. This study therefore suggests further studies on the determinants of profit waning announcements among companies listed in Nairobi Securities Exchange.

REFERENCES

Afego, P.N. (2013). Share Price Response to Earnings Announcements: Evidence From the Nigerian Share Market. *Journal of African Business, 14*(3), 12-34.

Al-Tamimi, A.H., Alwan, A.A. & Rahman, A.A. (2016). Factors Affecting Share Prices in the UAE Financial Markets. *Journal of Transnational Management, 16*(1), 3-19.

Anyanzwa, J. (2017). *Three more Kenyan firms issue profit warnings.* Retrieved from http://www.theeastafrican.co.ke

Bryman, A. & Cramer, D. (2012). *Quantitative Data Analysis with SPSS Release 8 for Windows.* New York: Routledge.

Bulkley, G., & Herrerias, R. (2003). Share Returns Following Profit Warnings: *Evidence for Behavioral Finance, 23,* 793-805,

Collett, N. (2004). Reactions of the London share exchange to company trading Statement announcements. *Journal of Business Finance & Accounting, 31*(1/2), 1-13.

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance, 25*(2), 383-417.

Gathoga, S. M. (2016). *The effect of profit warnings announcement on share returns of listed companies in East Africa.* Retrieved from http://hdl.handle.net/11295/99784

Heesters, M. (2011). *Share Returns Following Profit Warnings: Evidence from the Dutch Share Market.* Retrieved from arno.uvt.nl/show.cgi?fid=120999

Jackson, D., & Madura, J. (2003). Profit warnings and timing. *Financial Review*, 38(4), 497-513.

Jensen, M.C. & Meckling, W.H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics, 3*(4), 305-360

Kamau, B.W. (2016). *The Effect of Profit Warning Announcements on the Share Returns of Firms Listed at the Nairobi Securities Exchange.* Retrieved from erepository.uonbi.ac.ke/

Kiminda, R.W., Githinji, C.K. & Riro, G. K. (2014). Effects Of Profit Warnings Announcement On Performance Of Shares In The Nairobi Securities Exchange. *European Journal of Business and Social Sciences, 3*(3), 150-168.

Kitatia, E., Zablonb, E. & Maithya, H. (2015). Effect of Macro-Economic Variables on Share Market Prices for the Companies Quoted on the Nairobi Securities Exchange in Kenya. *International Journal of Sciences: Basic and Applied Research (IJSBAR), 21*(2), 235-263.

Lusweti, P. N. (2014). *Effect of Profit Warning on Share Price of Companies Listed at the Nairobi Securities Exchange*. Retrieved from erepository.uonbi.ac.ke/

MacKinlay, C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature, 35(*1), 13-39.

Maina, E.W. (2014). *Effect Of Profit Warnings On Share Returns At The Nairobi Securities Exchange.* Retrieved from erepository.uonbi.ac.ke/

Mohamed, A. (2010*). Effect of earning announcements on the share prices of companies listed at the NSE*. Retrieved from http://erepository.uonbi.ac.ke/

Muite, L. N. (2012). *The impact of profit warning announcements on share prices at the Nairobi Securities Exchange.* Retrieved from http://erepository.uonbi.ac.ke:8080/

Nairobi Securities Exchange (2017). *Company Announcements.* Retrieved from www.nse.co.ke/

Ngugi, B. (2016). *Why firms cannot bank on 2016 to get handsome profits*. Retrieved from http://www.nation.co.ke/

Nyabundi, M. A (2013). *Value relevance of Financial Statements Information: Evidence from listed firms in Kenya*: working paper, Kenya, Kenya Revenue Authority.

Owusu, F., Gyau, E.K. & Amaning, N. (2016). The Effect of Earnings Announcement on Share Price of Manufacturing Companies on the Ghana Share Exchange. *European Journal of Accounting, Auditing and Finance Research, 4*(6), 96-111.

Qureshi, M.A., Abdullah, A. & Imdadullah, M. (2012). Share Prices' Variability around Earnings Announcement Dates at Karachi Share Exchange. *Economics Research International, 12*, 1-6.

Ross, S.A. (1973). The economic theory of agency: the principal's problem. *The American Economic Review, 63*(2), 134-139.

Sehgal, S. & Bijoy, K. (2015). Share Price Reactions to Earnings Announcements: Evidence from India. *The Journal of Business Perspective, 19*(1), 1-17.

Shahid, M. & Khan, G. (2014). Determinants of changes in share prices in banking sector of Pakistan. *Journal of Economic and Administrative Sciences, 30*(2), 121-130.

Sharpe, W. F. (1994). The Sharpe Ratio. *Journal of Portfolio Management, 21*(1), 49–58.

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics, 87*(3), 355-374.

Sponholtz, C. (2008). The information content of earnings announcements in Denmark. *International Journal of Managerial Finance, 4*(1), 4-36.

Tserandash T & Xiaojing W (2010). *The relationship between the Profit warning and share returns: Empirical Evidence in EU markets* Retrieved from http://umu.diva-portal.org

Tumurkhuu, T. & Wang, X. (2010). *The relationship between the profit warning and share returns: Empirical evidence in EU markets.* Retrieved from umu.diva-portal.org/smash/get/diva2:394405/FULLTEXT01.pdf

Wainaina, M.N. (2016). *The Effectiveness Of Profit Warnings In Predicting Decline In Share Prices In The NSE: An Event Study Approach.* Retrieved from https://su-plus.strathmore.edu/

Wang, R. & Zhang, Y. (2011). The spillover effect of disclosure rules and materiality thresholds: Evidence from profit warnings issued in Hong Kong market. *China Journal of Accounting Research, 4*(2), 63-80.

YinKhelifa, S. Benamraoui, M. & Saadouni, B. (2017). Share price reaction to profit warnings: the role of time-varying betas. *Review of Quantitative Finance and Accounting, 21*, 1–27.

APPENDICES

Appendix I: Data Extraction Tool

Company	Profit warning date	Share Prices	Market return

Appendix II: List of Companies that Issued Profit Warnings Between 2012 and 2016

1	Kakuzi	Agriculture	26th November 2013
2	Kapchorua Tea	Agriculture	23rd March 2013
3	National Bank of Kenya	Banking	30th March 2016
4	Family Bank Limited	Banking	23rd November 2016
5	Standard Chartered Bank	Banking	25th November 2015
6	Atlas Development and Support Services	Commercial and Services	22nd April 2016
7	Express Ltd	Commercial and Services	26th August 2015
8	Kenya Airways	Commercial and Services	28th January 2012
9	Longhorn Kenya Ltd	Commercial and Services	12th September 2012
10	Standard Group Ltd	Commercial and Services	27th August 2015
11	TPS East Africa (Serena)	Commercial and Services	21st December 2015
12	Uchumi Supermarket Ltd	Commercial and Services	26th August 2015
13	ARM Cement	Construction and allied	10th December 2015
14	Crown paints	Construction and allied	18th Feb 2015
14	EA Portland cement	Construction and allied	24th February 2016
16	East African Cables Ltd	Construction and allied	25th August 2015
17	Kenokobil	Energy and petroleum	7th March 2013
18	Total Kenya	Energy and petroleum	25th March 2016

19	BRITAM Holdings Ltd	Insurance	23rd December 2015
20	Liberty Holdings	Insurance	29th January 2016
21	Pan African Insurance	Insurance	29th December 2015
22	Home Africa	Investment	30th December 2015
23	Kurwitu Ventures	Investment	23rd March 2016
24	Nairobi Securities Exchange	Investment	23rd November 2016
25	TCL Africa Trans-Century Ltd	Investment	16th April 2014
26	Boc Kenya Limited	Manufacturing and allied	9th December 2015
27	EABL	Manufacturing and allied	29th July 2013
28	Mumias Sugar	Manufacturing and allied	14th August 2015

Appendix III: Abnormal Returns

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
-15	0.0029	-0.0266	-0.0047	0.0039	-0.0099	-0.0103	0.0341	-0.0008	0.0071	-0.0663	0.0146	0.0048	-0.0108	-0.0237
-14	0.0059	-0.0272	-0.0014	0.0146	0.0146	0.0104	0.0224	0.0140	0.0050	0.0361	0.0341	-0.0019	-0.0063	0.0115
-13	0.0058	0.0241	0.0073	0.0080	-0.0101	0.0207	0.0115	0.0265	0.0091	0.0694	-0.0478	-0.0077	-0.0043	-0.0273
-12	0.0028	-0.0399	0.0029	0.0015	0.0149	0.0101	-0.0092	0.0178	0.0070	0.0327	0.0226	0.0049	-0.0036	-0.0114
-11	-0.0031	0.0113	-0.0058	-0.0046	0.0041	0.0100	0.0219	0.0095	0.0050	0.0317	-0.0391	0.0038	-0.0009	-0.0115
-10	0.0088	-0.0241	-0.0036	-0.0077	0.0041	0.0199	-0.0295	0.0135	0.0070	0.0307	0.0113	0.0096	-0.0009	-0.0117
-9	0.0087	0.0234	-0.0025	-0.0096	0.0088	0.0097	0.0432	-0.0145	0.0069	0.0298	0.0171	0.0038	-0.0002	-0.0250
-8	-0.0031	0.0228	-0.0047	-0.0244	0.0135	-0.0098	-0.0191	-0.0047	-0.0070	-0.0567	-0.0096	0.0019	-0.0009	-0.0148
-7	0.0060	0.0102	0.0036	0.0080	0.0040	0.0195	-0.0195	0.0129	-0.0429	0.0299	0.0074	0.0048	-0.0002	-0.0280
-6	-0.0060	-0.0100	0.0018	0.0028	0.0053	0.0095	0.0200	0.0007	0.0105	0.0629	0.0031	0.0078	0.0019	0.0143
-5	-0.0061	-0.0372	0.0018	-0.0140	-0.0053	0.0094	0.0097	0.0008	0.0067	0.0290	0.0105	0.0020	0.0033	0.0141
-4	0.0028	-0.0141	0.0062	-0.0582	0.0227	0.0093	0.0228	0.0097	0.0278	0.0307	0.0180	0.0097	0.0026	0.0140
-3	-0.0031	0.0228	0.0007	-0.0317	0.0098	0.0188	0.0117	0.0055	0.0047	0.0298	-0.0380	0.0020	0.0019	0.0138
-2	-0.0061	0.0222	0.0018	0.0176	0.0085	-0.0097	0.0222	-0.0007	0.0065	0.0576	0.0021	0.0049	-0.0103	0.0136
-1	-0.0062	-0.0136	0.0018	0.0668	0.0085	0.0095	-0.0298	0.0097	0.0102	0.0274	0.0042	0.0127	-0.0043	0.0135
0	-0.0092	-0.0138	-0.0047	-0.0925	-0.0550	0.0094	0.0330	0.0179	-0.0046	-0.0259	-0.0387	-0.0049	-0.0040	-0.0348

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	-0.0916	-0.3874	-0.1504	-0.0304	-0.1059	-0.1794	-0.3082	-0.3258	-0.2919	-0.2969	-0.2766	-0.1565	-0.0991	-0.1112
2	-0.0371	-0.0411	0.0048	0.0092	0.0100	0.0229	0.0437	-0.0057	-0.0121	0.0380	0.0316	0.0148	0.0174	0.0269
3	-0.0315	-0.0427	0.0054	0.0034	0.0152	-0.0114	-0.0770	0.0065	0.0070	-0.0404	0.0003	0.0112	-0.0056	0.0158
4	0.0142	0.0194	-0.0029	-0.0041	0.0254	0.0340	0.0689	0.0556	0.0097	0.0380	0.0335	0.0111	0.0165	0.0299
5	0.0353	-0.0435	0.0086	-0.0207	0.0501	0.0109	0.0646	0.0442	0.0144	0.0804	0.0460	0.0411	0.0110	0.0152
6	0.0512	0.1068	0.0060	0.0076	0.0186	0.0107	0.0310	0.0314	0.0036	0.0375	0.0737	0.0267	0.0057	0.0150
7	0.0164	0.0373	0.0072	0.0064	0.0088	0.0214	-0.0279	0.0170	0.0247	-0.0710	-0.0254	0.0072	0.0057	0.0148
8	0.0230	0.0359	0.0047	0.0071	0.0134	0.0209	0.0608	0.0491	-0.0120	0.1158	0.0409	0.0103	0.0049	0.0146
9	0.0096	0.0527	0.0233	0.0071	0.0053	0.0205	0.0293	0.0111	0.0193	0.0341	0.0107	0.0040	0.0086	0.0145
10	0.0063	0.0326	-0.0113	0.0134	0.0086	-0.0304	0.0696	0.0085	0.0086	0.0361	0.0314	0.0194	0.0063	0.0143
11	0.0158	0.0481	0.0132	0.0551	0.0085	0.0103	0.0652	0.0161	0.0162	0.0349	0.0409	0.0039	0.0041	0.0141
12	0.0249	0.0616	0.0106	-0.0209	-0.0052	-0.0207	0.0131	0.0109	0.0085	0.0337	0.0401	0.0100	0.0034	0.0266
13	-0.0154	0.0727	0.0057	0.0270	0.0131	0.0212	0.0368	0.0084	0.0184	0.0327	0.0338	0.0039	0.0048	0.0260
14	-0.0033	0.0398	0.0140	0.0311	-0.0188	0.0214	0.0126	0.0207	0.0083	0.0317	0.0127	0.0099	0.0156	-0.0589
15	0.0123	0.0515	0.0079	1.0000	0.0191	0.0314	0.0466	0.0326	0.0107	-0.0602	0.0159	0.0068	0.0104	-0.0500

	15	16	17	18	19	20	21	22	23	24	25	26	27	28
15	0.0162	0.0094	-0.0660	-0.0577	-0.0131	-0.0025	-0.0308	-0.0097	0.0062	0.0065	0.0004	-0.0298	0.0091	-0.0105

-14	0.0120	-0.0381	-0.2054	-0.0505	-0.0133	-0.0025	-0.0620	-0.0182	0.0013	-0.0054	0.0010	-0.0206	-0.0033	-0.0106
-13	0.0039	-0.0638	0.1613	0.1002	0.0073	-0.0009	-0.0659	-0.0185	0.0003	-0.0069	0.0043	-0.0415	-0.0075	-0.0107
-12	0.0157	-0.0146	-0.0660	-0.0902	0.0134	-0.0017	-0.0331	0.0075	-0.0036	0.0111	0.0026	-0.0199	-0.0034	0.0270
-11	0.0312	-0.0016	-0.2054	-0.0485	-0.0066	-0.0009	-0.0653	-0.0187	0.0005	-0.0158	0.0015	-0.0097	-0.0076	-0.0197
-10	0.0161	-0.0130	-0.1613	-0.0505	-0.0278	-0.0017	-0.0611	-0.0190	0.0126	-0.0036	0.0010	-0.0193	-0.0034	-0.0107
-9	-0.0082	-0.0157	-0.1483	-0.0526	-0.0069	-0.0032	-0.0280	-0.0077	0.0004	-0.0010	0.0006	-0.0097	-0.0093	-0.0107
-8	-0.0248	0.0098	-0.1613	-0.0450	0.0142	-0.0016	-0.0272	0.0166	0.0063	-0.0025	0.0006	-0.0194	-0.0092	0.0177
-7	0.0252	0.0116	-0.0768	-0.0902	0.0070	-0.0025	-0.0569	0.0163	0.0096	-0.0055	0.0015	-0.0198	0.0092	0.0174
-6	0.0123	0.0078	0.2254	-0.0384	0.0146	-0.0009	-0.0602	0.0074	0.0054	-0.0055	0.0006	-0.0201	0.0091	0.0170
-5	0.0040	-0.0090	0.1929	-0.0366	0.0231	-0.0017	0.0299	-0.0158	0.0046	-0.0071	0.0011	-0.0101	0.0090	0.0077
-4	0.0080	-0.0035	-0.0823	-0.0850	0.0226	-0.0008	0.0289	0.0071	0.0038	0.0041	0.0020	0.0201	0.0090	0.0076
-3	0.0121	-0.0111	-0.0054	-0.0485	0.0076	-0.0016	0.0280	0.0071	0.0079	0.0083	0.0015	0.0098	-0.0114	0.0164
-2	0.0163	-0.0055	-0.2446	-0.0505	0.0148	-0.0024	-0.0558	0.0070	0.0046	0.0052	0.0022	0.0099	-0.0115	0.0074
-1	0.0123	0.0002	-0.0721	-0.0902	0.0146	-0.0017	-0.0284	0.0069	0.0003	-0.0036	0.0004	0.0098	-0.0075	-0.0186
0	-0.0123	-0.0060	-0.0768	-0.1789	-0.0206	-0.0025	-0.0569	-0.0175	-0.0028	-0.0056	-0.0090	-0.0099	-0.0133	-0.0101

1	2	3	4	5	6	7	8	9	10	11	12	13	14
-0.1158	-0.2483	-0.3900	-0.1629	-0.0639	-0.1574	-0.2072	-0.2988	-0.0339	-0.2259	0.1223	-0.1388	0.1604	-0.2845
-0.0141	-0.0055	0.2446	-0.0675	-0.0149	-0.0107	-0.0754	-0.0223	-0.0072	-0.0225	-0.0144	-0.0231	-0.0303	-0.0384
0.0284	0.0160	-0.1054	-0.0717	0.0081	0.0067	0.0386	0.0217	0.0064	0.0201	0.0089	-0.0237	0.0104	-0.0270
0.0091	0.0365	-0.0054	0.0664	0.0081	0.0038	0.0756	0.0212	0.0098	0.0292	0.0147	0.0119	0.0150	0.0118
0.0228	0.0073	0.1057	-0.0717	0.0156	0.0028	0.0344	0.0207	0.0089	0.0080	0.0046	0.0237	0.0148	0.0247
0.0133	0.0149	0.0946	0.0664	0.0079	0.0018	0.0676	-0.0443	0.0055	0.0098	0.0080	0.0115	0.0192	0.0240
-0.0089	0.0322	0.0855	0.0616	0.0078	0.0104	0.0632	0.0549	0.0046	-0.0068	0.0091	0.0228	0.0144	0.0604
0.0177	0.0265	-0.1721	0.0575	0.0078	0.0131	0.0289	0.0200	0.0080	0.0116	0.0102	-0.0339	0.0142	0.0568
0.0130	0.0069	0.2946	-0.1227	0.0224	0.0111	0.0280	0.0300	0.0088	0.0082	0.0095	0.0231	0.0184	0.0207
0.0042	0.0234	-0.0823	0.1950	0.0148	0.0101	0.0272	0.0290	0.0054	0.0273	0.0016	-0.0342	0.0181	0.0309
0.0257	-0.0048	0.1613	-0.1161	0.0075	0.0127	-0.0291	0.0674	0.0005	0.0182	0.0016	0.0234	0.0093	0.0299
0.0083	-0.0095	-0.0768	0.1825	0.0074	0.0098	-0.0585	0.0171	0.0087	0.0161	0.0016	0.0228	0.0092	0.0290
-0.0084	0.0352	0.1484	0.0476	0.0144	0.0195	0.0289	0.0167	0.0079	0.0108	-0.0006	0.0223	0.0118	0.0281
-0.0043	-0.0138	-0.2054	0.0450	-0.0134	0.0095	-0.0896	0.0164	0.0046	0.0309	0.0077	0.0218	-0.0119	0.0177
-0.0127	0.0161	0.0779	-0.0526	-0.0066	0.0190	-0.0336	-0.0100	-0.0019	0.0267	0.0071	0.0106	0.0265	0.0174

Appendix IV: Cumulative Abnormal Returns

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
-15	0.0029	-0.0266	-0.0047	0.0039	-0.0099	-0.0103	0.03407	-0.0008	0.007	-0.0663	0.0146	-0.0048	0.0108	-0.0237
-14	0.0088	-0.0538	-0.0061	-0.0107	-0.0244	-0.0208	0.05644	0.0132	0.012	-0.0301	0.0487	-0.0067	0.0046	-0.0352
-13	0.0146	-0.0297	0.0011	-0.0027	-0.0345	-0.0001	0.06796	0.0397	0.021	0.0393	0.0009	-0.0144	0.0003	-0.0079
-12	0.0174	-0.0695	0.004	-0.0012	-0.0494	0.01	0.05875	0.0575	0.028	0.0719	-0.0217	-0.0193	-0.0033	-0.0193
-11	0.0143	-0.0583	-0.0017	-0.0058	-0.0453	0.02	0.08068	0.067	0.033	0.1036	-0.0607	-0.0154	-0.0042	-0.0308
-10	0.0231	-0.0342	-0.0053	-0.0135	-0.0412	0.0398	0.05117	0.0805	0.04	0.1343	-0.072	-0.0058	-0.005	-0.0425
-9	0.0318	-0.0107	-0.0079	-0.0231	-0.0323	0.0495	0.09438	0.066	0.047	0.1641	-0.0549	-0.002	-0.0052	-0.0675
-8	0.0287	0.0121	-0.0126	-0.0475	-0.0189	0.0397	0.07527	0.0613	0.04	0.1074	-0.0452	-0.0039	-0.0061	-0.0527
-7	0.0227	0.0223	-0.0162	-0.0395	-0.0149	0.0592	0.05575	0.0483	0.083	0.0775	-0.0378	-0.0087	-0.0063	-0.0247
-6	0.0167	0.0323	-0.0144	-0.0367	-0.0202	0.0686	0.0358	0.0476	0.094	0.1404	-0.0347	-0.0165	-0.0043	-0.0105
-5	0.0106	-0.0049	-0.0126	-0.0507	-0.0255	0.078	0.02615	0.0468	0.087	0.1115	-0.0242	-0.0185	-0.001	0.0037
-4	0.0134	-0.019	-0.0063	-0.1089	-0.0029	0.0873	0.04899	0.0565	0.115	0.1422	-0.0063	-0.0088	0.0016	0.0176
-3	0.0103	0.0038	-0.0056	-0.1406	-0.0127	0.0685	0.06073	0.062	0.119	0.172	-0.0442	-0.0108	0.0035	0.0314
-2	0.0042	0.0261	-0.0038	-0.123	-0.0041	0.0589	0.08288	0.0613	0.126	0.2296	-0.0422	-0.0157	0.0138	0.0451
-1	-0.002	0.0124	-0.002	-0.0562	0.0043	0.0684	0.05305	0.071	0.136	0.257	-0.038	-0.003	0.0095	0.0586

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
0	-0.0112	-0.0014	-0.0067	0.1487	0.0507	0.0777	0.08606	0.0889	0.131	0.2311	-0.0767	-0.0079	0.0135	0.0237
1	-0.1028	-0.3888	-0.157	-0.1792	-0.1566	-0.1016	-0.22211	-0.2369	-0.16	-0.0658	-0.3533	-0.1644	-0.0857	-0.0875
2	-0.1399	-0.4299	-0.1523	-0.1884	-0.1466	-0.0788	-0.26579	-0.2427	-0.172	-0.1038	-0.3849	-0.1496	-0.0683	-0.1143
3	-0.1714	-0.4726	-0.1577	-0.1918	-0.1314	-0.0901	-0.34282	-0.2362	-0.179	-0.0634	-0.3846	-0.1384	-0.0739	-0.0985
4	-0.1571	-0.4532	-0.1606	-0.1959	-0.106	-0.0562	-0.27392	-0.1806	-0.189	-0.1015	-0.3511	-0.1274	-0.0574	0.0687
5	-0.1218	-0.4967	-0.152	-0.2166	-0.056	-0.0453	-0.20933	-0.1364	-0.175	-0.021	-0.3051	-0.0863	-0.0464	-0.0535
6	-0.0706	-0.3899	-0.146	-0.2089	0.0373	-0.0346	-0.17838	-0.105	-0.171	0.0164	-0.2314	-0.0597	-0.0408	-0.0385
7	-0.087	-0.3526	-0.1388	-0.2025	-0.0285	-0.0132	-0.20626	-0.0879	-0.146	-0.0546	-0.2568	-0.0525	-0.0351	-0.0237
8	-0.064	-0.3167	-0.1341	-0.1954	-0.0151	0.0077	-0.14546	-0.0388	-0.158	0.0612	-0.2159	-0.0422	-0.0302	-0.009
9	-0.0544	-0.2641	-0.1108	-0.1883	-0.0204	0.0282	-0.11619	-0.0277	-0.139	0.0271	-0.2052	-0.0382	-0.0216	0.0054
10	-0.0482	-0.2315	-0.1221	-0.1749	-0.0118	0.0022	-0.0466	-0.0192	-0.131	0.0633	-0.1738	-0.0188	-0.0153	0.0197
11	-0.0324	-0.1833	-0.1089	-0.1198	-0.0033	0.0081	0.0186	-0.0031	-0.114	0.0982	-0.1328	-0.0148	-0.0112	0.0338
12	-0.0075	-0.1217	-0.0983	-0.1408	-0.0085	-0.0127	0.03175	0.0079	-0.106	0.1319	-0.0928	-0.0049	-0.0078	0.0604
13	0.0229	-0.049	-0.0927	-0.1138	0.0046	-0.0339	0.06856	0.0163	-0.087	0.1646	-0.059	-0.001	-0.003	0.0864
14	-0.0261	-0.0092	-0.0787	-0.0826	-0.0142	-0.0125	0.08116	0.037	-0.079	0.1962	-0.0462	0.0089	0.0126	0.0275
15	-0.0138	0.0423	-0.0708	1.0827	-0.0333	0.019	0.12771	0.0696	-0.068	0.1361	-0.0303	0.0157	0.023	-0.0225

	15	16	17	18	19	20	21	22	23	24	25	26	27	28
-15	0.0162	0.0094	0.066	-0.0577	-0.0131	-0.0025	-0.0308	-0.0097	0.0062	0.0065	0.0004	-0.03	0.0091	-0.01
-14	0.0282	0.0476	-0.1394	-0.0071	-0.0265	-0.005	-0.0927	-0.0279	0.0075	0.0012	0.0014	-0.05	0.0058	-0.021
-13	0.0321	-0.0162	0.0219	0.0931	-0.0192	-0.0059	-0.1586	-0.0464	0.0072	-0.0058	-0.0029	-0.009	-0.002	-0.032
-12	0.0478	-0.0308	0.0879	0.1833	-0.0326	-0.0076	-0.1255	-0.0389	0.0036	0.0053	-0.0003	0.011	-0.005	0.005
-11	0.0166	-0.0324	-0.1175	0.1348	-0.0392	-0.0085	-0.0602	-0.0576	0.0041	-0.0105	0.0012	0.0206	-0.013	-0.024
-10	0.0005	-0.0454	0.0438	0.0843	-0.067	-0.0102	0.0009	-0.0765	-0.0085	-0.0069	0.0022	0.0399	-0.016	-0.035
-9	-0.0078	-0.0298	-0.1045	0.0317	-0.0739	-0.007	0.029	-0.0688	-0.0089	-0.0078	0.0016	0.0303	-0.007	-0.046
-8	-0.0325	-0.02	0.0568	0.0766	-0.0881	-0.0054	0.0562	-0.0522	-0.0026	-0.0103	0.001	0.0109	0.0023	-0.028
-7	-0.0073	-0.0084	-0.02	0.1669	-0.0951	-0.0079	-0.0007	-0.0359	0.007	-0.0158	0.0025	-0.009	0.0115	-0.011
-6	0.005	-0.0006	0.2054	0.2053	-0.1097	-0.0088	-0.0609	-0.0286	0.0124	-0.0214	0.0019	-0.029	0.0206	0.006
-5	0.0089	-0.0096	0.0125	0.2419	-0.0866	-0.0105	-0.031	-0.0128	0.017	-0.0285	0.0007	-0.019	0.0296	0.014
-4	0.017	-0.0131	-0.0699	0.1569	-0.064	-0.0097	-0.0021	-0.0056	0.0208	-0.0326	0.0028	0.0011	0.0385	0.022
-3	0.0048	-0.0241	-0.0753	0.1084	-0.0564	-0.0081	0.026	0.0014	0.0287	-0.0242	0.0043	0.0109	0.0272	0.038
-2	-0.0115	-0.0296	0.1693	0.0579	-0.0416	-0.0057	0.0817	0.0084	0.0332	-0.019	0.0021	0.0009	0.0157	0.045

	15	16	17	18	19	20	21	22	23	24	25	26	27	28
-1	0.0008	-0.0294	0.0973	0.1481	-0.0271	-0.0074	0.0534	0.0154	0.0329	-0.0154	0.0025	0.0107	0.0082	0.027
0	-0.0115	-0.0234	0.0205	-0.0308	-0.0477	-0.0099	-0.0036	-0.0022	0.0302	-0.021	-0.0065	0.0007	0.0215	0.017
1	-0.1273	-0.2717	-0.3696	-0.1937	-0.1116	-0.1673	-0.2108	-0.3009	-0.0037	-0.2469	-0.1288	-0.138	-0.139	-0.268
2	-0.1414	-0.2772	-0.125	-0.2613	-0.1265	-0.1566	-0.2862	-0.2787	-0.0109	-0.2244	-0.1143	-0.161	-0.109	-0.306
3	-0.113	-0.2932	-0.2303	-0.333	-0.1184	-0.1499	-0.2476	-0.257	-0.0045	-0.2044	-0.1055	-0.185	-0.098	-0.333
4	-0.1039	-0.2567	-0.2357	-0.2666	-0.1103	-0.1462	-0.1721	-0.2358	0.0053	-0.1752	-0.0908	-0.173	-0.083	-0.321
5	-0.0812	-0.2494	-0.13	-0.3382	-0.0946	-0.1433	-0.1377	-0.2151	0.0142	-0.1672	-0.0862	-0.149	-0.068	-0.297
6	-0.0678	-0.2346	0.0354	-0.2718	-0.0868	-0.1415	-0.0701	-0.2593	0.0197	-0.1574	-0.0781	-0.138	-0.049	-0.273
7	-0.0767	-0.2023	0.0501	-0.2102	-0.0789	-0.1311	-0.0069	-0.2044	0.0243	-0.1641	-0.069	-0.115	-0.035	-0.212
8	-0.059	-0.1758	-0.122	-0.1527	-0.0711	-0.1179	0.022	-0.1844	0.0323	-0.1525	-0.0588	-0.149	-0.021	-0.155
9	-0.046	-0.1689	0.1726	-0.2754	-0.0487	-0.1068	0.05	-0.1544	0.0411	-0.1443	-0.0493	-0.126	-0.002	-0.135
10	-0.0418	-0.1455	0.0903	-0.0804	-0.034	-0.0968	0.0773	-0.1254	0.0465	-0.117	-0.0477	-0.16	0.0159	-0.104
11	-0.0161	-0.1502	0.2516	-0.1966	-0.0265	-0.0841	0.0481	-0.058	0.047	-0.0988	0.0461	-0.137	0.0252	-0.074
12	-0.0078	-0.1597	0.1747	-0.0141	-0.0191	-0.0743	-0.0104	-0.041	0.0557	-0.0827	0.0445	-0.114	0.0345	-0.045
13	-0.0162	-0.1245	0.3232	0.0335	-0.0047	-0.0547	0.0185	-0.0242	0.0636	-0.0719	0.0452	-0.091	0.0227	-0.017
14	-0.0205	-0.1384	0.1178	0.0785	-0.0181	-0.0452	-0.0711	-0.0078	0.0681	-0.041	-0.0374	-0.07	0.0108	0.001
15	-0.0332	-0.1223	0.1957	0.0258	-0.0248	-0.0262	-0.1047	-0.0178	0.0662	-0.0143	-0.0303	-0.059	0.0373	0.018

65