THE REACTION OF FINANCIAL MARKETS TO TERRORIST ACTIVITIES IN KENYA

BY:

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17th OCTOBER 2013

DECLARATION

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

Signed.....

Date.....

JOSHUA S. MOILO

REG. NO. D61/60409/2010

This research project has been submitted for examination with my/our approval as university supervisor

Sign…… Date……

MR. J. BARASA

DEDICATION

To

My lovely wife

Agnes Saidimu

(Your support was invaluable)

and

My dear children,

Meshack Lempiris

Patience Naserian:

(That you excel beyond this)

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ABSTRACT

The performance in the financial sector is expressed mainly in terms of the behavior of the capital markets as express by the changes in stock prices which affect the overall value of the listed firms. The main indexes used in analyzing the capital market performance are the NSE 20 share index, the All share index, Market adjusted abnormal returns and the cumulative average abnormal returns among others. This study therefore was conducted with the objective to analyze the reaction of the financial market to terror activities in Kenya as presented by changes in stock prices of the firms listed in NSE. The study used secondary data from the NSE. over the study period as from 1975 and January 2013.The date of each terror activity was the event date for this study and the focus was on, the US embassy (1998), Kikambala attack (2002), Uhuru park attack (2010), Alshabaab attacks on Oct 24th 2011, May 15th 2012, and January 16th 2013. The reaction of the NSE has been focused as reflected by the movement on the stock prices for the study period. Data analysis involved preparation of the collected data, coding, editing and cleaning of data in readiness for processing using SPSS. In the analysis, t-test was used to determine the significance of the stock movement to the attacks. The study has established statistically insignificant reaction is observed days prior to attack dates since the MAAR reaction were all insignificant though negative in most of the attacks. The statistically not significant results show that the NSE market is a bit efficient and adjust quickly to the terrorist attacks. The insignificant reaction is continued to be observed even days after the attack. The analysis of the CAR reveals statistical significance effects on the days before and after attacks. This indicates that the cumulative abnormal returns as a result of the attack over the event period is more significant as compared to the daily market adjusted abnormal returns. It was revealed that a stock can react differently to different event as well as different event having varying effect on the different stocks. This study based on the findings recommends that the government takes decisive measures to prevent and manage the terrorist attack on the country. Investors are recommended to explore ways of mitigating risks against the terrorist attacks as it is evidenced that it affects their wealth in the held in securities traded at the NSE.

CHAPTER ONE

INTRODUCTION

1.1 Background

There is no a commonly agreed definition of terrorism yet, however several groups have come with different definitions depending on their perspective of terrorism. Some of the definitions are as follows:

The United Nations General Assembly Resolution 49/60 (adopted on December 9, 1994), describe terrorism as: Criminal acts intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes are in any circumstance unjustifiable, whatever the considerations of a political, philosophical, ideological, racial, ethnic, religious or any other nature that may be invoked to justify them. **UN Security** Council Resolution 1566 (2004) gives a definition: criminal acts, including against civilians, committed with the intent to cause death or serious bodily injury, or taking of hostages, with the purpose to provoke a state of terror in the general public or in a group of persons or particular persons, intimidate a population or compel a government or an international organization to do or to abstain from doing any act.

The **United Kingdom's Terrorism Act 2000** defines terrorism to include an act "designed seriously to interfere with or seriously to disrupt an electronic system". An act of violence is not even necessary under this definition.

Terrorist groups project all sorts of pejorative attributes onto their target groups in a way to dehumanize them. Thus, violence can be directed without much remorse against the dehumanized members of the target group. Terrorism, moreover, is a major violation of one of the most fundamental human rights, the right to life. By creating a climate of fear terrorism also violates every individual's right to live free from fear. Terrorism is not just a crime but a different dimension of crime, a higher, more dangerous version of crime, and a kind of super crime incorporating some of the characteristics of warfare,(P. Fletcher, 2006).

In summary as indicated in the various definitions, terrorism is characterized by: indiscriminate and random killing of persons, especially civilians and non-combatants, assassinations, emphasis on the surprise nature of attacks, the quest for shocking the community through media coverage and existence of a self-proclaimed political agenda or "cause" to justify those attacks, destruction of lives and resources.

Root causes includes: Rapid modernization and urbanization are strongly correlated with the emergence of ideological terrorism, Lack of democracy, civil liberties and the rule of law is a precondition to many forms of domestic terrorism, Historical antecedents of political violence, Repression by foreign occupation or colonial powers and Perceived feelings of discrimination based on ethnic or religious origins. Trigger causes on the other hand are; Events that call for revenge or action (i.e. contested elections, police brutality, etc.), Lack of opportunity for political participation, Concrete grievances among a subgroup of a larger population (articulated clearly by a leader figure), Importance of belonging to a strong group for development of personal identity and un- trusted peace talks, (Borum, 2003)

Terrorist attacks and other activities affect the security situation of a country including the safety of the assets of investors in the economy. It may also lead to great loss or destruction of resources thereby eroding investor's confidence in the economy. An increase in violence in society decreases the sense of security as people are risk averse, and thus value security. The level of security in a country therefore has an effect its economic performance (Joseph Stiglitzet.al 2008).

1.1.1 Reaction of Financial Market

In Kenya the Capital Market Authority Act specifies the capital market as part of the financial system that provides funds for long-term development. This is a market that brings together lenders (investors) of capital and borrowers (companies that sell securities to the public) of capital.(Laws of Kenya, Cap 485A, 2010). According to Sullivan, 2003 and others, a capital market as a market for securities (debt or equity) from where business enterprises and governments can raise long-term funds. The capital market includes the stock market (equity securities) and the bond market (debt).

The performance in the financial sector is expressed mainly in terms of the behavior of the capital markets as express by the changes in stock prices which affect the overall value of the listed firms. The main indexes used in analyzing the capital market performance are the NSE 20 share index, the All share index, Market adjusted abnormal returns and the cumulative average abnormal returns among others. Kenya is affected by the events in the horn of Africa despite being a potentially prime target for terrorists in its own right. It has substantial Western tourist activities, the headquarters of the United Nations Environment Program and the United Nations Habitat Program, a large number of Western embassies, and several international businesses. Kenya sustained terrible casualties in the bombing of the U.S. embassy in 1998,(Harbeson, 2007). The changes in stock prices are a culmination of the decisions made by the investors' base on the information they have on the specific stock and the entire economy.

1.1.2 Relationship between Terrorist attacks and Financial market reaction

There are various studies that have been undertaken on market efficiency and effect of events on the financial market. Market efficiency is the ability of the financial market to absorb the relevant information such that stock prices reflect the relevant information. The effect of the terrorist attack on the stock prices is therefore influence by the market efficiency level.

Financial markets react to the terrorist activities both in the target country and even in some cases spill over to the related stocks in other countries. Terrorism is an important geopolitical risk that affects the economy and financial markets globally. The immediate

impact of terrorist attack on the financial and commodity markets is increasing the risk aversion of the investors. The expected financial market reaction is a calumniation of the effect of terrorist attack that includes: reduction in investors' confidence, increasing risk aversion by consumers and firms, low consumption and investment in real estate, possibility of economic slowdown or recess, effect on other stock markets, fixed income markets yield currency and even commodity markets. In addition there is the potential impact of psychological fear of terrorism on economic behavior, (Karoly, 2006).

The effect of the terrorist attack on the stock varies depending on the nature of the attack and how the stock is related the terrorist attack target. Some of the stack react to the attack negatively others positively and others mixed, (Karoly,2006). Decisions to buy and sell can quickly, and easily be reversed when information becomes available about a catalytic event—like a terrorist or military attack—investors often flee the market in search of safer financial instruments and panic selling ensues. This initial panic has the potential to turn into chaos and a long-term bear market, or it can be reversed if investors' hopes return,(Chen and Siems, 2003).

Depending on the level of capital market efficiency the stock prices of listed companies reflect all the available information, (Fama 1965, 1970 and 1991). The Nairobi security exchange is considered to have a semi strong level of efficiency which indicates that the stock prices in the market reflect all relevant public information, (Olweny, 2011). Therefore the stock price during a terror attack is expected to reflect all public information including information on terror activity.

The study relies on the theory of market efficiency and its effect on stock prices as regard to publicized information on terrorism.

1.2 Research Problem

Several terror attacks in Kenya have occurred as being fronted by the al-Qaida linked terror group of Alshabaab based in Somalia. In the year 2011 due to the increased terror attacks and its potential negative effect the economy the Kenya government send its defense force to attack alshabaab and the operations is still ongoing.

Terrorist activities affect the security situation of a country leading to travel bans, loss investment properties, scaring away tourist, derailed business operations among other negative effect that have an impact on the operation and profitability business firms. Terrorist attacks are intent on causing fear and instability to the targets, (Frey and Lüchinger, 2004). While death, injury and capital destruction are the most visible effects of a terrorist attack, fear and the indirect effects of terror are harmful to the economy in the longer term, (Bruck and Wickstrom, 2004). It is still therefore a paradox as to whether anti terror measures by the government raise fear of terrorism further or not. The heightened uncertainty reduced spending, slowed down firm investment, led to layoffs and increased unemployment, (Baily, 2001).

Security and stability in the country is of great importance to the investors and they make their decisions on the information available to them about the future. Terror activities affect the decision making process of the investors and thereby the purchase and sale of the stock in the security exchange. The effect of the terror activities to the stock prices of the firm may vary from one sector in the stock market to the other. The decision of the investors taking into account all available information the future is reflected by the changes in the stock prices in the financial market. The main focus of this study is to examine the effect of terror activities on the security prices and subsequent returns on the companies listed in the Nairobi security exchange (NSE).

Most of the event studies undertaken on the financial markets in Kenya are based on the calendar event including the month end effect, January effect, weekend effect, holiday effect among others .most of the calendar event studies on the Nairobi Security Exchange have concluded that the is no significant effect of the events on the stock prices. The other area that have been researched on is the dividend announcement effect revealing indication that dividends announcements have information content that has influence on a firm's future value as reflected by the reaction of stock prices to such information (Olweny, 2011). Other research studies have focused on the market efficiency with most of the conclusion being that the Nairobi Security exchange has as semi-strong level of efficiency. This indicates that the stock prices reflect all the publicized information that may influence the investor's decision on the stocks.

Globally, previous studies the impact of terrorism on security prices have focused on the impact of a single, large-scale terrorism-related event – such as, the attacks of "9/11" (Hon, Strauss and Yong, 2003; Burch, Emery and Fuerst, 2003; Poteshman, 2006) or the passing of 2002 U.S. Terrorism Risk Insurance Act (TRIA), (Brown, Cummins, Lewis and Wei, 2004). We, by contrast, focus on multiple and firm-specific terrorism-related events spread out over an eight-year period (1995-2002). Other scholars have gone a step further to more specific cases. This include, for example, (Chen and Seims, 2004) who study the impact of six major events (e.g., 1941 Pearl Harbor attack, 1990 Iraqi attack on Kuwait) on national market index returns, Berrebi and Klor (2010) that focuses only on attacks of Israeli companies during 1998-2000 or Doherty, Lamm-Tennant and Starks (2003) that examines only TRIA-affected U.S. industries around the Act's passage in Congress.

However there has been limited focus on the effect of information on terror activity on the capital market performance. Kenya has increasing experience terror activities especially by the Alshabaab which operates from Somalia. In a bid to secure its territory and ensure a secure business environment for investors, the government sent its army in October 2010 to eliminate and curtail the activities of the terror group. The group responded by carrying out several grenade attack in the north eastern, Mombasa and the capital city Nairobi. There is need therefore to study the reaction of the capital market to this new scenario.

The main event-study test is to determine whether the financial market experienced significant abnormal returns in response to any of these past events as expressed by the movement in the security prices.

The research questions therefore will be: are the terrorist and counter military attacks associated with significant negative abnormal returns in Kenya financial market? And, if so, to what extend?

Which events resulted in the most negative returns? For which events did the markets seem to rebound the quickest?

1.3 Research Objectives

The objective of this study was to analyze the reaction of the financial market to terror activities and related counter military attacks in Kenya as represented by the changes in stock prices of the firms listed in the Nairobi security exchange.

1.4 Value of the Study

The study would add knowledge to the field of investment decisions which is an important thematic area in finance and specifically the aspect of market efficiency.

Primarily the study presenting useful theories and studies of renowned researchers and performing a fresh and incisive interrogation on them, thereby affording valuable contributions to the raging debate on market efficiency and the effect of terrorism to the economies of affected countries.

The study could be of value to the government as it brings out the relation between terror activities and the capital market and thereby helps to understanding the importance of taking action in respond to the terror activities.

Investors would benefits from this study as it has given insight on the effect of their decision in response to terror activities to the overall performance of the capital market and the financial sector.

Academicians would benefit from this study as it has recommended areas for further studies in the effect of terrorism to the global economies of the world and especially the African economies in which the terrorism phenomenon is relatively new.

CHAPTER TWO

LITRATURE REVIEW

2.1 Introduction

This chapter focuses on the review of market efficiency theory and the effect of terrorism activities on the financial market through presentation of literature on the concepts of market efficiency, terrorism, event studies and its relevance to the investor's decisions. The reaction of the financial market relies on the market efficiency. The world has become a small village and led to a lot economic interdependency making the economic impact of some events including terrorist attacks increasingly transnational. Incidents of terrorism at the national level may have spillover effects that can harm other countries (Steen et al, 2006).

2.2 Theoretical Literature Review

2.2.1 Market Efficiency theory

Back in the 16th century the prominent Italian mathematician, Girolamo Cardano, in The Book of Games of Chance, (Cardano, 1564) wrote: 'The most fundamental principle of all in gambling is simply equal conditions. A market in which prices at any time "fully reflect" available information, is called an "efficient" market,(Fama, 1970). According to Lindner,(2010)and others defined market efficiency as the state where by the current market price and the fair value resemble as all pertinent information is incorporated immediately. It thrives on the fact every investor try to be the first to get the information that will affect security prices and by trading on this information, the price will quickly reflect the new information. The action will cause a change in the prices either up or down but if the change become significant then other investors will also join in and the effect is stabilize by counter reactions by investors.

Information on security threat is pertinent to the investors as it has an effect on their confidence in the economy. The level of risk that can be tolerated by the investors can be different and therefore their response to terror related activity is also different. This is translated to the investor's decision to buy or sale securities in the market, and thereby affects the stock prices. An efficient market will therefore have stock prices that reflect all the pertinent information that the investors have including security.

Malkiel (1992) noted that a capital market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices. Dyckman and Morse (1986) state " A security market is generally defined as efficient if (1) the price of the security traded in the market act as though they fully reflect all available information and (2) these prices react instantaneously, or nearly so, and in unbiased fashion to new information". The alternative hypothesis is that security market is inefficient and that result of stock price is not accurately reflecting the new information. This might result from the following: the investor is unable to interpret the new information correctly; the investors have no access to the new information; the transaction cost in trading security is an obstruction for free trading; the restriction on short sale; and finally, the investors might be misled by the change in accounting principles.

In early analysis of the efficient markets was based on random walk model, which stated that the current price of a security 'fully reflects' available information was assumed to imply that successive price changes are independent and successive changes are identically distributed (Fama 1965). This was refuted by Steiger (1964) who tested for non-randomness and concluded that stock prices do not follow a random walk.

2.2.1.1Market Efficiency Levels

Harry Roberts (1967) coined the term efficient markets hypothesis and made the distinction between weak and strong form tests, which became the classic taxonomy in Fama (1970). Fama(1970) published a review of both the theory and the evidence for the hypothesis. The paper extended and refined the theory, included the definitions for three forms of financial market efficiency: weak, semi-strong and strong.

There are three levels of capital market efficiency explained in the context of information effect on stock prices, (Fama, 1970). This includes : strong – form where all information

are incorporated in prices and no monopolistic information that can entail profit, Semi – strong form and finally the weak efficiency form it is just the historical information that is reflected. In this study the efficiency of Nairobi security market will also be reflected.

2.2.1.2 Strong – form of Market efficiency

This is where all information is incorporated in prices and no monopolistic information that can entail profit. The main studies in this area are on the aspects of

a. ***Insider Trading***: Penman (1982) examines the insider trading around earning forecasting announcement. He found that insiders buy shares before the announcement and sell their shares after the announcement, by which they can achieve high abnormal return. Therefore, insiders do indeed have private information that is not impounded in the stock price.

b. ***Return and Trading volume***

Morse (1980) found a grater trading than normal a day before public announcement. Keown and Pinkerton (1981) observe high abnormal return and trading volume prior to merger announcement.

2.2.1.3 Semi strong – form of Market Efficiency

This form of efficiency requires that all public information (including announcement) are already reflected in the prices. The theoretical foundation in this area has been based on the following aspects

a. Stock splits

Fama, Fisher, Jensen and Roll (1969) performed the first test for semi-strong market efficiency. Using risk-adjusted return to test for market efficiency with respect to the announcement of stock split, they found a considerable high abnormal return prior to the announcement of stock split.

b. Block Trading

Hess and Frost (1982) investigated the effect of the sudden sale of a large number of stocks in the market and found that there is a significant drop in price, but after a short period stock price rebounds to its prior level.

c. Dividend announcements

Petit (1972) found a significant abnormal return following cash dividends announcement. Foster and Vickrey (1978) found stock dividends have information content because the stock price rises at the time of stock dividends announcement which is consisted with efficient market hypothesis (EMH).

2.2.2 Social – political theory

Political theory may be defined as the discipline which aims to explain, justify or criticize the disposition of power in society. It delineates the balance of power between states, groups and individuals. 'Power' is used broadly here: even obedience is an aspect of power, for it connotes deliberate self-restraint by citizens who might otherwise resist the government. Essentially, power lies where resources (personal, economic, moral, and ideological, etc.) lie, and operates through inducements as much as through threats and through the withholding as well as the deployment of resources. People therefore fight for power and the benefits that they attached to it. In the drive for power through violent people of the society may end up destroying there economy by causing fear to the investors as well as destroying infrastructure through destructive terrorist attacks.

Milband, (1969), argues that capitalist particularly those who controls major economic organization enjoy immense and stable political advantage because of their privileged position in the state and therefore can front their own interest even at the expense of the minority interest and these can lead to resistance which in advance stages can result to violence in the society against those in power.

The socio- political theories can explain the fact that, Africa is not immune to the threats from terrorism given its combination of relatively weak states, ethnic and religious diversity and sometimes discrimination, its poverty, and in many places its "ungoverned space" all lend Africa a significant susceptibility to the growth of radical and sometimes internationally connected movements that employ terrorism, (Harbeson, 2007).

2.2.3 Terrorism and socio political theories

Terrorism emanate from a culmination of several socio-political factors that has been analyzed in several socio-political theories. The terror attacks have also produced profound sociopolitical effects in Kenya including; the loss and disruption of lives, harassment of Kenyans by the security forces, further erosion of the country's sovereignty and, rising anti-western sentiments. (Otiso, 2009).

Terrorism in Kenya has also produced geopolitical effects such as tension between the governments of Kenya and Western countries, especially the U.S. and U.K. The tension stems from differences in the perception of the country‘s terrorism risk, the issuance of economically harmful travel advisories on Kenya by western countries such as the U.S. and the U.K. Lugaga 2003, and inability to sustain the high cost of the war on terrorism without adequate international support. This has put Kenya in a tough position because even though ―Kenya is affluent enough by African standards to have western investments and interests, it is without enough money to buy worldwide security, (Jenkins, 2002).The geopolitical tension between Kenya and her western counterparts is also manifested in the growing anti-western and anti-Israeli sentiment, Blair and Sharon (Potter, 2003).

2.3 Empirical Literature Review

2.3.1 Efficient Market theory empirical studies

Rioba (2003) carried a study on the predictability of ordinary stock returns at the Nairobi Stock Exchange (NSE). He argued that EMH does not imply no costs, or taxes. Neither does it say that there are no clever people and stupid ones, it implies that competition in capital markets is very tough. Thus ability to predict one-period a head should not be construed to mean market inefficiency.

Mburu (2007) studied 20 securities for companies that constitute the NSE 20 share index that remained listed at the NSE and traded between January 2002 and December 2006 with an objective to determine whether trading volume behavior has a significant effect on the stock's price movements. Using Exploratory, population of 53 companies at the NSE and sample of 20 companies actively traded and traded in large volumes was selected. Trends in prices volume sensitivity was used to analyze the data. Correlation

coefficient test were conducted to assess whether there existed significant Co- movement between changes in price indices and volume traded. The findings were the price to volume sensitivity for stock making the NSE 20 share index was not found to deviate from zero hence no significant causal relationship between the stock prices and volume of securities traded at NSE

Nwidobie (2011) undertook a study on efficiency of capital market in Africa with an objective of comparative analysis capital market efficiency specifically in Nigeria, Ghana, Kenya, South Africa, Egypt and Tunisia. the analysis focused on market capitalization and stock turnover in the stocks and securities exchange market of the six countries from year 2000 to 2009 using the value of traded shares as a percentage of market capitalization, stock turnover ratio to measure the liquidity of a market as well as transaction costs which are complimentary as the turnover ratio is related to the size of the market and the value of shares traded ratio to the size of the economy. Data Analysis using the Standards and Poor's (2010) indices obtained from the World Bank's World Development Indicators (2010) of stock turnovers in Nigeria, Ghana, Tunisia, Kenya, Egypt and South Africa revealed that market efficiency eminent at varying degrees and capital market policies that increase stock transaction costs reduce the efficiency of that capital market

2.3.2 11th September 2001 event and other terrorist attacks

The September 11th 2001 terrorist attack on the USA is one of the highly referred to terror activity with most of the scholarly work done on effect of terrorism to financial market and the economies making reference to this event. Chen and Siems, (2003), conducted an event study on the reaction of the US and global financial markets to Terrorist activities. The study focuses on 14 terrorist/military attacks dating back to 1915 and global capital markets' response to two recent events—Iraq's invasion of Kuwait in 1990. They conclude that terrorist attacks and military invasions have great potential to affect capital markets around the world in a short period of time. In today's information-oriented world, news travels very fast and contagion can spread quickly. They also found evidence, however, that U.S. capital markets seem to have become more resilient and are better able to absorb shocks brought on by such events. It was also noted that an

economy's banking/ financial sector seems to be an important force in returning markets to relative stability.

Melvin and Tan (1996) look at the effect of social unrest (riots, demonstrations, armed attacks) on exchange rate spreads and find significant increases in volatility. Choudhry (2003) explored unsuccessfully for evidence of changes after 9/11 in the market betas of selected U.S. companies.

Burch, Emery and Fuerst (2003) study investor reaction to the attacks of 9/11 analyzing share price responses of 310 U.S.-based closed-end funds. They document overreaction in the selling that occurs in the first week after 9/11 followed by a reversal over the next two weeks. Cummins and Lewis (2003) analyze the returns of 43 property-casualty insurers and also find evidence of strong negative reactions to 9/11. Doherty, Lamm-Tennant and Starks (2003) develop testable hypotheses about the cross-sectional variation in the price reaction of the shares of insurance companies following 9/11 from capacity constraint, post-loss investment, and implicit insurance contracts models. They find results that support all three of their hypotheses. Kallberg, Liu and Pasquariello (2008) analyze the behavior of New York real estate investment trusts in response to the 9/11 attack and report an initial positive reaction followed by downward revisions of expectations a couple of weeks after the attacks

Recent research in psychology by Slone (2000) studying the responses of people to media coverage of terrorism provides a plausible explanation for the abnormal returns. The author exposed different groups to television news clips of terrorism and threats to national security. The group exposed to media broadcasts of terrorism news and images displayed a significant increase in anxiety-level changes. Her results could help explain the market losses which are probably greater than what would be warranted from an efficient markets point of view.

Financial instruments involve commitments over time and therefore price and provide a hedge against uncertainty. While the initial effect of any major crisis may involve a financial market overreaction because of higher levels of uncertainty as the new information is being assessed and absorbed, once the long-term impact of the crisis is

assessed, markets return to their pre crisis condition. Thereafter, financial markets shift up or down according to investors' perceptions of how the crisis will be resolved (Taylor, 2004)

The cost of terrorism can be significant and have the potential to affect the economy in the medium term by undermining consumer and investor confidence. Likewise, falling investor confidence may trigger a generalized drop in asset prices and a flight to quality that increases the borrowing costs for riskier borrowers (IMF, 2001b). Bruck and Wicksrom, (2004) found that the size and magnitude of the terrorist attack effect over countries, sectors, and time would depend on a range of factors, including the nature of the attacks, multiplier effects, the type of policies adopted in response to the attacks, and the resilience of the markets.

2.3.3 General election effect in Kenya

Kenyan Elections are currently held after every five years. The elections in the recent periods after the introduction of multiparty elections have attracted a lot of competition and uncertainty on the outcome. The investors and other economic stakeholders will definitely be keen to watch the direction of the country's political elections. The performance of the market appears to be strongly linked to the political events and political regime prevailing. Performance of the market declined steadily from 1997 to 2002 during the last five years of the KANU regime. The market improved steadily after the political transition from KANU to a new Coalition Government in 2003 but declined in 2007 when the country went into another general election. Volatility of the market appears to be lowest in the years just before a general election and also in the election years themselves suggesting that the stock market is not very vibrant as investors wait to see the direction the country will take after the elections, (Kithinji and Ngugi 2012).

In their study Kithinji and Ngugi (2012) using the NSE index found that: the market index declined by 5% but recovered to increases by 7% for the three-month period after the election, that is, by the end of March 1993 after the 1992 elections. In 1997 it decreased by 10% for three months period preceding the election date (held in December 1997) but again recovered slightly to record a 3% increase by end of three months after the elections. Three months before the 2002 elections, the NSE index registered an

increase of 31% followed by a further increase of 18% three months after the elections. The rise in the market performance in the first three months of 2003 followed the smooth transition of the political regime from the Kenya African National Union (KANU) Regime to a new Government Coalition. There was a reversal in the pattern of increase before and after the election date for the 2007 election which saw the NSE index increase by 6% three months before the 2007 but decrease by 11% three months after the general election. This decline may be attributed to the events surrounding the 2007 disputed Presidential election manifested in country-wide violence for most of that three month period. During the four elections held in the period between 1991 and to 2008, the NSE performed better in the election year compared to the year before, viz, 22% in 1992 versus 4% in 1991, 0% in 1997 versus – 10% in 1996 and 1% in 2002 versus – 29% in 2001. In 2007 the NSE index registered a 4% decline compared to a 42% increase in 2008.

The above suggest that events before, during and after the general election may have an impact on the performance of the market as measured by the NSE index. When there is calm in the political front and the transition is smooth, the market might respond by recording an increase in the NSE index, (Kithinji and Ngugi 2012)

2.3.4 Event studies

Market efficiency is now a very popular area of finance studies and numerous empirical researches have been documented since it was introduced by (Fama 1970). Since then all kind of calendar event effects have been documented, this include: weekend effect, January effect, lunar, fall rainfall, temperature effects among others. Haugen &Jorivon (1996) observed that calendar effects should not be long lasting as participants can easily learn from past experiences.

2.3.4.1 Week – end event

This is based on a theory that predicts that the security market is more likely to open lower on Monday that it closed the previous Friday. It refers to the tendency of securities to perform worse on Monday than other days of the week. One reason for such an effect is the practice for companies to wait to release their negative news until after the markets

have closed on Friday. Market behavior is crucial in stock return predictability and knowledge of the market variation is paramount to the investors.

Bett(2011) studied the weekend effect in Uganda Security exchange and concluded that there is no exhibited weekend effect. The study entailed analysis of opening and closing stock prices and calculation of the daily return and carrying out data analysis using Dumm regression multiple method. The period covered was from Jan 2008 t0 31st August 2010.Mokua (2003) in his study on the weekend effect on stocks at the NSE wanted to establish whether stock of companies listed at the NSE were affected by the weekend effect. The period covered was 1996 to 2001. He concluded NSE does not exhibit the weekend effect attributed to a large number of long term investors at the NSE.

2.3.4.2 Month – end event

This is a situation where by on the first day of the month, the stock market is rising strongly as compared to other days of the month. At a markedly higher rate than on other days, the stock market typically rises on the first trading day of the month. Migiro (2008) in his study on turn of the month effect for companies quoted in the NSE. The period covered was from 2006 to 2009 involving all the 47 firms listed and the MIMS, he concluded that the month effect does not exist in the NSE.

2.3.4.3 January effect event

There is a general increase in stock prices during the month of January. This rally is generally attributed to an increase in buying, which follows the drop in price that typically happens in December when investors, seeking to create tax losses to offset capital gains, prompt a sell-off. Rozeff and Kinney (1976) first document the January effect, whereby stock returns are higher, on average, in January than in other months. Banz (1981) and Reinganum (1983) document that the effect is driven by smaller firms (measured by market capitalization), which realize higher average rates of return than do larger firms.

Laura T. S. and Others (2006) conducted a study on the January effect as relates to Municipal bonds, examining turn-of-the-year return and volume patterns for municipal

bond closed-end funds, which are held mostly by tax-sensitive individual investors, we document a January effect for these funds, but not for their underlying assets. Using a sample of 168 municipal bond closed-end funds over the 1990 to 2000 sample period, we they first document that the average January return for municipal bond closed-end funds is 2.21%, which is significantly higher than the average return of −0.19% for the other 11 months of a year. They further established that there exists a direct link between the observed January price effect and the tax-loss selling behavior of individual investors at year-end.

Kamau (2003) in his study of January effect in the NSE wanted to ascertain whether the stock market returns in the NSE were affected by the January effected. The study covered all the companies listed in the NSE for the period 1995 t0 2003. The conclusion was that the January and turn of the month effect do not affect stock prices at NSE.

2.3.4.4 Holiday – end event

This can be described as an advancement of stock prices that is attributed to an increase in buying activity by traders immediately prior to a holiday weekend. Historically, stock prices have advanced disproportionately higher as a percent on pre-holiday trading days than on the other days of the year. This explains the unusually good performance by stocks on the day prior to market-closing holidays.

2.4 Terrorist Attacks in Kenya

Kenya has been the scene of various attacks attributed to terrorist elements. Below is highlight of the terrorist attacks in Kenya.

1975 Nairobi Bombing Incident & J M Kariuki Murder

In early 1975, the first bombs to strike independent Kenya exploded. In February, there were two blasts in central Nairobi, inside the Starlight nightclub and in a travel bureau near the Hilton hotel. After the blast, security officials abducted Mr. JM Kariuki and took him to an unknown destination. The bombings stopped after the news of the disappearance and murder of JM Kariuki became public.

1980 Norfolk Hotel Bombing

The second bombing happened on the Norfolk Hotel on New Year's Eve 1980. In that attack a bomb flattened the Norfolk Hotel in Nairobi, killing 20 people and injuring 80. Responsibility for the attack was claimed by an Arab group that said it was seeking retaliation for Kenya's allowing Israeli troops to refuel in Nairobi during the raid on Entebbe Airport in Uganda four years earlier to rescue hostages from a hijacked aircraft.

1998 Embassy Bombing

The 1998 United States embassy bombings were a series of attacks that occurred on August 7, 1998, in which hundreds of people were killed in simultaneous truck bomb explosions at the United States embassies in the East African capitals of Dar es Salaam, Tanzania, and Nairobi, Kenya. In Nairobi, approximately 212 people were killed, and an estimated 4,000 wounded; in Dar es Salaam, the attack killed at least 11 and wounded 85

2002 Kikambala Bombing

On 28 November 2002 there were missile attacks on an Israel Plane after takeoff from Mombasa airport. Subsequently there was an attack on Kikambala Hotel when they were receiving Israeli tourists. The blast occurred just after some 60 visitors had checked into the hotel, all of them from Israel, hotel officials said. 13 were killed and 80 injured. Ten Kenyans died, nine of whom were employed by the hotel. Police have been seeking Mr. Bajnaf MselemSwaleh Mahdi Khamisi, who they believe may lead them to Fazul, the main suspect

Uhuru park attack

On 13 June 2010, during a "NO" campaign rally; a petrol bomb was thrown into the crowds as the meeting dispersed at dusk, sparking a stampede as people fled. Some witnesses reported that there had been two separate explosions, in Uhuru Park in the centre of the city. Five people were killed and as many as 75 were injured. The meeting

was called by a church leader to campaign against a proposed new constitution in a referendum.

Al-Shabaab attacks

In October 2011, a coordinated operation between the Somali and Kenya military began against the Al – shabaab group of insurgents in southern Somalia. The mission was officially led by the Somali army, with the Kenyan forces providing a support role. Since then, a series of explosions have rocked various areas in Kenya, bombings which are believed to have been retaliatory attacks by Al-Shabaab. In early June 2012, Kenyan forces were formally integrated into AMISON. Some of the reported alshabaab attacks in Kenya are indicated below.

The first attack by al-Shabaab was on a small bar known as Mwaura's in downtown Mfangano Street in Nairobi on Monday, 24 October 2011, at around 1:15 am. The hurled grenade left one person dead and wounded more than 20. A second blast occurred later the same day, when a grenade was tossed out of a moving vehicle into the Machakos bus terminus. 59 men and ten women were subsequently hospitalized, of which two were in intensive care unit and five people were confirmed dead. The attacks came only two days after the United States warned of "imminent" terror attacks. The US warning had implied that al-Shabaab would carry out reprisals in response to Kenyan troops' incursion into Somalia in mid-October. In November 2011, Al-Shabaab attacked several other locations including the East African Pentecostal Church, a military convoy, and a Holiday Inn hotel; some of the attacks resulted in injuries and casualties while some resulted in no injuries.

In March 2012, six were killed and over sixty were injured after four grenades were thrown into a Machakos bus station in Nairobi. On Sunday, 29 April 2012, around 8:50am, an attack took place at God's House of Miracles Church at Ngara Estate in Nairobi. One person died and 11 people were admitted at Kenyatta National Hospital. On Tuesday, 15 May 2012, three hand grenades were hurled at the Bella Vista nightclub in

Mombasa, Kenya, killing one and leaving five others injured. The attacker also fired indiscriminately after he was denied entry into the Bella Vista club.

On Sunday, 24 2012 June at around 10 pm, another grenade attack was reported at a Jericho Beer Garden in Mishomoroniin Mombasa, Kenya. The grenade killed one person on the spot while two more died due to injuries later. On 1 July 2012, masked gunmen attacked two churches (the Central Catholic Cathedral and AIC churches) simultaneously in Garisa. The assailants killed seventeen people and left fifty injured. On 30 September, at around 10:30am, a 9-year old boy was killed when a grenade was hurled towards Sunday school children at St Polycarp Anglican Church along Juja road in Nairobi. On Sunday, 18 November 2012, ten people were killed and 25 seriously injured when an explosive went off on a mass transit mini-bus (matatu) in Eastleigh. The explosion is believed to be an improvised explosive device or bomb of some sort. On Friday, 7 December, 5 people were killed and 8 others injured in an explosion near a mosque in the Eastleigh area of Nairobi.

On 4 January 2013, two people were killed and seven wounded in a grenade attack at Dagahale area in Garissa. Four people including three police officers were seriously wounded in a grenade attack on a police car in Garissa town. On 16 January 2013, suspected Islamic militants shot dead 5 people and injured 3 others at a restaurant in the eastern city of Garrisa. On the evening of 18 April 2013 four armed men walked into the KwaChege Hotel in Garissa and started shooting. At least six people were shot dead and 10 others seriously wounded.

Summary

From the studies on the market efficiency it's clearly revealed that there are different levels of market efficiency. Market efficiency is key to this study as it's about the ability of the financial market to absorb the relevant information that affects the investor's decision as reflected the stock prices in the market. The studies have revealed that the NSE has a semi – strong level of efficiency meaning that the security prices in the market has incorporated the effect of all publicized information. For this study it will mean that

the stock prices on the day and after the terror attack event has taken into account the investors believe and interpretation of the terror activity effect.

The calendar event studies are important as the provide evidence that the financial market reacts to external event and the securities prices may be affected. This is important to this study as the focuses on reaction of the financial market to terrorist attacks as events. The studies have indicated not existence of a significant calendar event effect on the Nairobi Security exchange. Given the evidence from other studies relating the terror attacks this study aims at analyzing the existent of the terror attack effect the NSE. The design of the study will therefore borrow from the other scholarly event studies on this area.

The literature on the studies on effect of terrorism globally have focused on the major terror activity especially the 9/11 and Madrid terror attack on the US and Spain respectively. Few studies on the specific effect of terror attacks on the financial market of other countries have been done. The previous studies on the subject have revealed existence of significant terror attack effect of the financial market of the affected countries leading to economic loss. The studies have further indicated that the impact and magnitude of the effect varies from countries to countries depending on the economic policies in place, and the nature of the target and attack among other factors. This study will therefore take the research on this subject to another step ahead by focused on the specific effect of terrorist attack to the Kenyan financial market. The previous studies on this subject will provide the required input on the design and approach of this study. In conclusion therefore the above literature work support and justify the course of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is an outline indicating how the study is conducted. It entails details on the design, data collection and how the data has been analyzed. This study had an event study methodology as explained below.

3.2 Research design

This was an event study. An event study measures the impact of a specific event on the value of the firm and relies on market efficiency. An event study is concerned with the impact of an event on corporations. In particular, researchers are concerned with the hypothesis that an event will impact the value of a firm or firms, and that this impact will be reflected stock and other security prices, manifesting itself in abnormal security returns. The main methodology for this study was event studies. According to Bodie, et al, (1999), an event study describes a technique of empirical financial research that enables an observer to assess the impact of a particular event on a firm's stock price.

The securities exchange market performance before and after the terrorist attack in Kenya has been analyzed. The period of study focused on NSE performance for the period between 1975 and January 2013 as it covers the period from when the first terror attack was experienced in Kenya up to the current period when the country is the target of terror attacks especially fronted by the Alshabaab in Somalia.

The reaction of the financial market to terror activities has been analyzed by establishing if there is abnormal return in the event of terror attack. The behavior of the stock prices before, during and after the terror attack has been analyzed and compared.

The dependent variable was the measures of market value of the firm in the Nairobi Security Exchange: The change in share price due to the terrorist related activity or event. The stock prices before the event and after the event are compared and an arithmetic mean of change determined. The movement in the stock prices has been measured on occurrence of an alshaabab related activity or event. The dependent variable has been measured by the changes in the stock returns.

The study was based on the secondary data published related to alshabaab terror activities in Kenya and the share prices as published by the Nairobi Security Exchange. This was done through review of journals, publications, reports, articles and literature already done by other scholars on the impact of terror activities on capital market operation, market efficiency as regard to information on terror activities.

Internal validity is concerned with the degree of certainty that observed effects in an experiment are actually the result of the experimental treatment or condition (the cause), rather than intervening, extraneous or confounding variables while external validity is concerned with the degree to which research findings can be applied to the real world, beyond the controlled setting of the research.

This study enhanced external validity by choosing a sample that was representative of the population and hence the results of the study were easily inferred to all terrorist activities in Kenya.

This study enhanced internal validity by:

- Increasing the control of the variables being tested.
- Ensuring that the data collected was correct, relevant and consistent

3.3 Population and Sample design

The dependent variable as explained above was the stock return for shares listed in the Nairobi security exchange in the period under review. The population of the dependent variable was all the firms listed in the Nairobi security exchange on the event dates as published in the NSE website. The sampling frame will be the list of the companies traded over the event window period.

Random sampling will be used to pick the top five mostly traded stocks over the event window of 30 days before and 30 days after the event.

3.4 Data collection

The study used secondary data from the NSE. Data was obtained from the NSE over the study period as from 1975 and January 2013.The date of each terror activity was the event date for this study the focus will be major terror attacks which include, the US embassy (1998), Kikambala attack (2002), Uhuru park attack (2010), Alshabaab attacks on Oct 24th 2011, May 15th 2012, and January 16th 2013. The reaction of the NSE has been focused as reflected by the movement on the stock prices for the study period.

The target population is the larger group to which the researcher hopes to generalize the findings. The sample frame of the study will consist of all companies listed in the Nairobi Securities Exchange whose stocks were traded over the event period. This will be identified from the Daily market activities report as published in the NSE Website.

3.5 Data Analysis

The main data variable for this study was the stock prices and the main data source for analysis will be secondary data. The secondary data is the data, which is already in existence. It was collected mainly through internet, books, article, journals and Periodicals. The change in stock return established trends and behavior of the dependent variable identified in this study.

In order to study the impact of terrorist activities on shareholders' value two measures were used in this study as follows:

a. Daily market-adjusted abnormal return (MAAR):

MAAR indicates the relative daily percentage price change in each stock compared to the change in average market price. The NSE all-share price index was used as the proxy of average market price. Since it is adjusted with the percentage change in market index (average market price) is the residual change in value is the one specific to each stock form the effect the terror activity. MAAR is calculated over a period starting to –30 days to +30 days relative to the event occurrence day (0-day).

MAAR is calculated as follows:

$MAAR_{it} = R_{it} - R_{mt}$

Where:

MAARit is the market adjusted abnormal return for security i over time t

Rit is the time t returns on security i, calculated as (Pit – Pit-1)/Pit-1.

Where, Pit is the market closing price of stock i on day t. Pit-1 is the market closing price of stock i on day t-1.

Rmt is the time t return on the NSE all-share price index calculated as (It –It-1)/It-1. Where, Iit is the market index on day t. It-1 is the market index on day t-1.

b. Cumulative abnormal return (CAR)

Cumulative abnormal returns (CAR), measures the investors' total abnormal return over a period starting from before the terrorist event activity to after the terrorist event day.

In this study a 61-day window period starting from -30-day to +30-day relative to the event occurrence day (0-day).

CAR is computed as follows:

$$CAR\ t = \sum_{t=1}^{t=j} MAAR\ t$$

Where,

CAR t is cumulative abnormal return;

MAAR t as defined above, j denotes the day -30 through day +30.

The t-test has used to determine the statistical significance of market adjusted average abnormal return of sampled stocks over the window period (-30 day to +30 day relative to occurrence of the terrorist event. It has also been used to test the statistical significance of the cumulative abnormal returns of the sampled stock.

The study has treated all the gathered information with utmost diligence and confidentiality. The findings would be purely used for academic purposes.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter gives the reaction of financial markets to terrorist activities in Kenya and related counter military attacks in Kenya as represented by the changes in stock prices of the firms listed in the Nairobi security exchange. In this study, MAAR indicates the relative daily percentage price change in each stock compared to the change in average market price. The NSE all-share price index will be used as the proxy of average market price. Since it is adjusted with the percentage change in market index (average market price) is the residual change in value is the one specific to each stock form the effect the terror activity. MAAR has been calculated over a period starting to –30 days to +30 days relative to the event occurrence day (0-day).On the other hand, Cumulative abnormal returns (CAR), measures the investors' total abnormal return over a period starting from before the terrorist event activity to after the terrorist event day. In this study a 61-day window period starting from -30-day to +30-day relative to the event occurrence day (0-day).

4.2 1998 Embassy Bombing

The study results in table 4.1 indicate the reaction of financial markets to terrorist activities of United States Embassy bombings that occurred on August 7, 1998, in which hundreds of people were killed in simultaneous truck bomb explosions at the United States embassies in the East African capitals of Dar es Salaam, Tanzania, and Nairobi, Kenya. In Nairobi, approximately 212 people were killed, and an estimated 4,000 wounded; in Dar es Salaam, the attack killed at least 11 and wounded 85. In the analysis given in table 4.1, MAAR is used to represent the daily percentage price change in each stock compared to the change in average market price while NSE 20-share price index is used as the proxy of average market price with the test being performed at 5% significant levels 2 tails.

Daily Market-Adjusted Abnormal Return (MAAR) For 7thAugust 1998 Bombing

Upon examining the full event window of 30 days before the terrorist attack and 30 days after the terrorist attack, the market reaction is observed most frequently after the terrorist attack and with the MAAR being positive for four companies out of 1 immediately after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, 1-tail since the t-statistic value on the day of the attack and even a day after was 0.12, value greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the terrorist attack and the day after the event after which it recorded a decrease for 12 days that gave serious negative impact to the market when the reaction became significant on the last day of t-0.517 on 8/20/1998 meaning that the market reacted negatively over a period of time at an increasing rate for 12 days when the negative impact was felt significantly at the market. After the sharp decline of t-values (increase in significant level of negative market reaction), the market stabilized as indicated by the increasing t-values indicating that the market was reducing the significance of negative reaction with time till it became very insignificant to the market reaction. The window period below the attack did not indicate any significant change as no t-value was below 0.05 testing at 5% significant value indicating that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average market price was not affected by the terrorist attack and this is also supported by the t-values greater than 0.05 ($t>0.5$) in table 4.1 indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to Table 4.1 in Appendix)

Cumulative Abnormal Return for 7th August 1998 Bombing

On examining the full event window of 30 days before and 30 days after the occurrence of the bombing, the investor abnormal return was positive days and a day before the bombing except for one firm but the investor return was significant at 5% significance level given that the t-value ($2.94*10^{-6}$) was less than alpha (0.05). The investor return

reacted the same on the day of bombing as the previous day though less significant given the t-value ($4.07*10^{-6}$) less than alpha (0.05) but more than the previous t-value. The t-statistics continued to record significant and decreasing values on the days after the attack. The investor return recorded more significance on 24th August, 1998 in which the t-statistic was $4.95*10^{-10}$ less than alpha (0.05). In conclusion, the investor return measured by CAR was significant days before and after the bombing of the US embassy in Kenya and this has been supported by the t-values less than alpha 0.05 ($t<0.05$) as indicated in table 4.2 . (Refer to Table 4.2 in Appendix)

4.3 Kikambala Attack in 2002, Mombasa

On 28 November 2002 there were missile attacks on an Israel Plane after takeoff from Mombasa airport. Subsequently there was an attack on Kikambala Hotel when they were receiving Israeli tourists. The blast occurred just after some 60 visitors had checked into the hotel, all of them from Israel, hotel officials said. 13 were killed and 80 injured. Ten Kenyans died, nine of whom were employed by the hotel.

Daily Market-Adjusted Abnormal Return (MAAR) for Kikambala Attack, 2002

On examining the full event window of 30 days before the Kikambala attack and 30 days after the Kikambala attack, the market reaction is observed most frequently after the attack and with the MAAR being negative for four companies out of 1 immediately after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, 1-tail since the t-statistic value on the day of the attack and even a day after was 0.81, value greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the attack and the day after the event after which it recorded a decrease or increase for the rest of the days after the attack. This means that the market reacted negatively over a period of time after the attack. The window period below the attack did not indicate any significant change as no t-value was below 0.05 testing at 5% significant value indicating that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average

market price was not affected by the terrorist attack and this is also supported by the t-values greater than 0.05 (t>0.5) in table 4.3 indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to Table 4.3 in Appendix)

Cumulative Abnormal Return for Kikambala Attack, 2002

On examining the full event window of 61 days relative to the occurrence of the bombing, the investor abnormal return was positive days and a day before the bombing except for one firm but the investor return was significant at 5% significance level given that the t-value ($1.43*10^{-17}$) was less than alpha (0.05). The investor return reacted the same on the day of bombing as the previous day though less significant given the t-value ($7.42*10^{-17}$) less than alpha (0.05) but more than the previous t-value. The t-statistics continued to record significant and decreasing values on the days after the attack. The investor return recorded more significance on 2nd December, 2002 in which the t-statistic was $8.01*10^{-56}$ less than alpha (0.05). The t-values diminished further after the 2nd reporting positive value indicating that the investor return was significant. In conclusion, the investor return measured by CAR was significant days before and after the Kikambala attack in Kenya and this has been supported by the t-values less than alpha 0.05 (t<0.05) as indicated in table 4.4. (Refer to Table 4.4 in Appendix)

4.4 Uhuru park attack of 2010

On 13 June 2010, during a "NO" campaign rally; a petrol bomb was thrown into the crowds as the meeting dispersed at dusk, sparking a stampede as people fled. Some witnesses reported that there had been two separate explosions, in Uhuru Park in the centre of the city. Five people were killed and as many as 75 were injured. The meeting was called by a church leader to campaign against a proposed new constitution in a referendum.

Daily Market-Adjusted Abnormal Return (MAAR) for Uhuru park attack of 2010

On examining the full event window of 30 days before the 2010 attack and 30 days after the attack, the market reaction is observed most frequently after the attack and with the

MAAR being negative for two companies out of 5 immediately after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, 1-tail since the t-statistic value on the day of the attack and even a day after was 0.28, value greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the attack and the days after the event after which it recorded a decrease or increase for the rest of the days after the attack. The market reaction performed better on the 14th July 2010 in which three firms recorded positive values though the window date did not indicate any significant change as no t-value was recorded for the day. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than 0.05 (t>0.5) in table 4.5 indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to table 4.5 in Appendix)

Cumulative Abnormal Return for Uhuru park attack of 2010

On examining the full event window of 30 days before and 30 days after the occurrence of the attack, the investor abnormal return was positive for three firms and negative for two firms days and a day before the attack but the investor return was significant at 5% significance level given that the t-value ($2.67*10^{-21}$) was less than alpha (0.05). The investor return reacted more significantly on the day of the attack given the t-value ($1.06*10^{-21}$) less than alpha (0.05) and less than the previous t-value. The t-statistics continued to record significant and increasing values on the days after the attack except for 12/7/2010 in which the investor return was insignificant given that the t-value (0.054) was more than alpha (0.05) testing at 5% significance level. In conclusion, the investor return measured by CAR was significant days before and after the attack and this has been supported by the t-values less than alpha 0.05 (t<0.05) as indicated in table 4.6 except for the 30th day after the attack in which the return was insignificant. (Refer to Table 4.6 in Appendix)

4.5 Al-shabaab attack of 2011

In October 2011, a coordinated operation between the Somali and Kenya military began against the Al – shabaab group of insurgents in southern Somalia. The mission was officially led by the Somali army, with the Kenyan forces providing a support role. Since then, a series of explosions have rocked various areas in Kenya, bombings which are believed to have been retaliatory attacks by Al-Shabaab.

Daily Market-Adjusted Abnormal Return (MAAR) for Al-shabaab attack 2011

Upon examining the full event window of 30 days before the attack and 30 days after the attack in table 4.7, the market reaction is observed most frequently after the terrorist attack and with the MAAR being zero for most firms after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after in which the t-value on the day of the attack was 0.50 greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the attack and the day after the event. The window period below the attack did not indicate any significant change as no t-value was below 0.05 testing at 5% significant value indicating that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than 0.05 ($t>0.5$) in table 4.7 indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to Table 4.7 in Appendix)

Cumulative Abnormal Return for Al-shabaab 2011 attack

On examining the full event window of 30 days before and 30 days after the attack, the investor abnormal return was negative for four firms and positive for one firm days and a day before the attack but the investor return was significant at 5% significance level given that the t-value ($2.48*10^{-12}$) was less than alpha (0.05) a day before the attack. The

investor return reacted more significantly on the day of the attack given the t-value ($1.58*10^{-13}$) less than alpha (0.05) and less than the previous t-value. The t-statistics continued to record significant and increasing values on the days after the attack. In conclusion, the investor return measured by CAR was significant days before and after the attack and this has been supported by the t-values less than alpha 0.05 ($t<0.05$) as indicated in table 4.8 except for the 30^{th} day after the attack in which the return was insignificant. (Refer to Table 4.8 in Appendix)

4.6 Bella Vista attacks of 2012

On Tuesday, 15 May 2012, three hand grenades were hurled at the Bella Vista nightclub in Mombasa, Kenya, killing one and leaving five others injured. The attacker also fired indiscriminately after he was denied entry into the Bella Vista club.

Daily Market-Adjusted Abnormal Return (MAAR) for Bella Vista attack 2012

The findings in table 4.9 examine the full event window of 30 days before the attack and 30 days after the attack. The market reaction is observed most frequently after the terrorist attack and with the MAAR being zero for most firms after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after in which the t-value was 0.81 greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the attack and the day after the event. The window period below the attack did not indicate any significant change as no t-value was below 0.05 testing at 5% significant value indicating that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than 0.05 ($t>0.5$) in table 4.9 indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to Table 4.9 in Appendix)

Cumulative Abnormal Return for Bella Vista attack 2012

On examining the full event window of 30 days before and 30 days after the occurrence of the attack, the investor abnormal return was positive for all the firms and significant days before the attack until 5 days after the attack in which the there was positive investor return for four firms except one and the investor return was significant given that the p-value $3.59*10^{-12}$ less than 0.05 level of significance. The t-statistics continued to record significant and diminishing values on 5 days after the attack. In conclusion, the investor return measured by CAR was significant days before and after the attack and this has been supported by the t-values less than alpha 0.05 ($t<0.05$) as indicated in table 4.10 except for the 30^{th} day after the attack in which the return was insignificant. (Refer to Table 4.10 in Appendix)

4.7 Al-shabaab attack of 2013

On 16 January 2013, suspected Islamic militants shot dead 5 people and injured 3 others at a restaurant in the eastern city of Garrisa.

Daily Market-Adjusted Abnormal Return (MAAR) for Al-shabaab 2013

The findings in table 4.11 examine the full event window of 30 days before the attack and 30 days after the attack. The market reaction is observed to record mixed reaction with firms recording positive and negative values both before and after the attack. The MAAR being zero for the firms was zero on the 16/02/2013 but the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day was 0.50 greater than 0.05. The t-statistic values recorded good performance of insignificant performance on the day of the attack and the day after the event. The window period below the attack did not indicate any significant change as no t-value was below 0.05 testing at 5% significant value indicating that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Generally, from the performance of MAAR, it can be concluded that the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than 0.05 ($t>0.5$) in table 4.11

indicating insignificant change in the daily price change in each stock compared to the change in average market price. (Refer to Table 4.11 in Appendix)

Cumulative Abnormal Return for Al-shabaab attack 2013

On examining the full event window of 30 days before and 30 days after the attack, the investor abnormal return recorded mixed reaction in which the reactions across the firms were significant and insignificant which fluctuated on days before and after the attack. Eight days before the attack the investor returns reaction to the stock market was both positive and negative but significant at 5% significance level given that the t-statistics was 0.03 less than alpha (0.05). a day before the attack the investor return reaction was mixed with both positive and negative reactions but insignificant given that the t-value 0.46 is greater than alpha (0.05) testing at 5% significance level. On the day of the attack, the reaction was a mixed reaction and insignificant given that the t-value is 0.63 which is greater than alpha (0.05). The investor reaction continued to record mixed reaction days after the attack with the 30^{th} day after the attack, the investor return recording three positive values and two negative values which were significant at 5% significance level given the diminished t-value. positive for all the firms and significant days before the attack until 5 days after the attack in which the there was positive investor return for four firms except one and the investor return was significant given that the p-value $3.59*10^{-12}$ less than 0.05 level of significance. In conclusion, the investor return measured by CAR was both significant and insignificant days before and after the attack and this has been supported by the t-values which are both less than and more than alpha 0.05 as indicated in table 4.12 except for the 30^{th} day after the attack in which the return was insignificant. (Refer to Table 4.12 in Appendix)

4.8 Longitudinal Analysis of Sampled Stocks

4.8.1 Cooperative Bank

The cooperative bank was not a quoted company in the NSE in 1998 and 2000 thus its stock prices were not affected then. After the Uhuru Park attack in 2010 the MAAR and CAR values were positive indicating a negative reaction of the stock to the event. However the t-values were less than 0.05 meaning the effect is significant. In the year 2011 attack, most MAAR and CAR were either zero or negative few days to the event

and after the event. This indicate that the stock reacted positively or neutral to the attack. Most of the t-values were below 0.05 meaning the reaction was significant, however on the last day of the window period the effect was insignificant with t-values being 0.06 above 0.05.

In 2012 event most of the MAAR and CAR values were positive meaning the reaction was negative. The reaction was also as all the t-values are less than 0.05.

In summary, Cooperative Bank stocks reacted negatively to most of the event and were significantly affected by the events. (Refer to Table 4.13 in Appendix)

4.8.2 East Africa Breweries Limited

The market reaction to the 1998 attack is observed most frequently after the attack and with the MAAR being negative for the East Africa Breweries immediately after the attack. As at the day of the 1998 attack the MAAR stood at 0 but days after the attack it declines to negative levels of as less as -0.0269. The CAR of the company also sharply declines although not much to hit the negative mark. The t-values of the company are the worst affected immediately after the attack. On 7th august 1998 (the day of the attack) the t-values were 4.872 and on the previous 30 days were stable and always higher than 3. However after the attack they dropped to 0.0001 and in the following days stabilized at that level. This showed that the company had experienced significant positive reaction to the event.

The 2002 Kikambala attack also affected the East African Breweries but not immediately but after around 2 weeks. On 11/28/2002 the t-values was at 0.05 and was rising for the period to a level of 6.82 on 6/9/2002. After 2 weeks, on 12/10/2002 it declined to 0.0001. This shows that there was negative market reaction. However as at 12/25/2002 the company's market value started to go back to where it was originally as the t-values increased to 1.026 and continued to increased.

Immediately after the 2010 Uhuru Park attack, on the 14th July 2010,(a day after the attack), EABL recorded positive MAAR values(0.01) from a zero value on the day of the attack though the window date did not indicate any significant change as very little t-value was recorded for the day. MAAR indicated little or no change in its frequency of

response indicating that the markets have strategies of adjusting effects of the terrorist attack. The Uhuru park attack reported significant increase of the investor abnormal return as measured by CAR days before and after the attack and this has been supported by the t-values less than alpha 0.05 ($t<0.05$).

The 2011 and 2013 Al-shabaab attacks are observed most frequently after the terrorist attack and the MAAR is zero for EABL after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after the attack were greater than alpha (0.05). On the CAR to measure the investor return, the study has established that the investor abnormal return was negative for firms' days and a day before the attack but the investor return was significant.

In summary, the 1998 attack showed that the company had experienced a negative market reaction. In 2002 the Kikambala attack also affected the East African Breweries market negatively. The 2010 Uhuru park attack did not indicate any significant change. The 2011 and 2013 Al-shabaab attacks affected the stock prices negatively though the reaction was not significant as indicated in Table 4.14. (Refer to Table 4.14 in Appendix).

4.8.3 Kenya Power and Lighting Company Limited

The 1998 embassy attack on the 7th August, 1998 negatively affected the market reaction as measured by the MAAR in which the reaction was not significant. However, the market stabilized as indicated by the increasing t-values indicating that the market was reducing the significance of negative reaction with time till it became very insignificant to the market reaction. The insignificance indicated that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Therefore daily price change in each stock compared to the change in average market price was not affected by the terrorist attack.

The KPLC stock had no significant reaction to the Kikambala attack of the 28th November, 2002 according to the performance of MAAR as indicated. The daily price change in each stock compared to the change in average market price was not affected by

the terrorist attack since the reaction was not significant as the t-values are greater than 0.05 (t>0.05). The findings as indicated by CAR shows that the investor return was affected by the Kikambala attack and the effect was significant at 5% significance level as indicated by the t-values being less than alpha (0.05). Following the 2011 Al-shabaab attack the MAAR being zero for KPLC after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after were greater than alpha (0.05). On the CAR to measure the investor return, the investors' abnormal return was negative for firms' days and a day before and after the attack but the investor return effect by the event was insignificant.

In summary, the 1998 embassy attack on the 7th August, 1998 negatively affected the KPLC stock prices in the market. The KPLC stock had no significant reaction to the Kikambala attack of the 28th November, 2002 the. On the 2011 Al-shabaab attack, the stock prices reacted negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level. (Refer to Table 4.15 in Appendix)

4.8.4 Uchumi Supermarket Limited

The bombing of the US embassy in Kenya on the 7th August, 1998 negatively affected the Uchumi stock as measured by the MAAR but the reaction was not significant. The market stabilized as indicated by the increasing t-values indicating that the market was reducing the significance of negative reaction with time till it became very insignificant to the market reaction. After the 2010 Uhuru park attack, on the 14th July 2010,(days after the attack), Uchumi stock recorded positive MAAR values(0.0029) from a negative value on the day of the attack though the window date did not indicate any significant change as very little t-value was recorded for the day. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. From the performance of MAAR, the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than alpha 0.05. The Uhuru park attack reported significant increase of the investor return as measured by CAR days before and after the attack and this has been supported by the t-values less than alpha 0.05 (t<0.05).

For the 2011 and 2013 Al-shabaab attacks the MAAR is zero for Uchumi after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after in which the t-value on the day of the attack were greater than alpha (0.05). On the CAR to measure the investor return, the study has established that the investor abnormal return was negative for firms' days and a day before the attack but the investor return was significant. The Bella Vista attack of the year 2012 made the stock market react positively but insignificant both on the day of the attack and continued after the day of the attack since MAAR were negative for Uchumi after the attack. The CAR that measured the investor return was positive before the Vista attack and after the attack in which the market recorded positive reactions which were significant.

In summary, the bombing of the US embassy in Kenya on the 7th August, 1998 negatively affected the Uchumi stock prices but the reaction was not significant. The 2010 Uhuru park attack, the stock were significantly affected negatively. The 2011 and 2013 Al-shabaab attacks affected the stock prices negatively though the reaction was not significant. (Refer to Table 4.16 in Appendix)

4.8.5 Safaricom Limited.

After the 2010 Uhuru park attack, on the 14th July 2010,(a day after the attack), Safaricom recorded positive MAAR values(0.01) from a negative value(-0.01) on the day of the attack, though the change was insignificant. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. From the performance of MAAR, the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than alpha 0.05. The Uhuru park attack reported significant increase of the investor return as measured by CAR days before and after the attack and this has been supported by the t-values less than alpha 0.05 ($t<0.05$). The 2011 and 2013 Al-shabaab attacks effects are observed most frequently after the terrorist attack and the MAAR is zero for Safaricom after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of

the attack and even a day after were greater than alpha (0.05). On the CAR to measure the investor return, the study has established that the investor abnormal return was negative for firms' days and a day before the attack and the effect was significant. The Bella Vista attack of the year 2012 made the stock market react positively but insignificant both on the day of the attack and continued after the day of the attack since MAAR were zero for Safaricom after the attack. The CAR that measured the investor return was positive before the Vista attack and after the attack in which the market recorded negative reactions which were significant.

In summary, the stock reacted negatively and significantly to the 2010 Uhuru park attack as it recorded a positive MAAR and CAR values. The 2011 and 2013 Al-shabaab attacks affected the stock prices negatively though the reaction was not significant. The Bella Vista attack of the year 2012 made the stock market react positively but insignificant. (Refer to Table 4.17 in Appendix)

4.8.6 Mumias Sugar Company Limited

Mumias's stock reacted negatively to the Kikambala attack of the 28th November, 2002 as shown by the reduction of MAAR values to 0 and eventually negative values. The effect was not significant since the t-values are greater than 0.05 (t>0.5).

Immediately after the 2010 Uhuru park attack, on the 14th July 2010,(a day after the attack), Mumias recorded positive MAAR values(0.01) from a zero value on the day of the attack though they became negative in the following days. The Uhuru park attack reported significant stabilization of the CAR days before and after the attack and this has been supported by the t-values stabilizing at less than alpha 0.05 (t<0.05). The t-values however increased after the attack showing positive market reaction to the 2010 attack.

The Bella Vista attack of the year 2012 made the stock market react positively but insignificant both on the day of the attack and continued after the day of the attack since MAAR were zero for Mumias Sugar Company after the attack. The CAR that measured the investor return was positive before the Vista attack and after the attack .Following the 2013 Al-shabaab attack, the MAAR is zero for Mumias Sugar Company after the attack, the stock prices react negatively to the attack though the reaction was not significant to

the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after were greater than alpha (0.05).

In summary, Mumias's stock reacted negatively to the Kikambala attack of the 28th November, 2002. Immediately after the 2010 uhuru park attack, reported significant stabilization of the CAR days before and after the attack and this has been supported by the t-values stabilizing at less than alpha 0.05 ($t<0.05$). The Bella Vista attack of the year 2012 made the stock market react positively but insignificant. (Refer to Table 4.18 in Appendix)

4.8.7 CIC Insurance Limited

The CIC stocks were only sampled in the Alshabaab attack on 4th January 2013. Most of the MAAR and CAR values were positive ranging between zero and above with a few instances of negatives in the event window period. This shows that the CIC insurance stock reacted negatively or neutral to the event, however the reactions was significant as most t-values were below 0.05 ($t>0.05$). The significance of the effect was decreasing thereafter to close the window period at 0.000942508 which was still below 0.05. (Refer to Table 4.19 in Appendix)

4.8.8 Equity Bank Limited

The equity stock recorded negative MAAR after the 2010 attack while CAR values were mostly positive across the event window period with a 0.203671946 value being recorded on the event date. The t-values were below 0.05 across the event window period and a t-value of 4.30545E-30 recorded on the event date. This shows that cumulatively the stock reacted negatively to the event and abnormal returns were realized by the investors, the effect was significant also as reflected by lower t-values. The reaction was the same response to the 2011 attack with MAAR and CAR recording 0 and 0.06 values respectively. The reaction was also significant as the t-values were below 0.05.

On the 2012 event most of MAAR and CAR were either zero or more meaning the stocks reacted negatively to the event recoding values of 0.01 and 0.04 for MAAR and CAR respectively on the vent date. The t – values were below 0.05 indicating that the effect significant with the t-value being 1.81499E-15 on the event date. The MAAR was mostly negative or zero with a few positives above zero recorded in relation the 2013 attack. CAR were negative before the attack and a few days after the attack, it then turn positive to close the event window period at 1.044317259. The t- values of was mostly

below 0.05 though in a decreasing trend and a value of 5.54377E-06 was recorded on the event date. It shows that the effect was significant though it reduces to close the period at 1.565454. In summary, the equity stock reacted negative to the 2010, 2011, 2012 and 2013; the effect was significant across the events. (Refer to Table 4.20 in Appendix)

4.8.9 Kenya Commercial Bank Limited

KCB stocks recorded MAAR- was both negative and positive across the 1998 attack event period with most values being negative or zero after the event.CAR value was positive mostly after the event meaning the reaction was negative and recorded 0.025 on the event date and close the period at 0.013 at the end of the period. T-values were below 0.05 with t-value on the event date being at 2.3E-09 and the trend continued to close the event window at 5.6E-09. This shows that effect was significant. In the 2002 attack most MAAR were negative before the event and at the day of the event was -0.01.After the event, the values ranged between zero and negative but turned positive and zero at the last fifteen days of the window period.CAR was positive before the event to record 0.03 on the event date. It turned negative after four days after the event before and continued in same trend for the next 17 days and changed to positive in the last days of the period. T-values before the event were mostly less than 0.05 and reported 0.039 on the event date indicating that the mixed reaction by the stock in the event was significant.

On the 2010 event, MAAR and CAR values were positive before the event. After the event, MAAR was mostly zero or negative while the CAR mostly negative closing at -0.11 at the end of the period. This means that the stock reacted positively to the event. The t-values were above 0.05 before that but declined to below 0.05 after the event and close the period at 0.014. This means the effect was mostly significant. Similarly in 2011, most of the MAAR values are zero and negatives with few positives with the event date recording 0.01. This shows that stock mainly reacted positively to event. The CAR in most cases was negative closing at -0.04. All the t- values were below 0.05 with the t-values on the event date being 0.00043 thereby indicating that the stock reaction was significant.

For the 2012 attack, MAAR and CAR values were mostly zero and negative up to four days before the event. On the event date, the values were 0.0 and 0.02 respectively and

the trend continued in five days after the event after which CAR turn negative and MAAR ranges between zero and negative. All t- values were below 0.05 being 9.5E-07 on the day of the event. This meant that the reaction was significant and positive. Throughout the event window period for the 2013 attack, MAAR & CAR values were positive ranging between 0 and 0.01.This meant that the stock reacted negatively to the event and on the event date, the MAAR was -0.01 while CAR was 0.04. T-values were decreasing to close the period at 0.00048 but below 0.05 hence the effect was significance. (Refer to Table 4.21 in Appendix)

4.8.10 Kenya Airways Limited

For the 1998 US Embassy bombing the Kenya Airways stock MAAR was mostly positive before the event and recorded 0.0 on the event date. It then turned frequently negative after the event.CAR was mostly positive before and after the event. It shows the stock reacted negatively to the event. On the other hand t-values were mostly below the 0.05 indicating the effect was significant and on the event date, the t-values were 0.000111629. In the 2002 attack most MAAR & CAR were negative across the event window period with a few positives. On the event date, values of 0.00335635 and 0.0176233243 for MAAR and CAR were recorded respectively. The t-values were less than 0.05 across the period with 4.65497E ^-22 recorded in the date of the event. This mean the effect was a positive and significant.

Most of the MAAR and CAR values for 2010 event were negative though there are cases of positive values both before and after the event. On the event date, value of 0 and 0.095209448 for MAAR and CAR respectively were recorded. The t-values were below 0.05 across the event period and on the event date the value was 2.07112E ^-25.This means that the stock reacted positively to the event and the effect was significant. For the 2011 event the reaction was the same as 2010 with MAAR and CAR values being 0.0411173 and -1.085823167 respectively on the event date. The reaction of the stock to the event was therefore positive and significant as all the t-values were below 0.05 and was 1.06208E ^ -50 on the event date.

On the 2012 attack, MAAR values were both negative and positive while CAR values were mainly positive. On the event date MAAR and CAR were both positive at

0.0007424 and 0.985 on the event date and the trend continued after. The t-values were mostly below 0.05 with a figure of 2.16376E^-43 being recorded on the event date. The reaction was therefore generally negative and significant. In the case of 2013 attack, MAAR and CAR values were positive mainly at the beginning of the event period but turned negative a few days before the event date. Values of 0.01745301 and -0.102905872 were recorded on the date of event respectively. Thereafter, the values were negative but turned positive to close the period at 0 and 0.86396834 respectively. T-values were below 0.05 during the event window and on the event date was 0.000124182. The reaction was therefore mainly positive and had significant effect.

From analysis of the reaction of each individual stock to the different the study has established similar stock reacts differently to the different events. EABL reacted negatively to the 2002, 2010, 2011 and 2013 but reacted positively to the 2013 event. Equity stocks reacted negatively to all the three events on which it was sampled i.e. 2010 to 2013. This varying reaction was the same in other stocks. On the other hand different event had varying effect to the different stocks. All companies sampled were negatively affected by the 1998 attack except EABL which indicated a positive reaction. In the 2012 attack four stocks out of seven reacted positively to the event, while in the 2013 attack it was on Kenya airways stocks the experienced a positive effect and the other six recorded negative effect. Most of the reactions either positive or negative were positive. (Refer to Table 4.22 in Appendix)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings and conclusions of the research. It provides this summary with particular reference to the context in which the research objectives were specified. The findings of the research are compared and contrasted with findings of published research cited in this research. Based on the results, the study gives recommendations to the policy makers as well as suggestions for future research.

5.2 Summary

The performance in the financial sector is expressed mainly in terms of the behavior of the capital markets as express by the changes in stock prices which affect the overall value of the listed firms. The main indexes used in analyzing the capital market performance are the NSE 20 share index, the all share index, Market adjusted abnormal returns and the cumulative average abnormal returns among others. This study therefore was conducted with the objective to analyze the reaction of the financial market to terror activities and related counter military attacks in Kenya as presented by changes in stock prices of the firms listed in NSE. The study used secondary data from the NSE. Data was obtained from the NSE over the study period as from 1975 and January 2013.The date of each terror activity was the event date for this study the focus will be major terror attacks which include, the Norfolk hotel attack (1975), US embassy (1998), Kikambala attack (2002), Uhuru park attack (2010), Alshabaab attacks on Oct 24th 2011, May 15th 2012, and January 16th 2013. The reaction of the NSE has been focused as reflected by the movement on the stock prices for the study period.

The study has established that the bombing of the US embassy in Kenya on the 7th August, 1998 negatively affected the market reaction as measured by the MAAR in which the reaction was not significant. However, the market stabilized as indicated by the

increasing t-values indicating that the market was reducing the significance of negative reaction with time till it became very insignificant to the market reaction. The insignificance indicated that the investors were not aware of the impending attack. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. Therefore daily price change in each stock compared to the change in average market price was not affected by the terrorist attack. This indicates that the Kenyan market is not efficient to reflect all the available information to enable the investors' trade on the information. This is against the study of Malkiel (1992) who noted that a capital market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices and the action will cause a change in the prices either up or down but if the change become significant then other investors will also join in and the effect is stabilize by counter reactions by investors. The study has also established that the investor return recorded was not negatively affected by the 7th August bombing of the US embassy in Kenya and the investor return was recorded to be significant as by CAR.

The study has established that the stock market reacted negatively to the Kikambala attack of the 28th November, 2002 though the through the performance of MAAR as indicated by the study, the daily price change in each stock compared to the change in average market price was not affected by the terrorist attack since the reaction was not significant since the t-values are greater than 0.05 ($t>0.5$). The findings of the study indicated that the investor return was affected by the Kikambala attack and the effect was significant at 5% significance level as indicated by the p-values less than alpha (0.05). This indicates that terrorist attack affects daily price change in each stock compared to the change in average market price. This supports the study of Chen and Siems, (2003), who in their study on the 2001 bomb blast of the US they indicated that terrorist attacks and military invasions have great potential to affect capital markets around the world in a short period of time but capital markets seem to have become more resilient and are better able to absorb shocks brought on by such events.

The study has established that the market reaction performed better on the 14th July 2010, a day after the attack, in which three firms recorded positive values though the window date did not indicate any significant change as no t-value was recorded for the day. MAAR indicated little or no change in its frequency of response indicating that the markets have strategies of adjusting effects of the terrorist attack. From the performance of MAAR, the daily price change in each stock compared to the change in average market price was not affected by the attack and this is also supported by the t-values greater than alpha 0.05. The study has also established that the Uhuru park attack reported significant mixed reaction of the investor return as measured by CAR days before and after the attack and this has been supported by the t-values less than alpha 0.05 ($t<0.05$), however, on the 30th day after the attack the return was insignificant. This confirms the study of Taylor, (2004) in which he indicated that financial markets shift up or down according to investors' perceptions of how the crisis will be resolved in which if they are handled positively, the investor confidence is raised and the market react significantly and positively.

The study has also established that the market reaction following the 2011 Al-shabaab attack is observed most frequently after the terrorist attack and with the MAAR being zero for most firms after the attack, the stock prices react negatively to the attack though the reaction was not significant to the stock market testing at 5% significance level, since the t-statistic value on the day of the attack and even a day after in which the t-value on the day of the attack were greater than alpha (0.05). On the CAR to measure the investor return, the study has established that the investor abnormal return was negative for firms' days and a day before the attack but the investor return was significant. The reaction of the investor continued to be negative and significant after the attack. This indicates that the Al-shabaab attack of 2011 and 2013 affected the stock prices significantly. The study has established that the Vista attack of the year 2012 made the stock market react positively but insignificant both on the day of the attack and continued after the day of the attack since MAAR were zero for most firms after the attack. The study has also established that the CAR that measured the investor return was positive before the Vista

attack and after the attack in which the market recorded positive reactions which were significant.

From analysis of the reaction of each individual stock to the different the study has established similar stock reacts differently to the different events. EABL reacted negatively to the 2002, 2010, 2011 and 2013 but reacted positively to the 2013 event. Equity stocks reacted negatively to all the three events on which it was sampled i.e. 2010 to 2013. This varying reaction was the same in other stocks. On the other hand different event had varying effect to the different stocks. All companies sampled were negatively affected by the 1998 attack except EABL which indicated a positive reaction. In the 2012 attack four stocks out of seven reacted positively to the event, while in the 2013 attack it was on Kenya airways stocks the experienced a positive effect and the other six recorded negative effect. Most of the reactions either positive or negative were positive.

5.3 Conclusion

In this research, the analysis of stock market reaction to terrorist attacks in Kenya was performed in the context of the Nairobi stock market. The study took all the firms trading at the NSE. It was found that majority of NSE listed companies reacted negatively to terrorist attacks in Kenya. Abnormal return approaches using the Cumulative abnormal return and the daily market adjusted return were used to analyze how the market reacted to terror attacks. Results of the analysis show that there is no significant market reaction on the day that the bombing of US embassy occurred, as the daily market return was not significant on the event day. However results of the market adjusted abnormal return show that the early significant market reaction days prior to the attack and days after the attack. In both instances the reaction is negative as evidenced by negative abnormal returns. The market reaction is negative too for the Kikambala attack. This outcome tends to support the notion that terrorist attack conveys negative information to the public which results in a subsequent fall in stock price. This shows that the stock market sees terrorist attacks during normal economic conditions more often as bad news and negatively affects the investor trading at the NSE.

The study concludes that prior to the attacks, statistically insignificant reaction is observed days prior to attack dates since the MAAR reaction were all insignificant though negative in most of the attacks. The statistically not significant results show that the markets are a bit efficient and adjust quickly to the attacks due to terrorism. The insignificant reaction is continued to be observed even days after the attack. The frequency of negative MAAR raw returns is higher during the attacks. The analysis of the CAR reveals statistical significance on the days before and after attacks this indicates that the cumulative abnormal returns, measured over a 30 day window, more significant market reaction is observed in the periods after the attacks. This measure yields positive raw returns despite the attacks.

Analyzing the volatility of abnormal returns and the daily reactions of the NSE shows that the reactions and returns before and after the attacks are very more volatile. Since this study is the first attempt to gauge NSE listed firm's reaction to terror attacks over the pre and during attacks periods, more research needs to start forthcoming going forward. Based on the data due to the nature of terror attacks in Kenya, results presented in this report do contribute towards understanding the effects of firm-specific and systemic related terror attacks. From the findings it was also shown that the abnormal investor return is significant before, during and after the attacks. In conclusion, the research indicates that there is no statistically significant daily market reaction as measured by MAAR due to the terror attacks. The study also concludes that the investor returns as measured by CAR indicated statistically significant days before and after the attacks. In addition the study concluded that a stock can react differently to different event as well as different event having varying effect on the different stocks. The market reaction implies that terror attacks affect firm stock prices, consequently shareholder value.

5.4 Recommendations

5.4.1 Recommendations for the policy makers

This study based on the findings recommend that the government of Kenya should enhance the intelligence information gathered to tighten security of the country in order

to avoid the terror attacks and counter military intervention that negatively affect the daily movement of the stock prices at the NSE.

The study recommends to the government and the policy makers to make the NSE an efficient market to ensure that the investors get the required information for investment simultaneously without any having prior information in order to boost the trading morale and enhance the security of the investors as well as the stock traders.

The study recommends to the government and the policy makers that the terrorist phenomenon, significantly affects the lives of citizens in different ways and scares away investment due to the insecurity caused and the government should comprehensively adopt a stringent law to reduce terrorism activities to facilitate crushing of the terror groups which has gained momentum in recent years in Kenya.

5.4.2 Recommendations for further studies

This study recommends that there should be a study to determine the effect of terrorism activities on the foreign investment in the Nairobi stock exchange and give recommendations on how the foreign investment confidence can be improved to enhance the positive trading of the stock prices at the Nairobi stock exchange.

This study recommends that there should be a study on the effects of the continued terror threats posed by Al-shabaab and the military intervention in Somalia on the movement of the stock prices at the NSE and give recommendations on how the threats posed by the militia group can be controlled to eliminate the negative effect of trading.

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APPENDIX 3:

ANALYSIS TABLES

Table 4.1: Daily Market-Adjusted Abnormal Return (MAAR) For 7th August 1998 Bombing

Dates of Event	MAAR-KQ	MAAR-KPLC	MAAR-Uchumi	MAAR-EABL	MAAR-KCB	t-values
7/7/1998	0.010432	0.004182	0.004182	-0.00463	0.004182	0.115474
7/8/1998	-0.00872	-0.00251	-0.02007	0.006378	-0.01002	0.109376
7/9/1998	0.000865	0.000865	0.000865	0.000865	0.000865	0.108169
7/10/1998	0	0	0	0	0	0.108178
7/11/1998	0	0	0	0	0	0.108187
7/112/1998	0.009458	-0.0815	0.003127	0.01937	0.009458	0.108197
7/13/1998	0.005253	0.022901	0.029616	0.005253	0.005253	0.108207
7/14/1998	0.013018	0.017859	0.000518	-0.0093	0.000518	0.108217
7/15/1998	-0.01007	0.025036	0.002279	0.021002	0.002279	0.096581
7/16/1998	-0.00167	-0.00167	-0.01924	0.006975	-0.00167	0.107132
7/17/1998	0	0	0	0	0	0.107143
7/18/1998	0	0	0	0	0	0.107154
7/19/1998	0.002908	0.063991	0.020785	0.002908	-0.00466	0.107166
7/20/1998	0.017465	0.010227	0.011185	-0.00361	0.012587	0.100142
7/21/1998	0.006742	0.010021	0.006032	0.003045	-0.0056	0.095838
7/22/1998	0.000604	0.000604	-0.01701	0.01025	0.000604	0.085299
7/23/1998	-0.00038	0.005713	0.005713	-0.02083	0.013277	0.085298
7/24/1998	0	0	0	0	0	0.095972
7/25/1998	0	0	0	0	0	0.095978
7/26/1998	-0.01439	-0.01235	-0.00212	0.015331	0.003889	0.095985
7/27/1998	0.028101	0.012589	-0.00881	-0.0201	-0.00893	0.111681
7/28/1998	-0.02881	-0.00381	-0.01672	0.018763	0.007321	0.076157
7/29/1998	0.001761	-0.00445	0.019913	0.013771	-0.00445	0.102141
7/30/1998	0.013208	-0.00531	-0.02287	-0.00531	-0.00531	0.096372
7/31/1998	0	0	0	0	0	0.079926
8/1/1998	0	0	0	0	0	0.079916
8/2/1998	-0.05495	0.005652	0.02986	-0.00277	0.005652	0.079906
8/3/1998	0.000694	0.004473	-0.01194	-0.00576	-0.01173	0.124618
8/4/1998	0.001757	0.006859	-0.00995	0.001757	0.015271	0.110632
8/5/1998	0.002102	0.002102	0.002102	0.010595	0.002102	0.124628
8/6/1998	-0.0063	-0.0063	-0.0063	-0.0063	-0.0063	0.124677
8/7/1998	**0**	**0**	**0**	**0**	**0**	**0.124729**
8/8/1998	0	0	0	0	0	0.124784
8/9/1998	0.002987	0.013063	-0.1477	0.020882	0.010395	0.124842
8/10/1998	0.02239	-0.00325	0.174168	-0.02083	0.004102	0.133366
8/11/1998	-0.01796	-0.00546	0.012679	-0.00546	-0.00546	0.111479
8/12/1998	0.001012	-0.01165	-0.01783	-0.01165	-0.01165	0.12473

8/13/1998	0.007906	0.007906	-0.01588	-0.02683	-0.00669	0.110195
8/14/1998	0	0	0	0	0	0.094819
8/15/1998	0	0	0	0	0	0.094826
8/16/1998	0.004738	0.004738	0.041469	0.022186	-0.00267	0.094833
8/17/1998	-0.00028	-0.00028	-0.01799	-0.01743	-0.00028	0.087758
8/18/1998	0.01928	-0.02445	0.006418	0.009254	-0.00544	0.087737
8/19/1998	0.014908	-0.0035	-0.0035	0.014881	-0.0035	0.065404
8/20/1998	-0.03533	0.000818	0.012892	-0.02572	0.000818	0.051791
8/21/1998	0	0	0	0	0	0.073688
8/22/1998	0	0	0	0	0	0.073561
8/23/1998	-0.07237	0.014033	0.008879	0.008879	0.001371	0.073411
8/24/1998	-0.02043	0.020332	-2.4E-05	0.0087	0.00754	0.129693
8/25/1998	-0.02893	-0.01615	0.010419	0.017229	-0.00866	0.16734
8/26/1998	0.001364	0.001364	-0.01007	-0.00819	0.001364	0.200785
8/27/1998	0.015112	0.000826	0.012395	0.000826	0.000826	0.201776
8/28/1998	0	0	0	0	0	0.175994
8/29/1998	0	0	0	0	0	0.17708
8/30/1998	-0.01258	0.001507	-0.00421	-0.01564	0.001507	0.178408
8/31/1998	-0.02607	-0.00763	-0.02661	0.019949	0.002501	0.205367
9/1/1998	-0.00933	0.005372	0.041285	0.015018	0.018988	0.26408
9/2/1998	-0.01282	0.002109	0.002109	-0.00745	-0.01132	0.334257
9/3/1998	0.017534	-4E-05	-0.02842	-0.00519	-0.00519	0.348324
9/4/1998	0	0	0	0	0	0.298657
9/5/1998	0	0	0	0	0	0.322838
9/6/1998	0.002873	0.034783	0.046131	0.049557	0.03991	0.377422
9/7/1998	-0.13692	0.109622	0.097753	0.100633	0.053055	-

Table 4.2: Cumulative Abnormal Return for 7th August 1998 Bombing

Date of Events	CAAR-KQ	CAAR-KPLC	CAAR-Uchumi	CAAR-EABL	CAAR-KCB	t-values
7/7/1998	0.010432	0.004182	0.004182	-0.00463	0.004182	0.000277
7/8/1998	0.00171	0.001671	-0.01589	0.00175	-0.00584	0.00026
7/9/1998	0.002575	0.002536	-0.01503	0.002614	-0.00497	0.000241
7/10/1998	0.002575	0.002536	-0.01503	0.002614	-0.00497	0.000223
7/11/1998	0.002575	0.002536	-0.01503	0.002614	-0.00497	0.000206
7/112/1998	0.012033	-0.07897	-0.0119	0.021985	0.004487	0.00019
7/13/1998	0.017286	-0.05607	0.017716	0.027238	0.00974	0.000175
7/14/1998	0.030304	-0.03821	0.018234	0.017941	0.010258	0.000161
7/15/1998	0.020238	-0.01317	0.020513	0.038943	0.012537	0.000131
7/16/1998	0.018564	-0.01484	0.001276	0.045918	0.010863	0.000119
7/17/1998	0.018564	-0.01484	0.001276	0.045918	0.010863	0.000109
7/18/1998	0.018564	-0.01484	0.001276	0.045918	0.010863	9.91E-05
7/19/1998	0.021472	0.049147	0.022061	0.048825	0.006207	8.99E-05
7/20/1998	0.038937	0.059374	0.033246	0.045216	0.018794	7.52E-05
7/21/1998	0.045678	0.069395	0.039278	0.04826	0.01319	5.92E-05

7/22/1998	0.046282	0.069999	0.022269	0.058511	0.013794	3.97E-05
7/23/1998	0.045898	0.075712	0.027982	0.037684	0.027071	2.61E-05
7/24/1998	0.045898	0.075712	0.027982	0.037684	0.027071	2.01E-05
7/25/1998	0.045898	0.075712	0.027982	0.037684	0.027071	1.53E-05
7/26/1998	0.031511	0.063365	0.025865	0.053016	0.03096	1.15E-05
7/27/1998	0.059612	0.075953	0.017056	0.032912	0.022035	1.08E-05
7/28/1998	0.030806	0.072141	0.000336	0.051675	0.029356	5.93E-06
7/29/1998	0.032568	0.067691	0.020249	0.065446	0.024906	5.4E-06
7/30/1998	0.045776	0.062381	-0.00262	0.060136	0.019596	4.49E-06
7/31/1998	0.045776	0.062381	-0.00262	0.060136	0.019596	2.76E-06
8/1/1998	0.045776	0.062381	-0.00262	0.060136	0.019596	1.64E-06
8/2/1998	-0.00918	0.068032	0.027236	0.057366	0.025248	9.25E-07
8/3/1998	-0.00848	0.072506	0.015297	0.051609	0.01352	1.28E-06
8/4/1998	-0.00673	0.079364	0.005345	0.053366	0.028791	1.52E-06
8/5/1998	-0.00462	0.081467	0.007448	0.063961	0.030893	2.12E-06
8/6/1998	-0.01092	0.075167	0.001148	0.057661	0.024593	2.94E-06
8/7/1998	-0.01092	0.075167	0.001148	0.057661	0.024593	4.07E-06
8/8/1998	-0.01092	0.075167	0.001148	0.057661	0.024593	5.59E-06
8/9/1998	-0.00794	0.08823	-0.14655	0.078544	0.034988	7.66E-06
8/10/1998	0.014453	0.084979	0.027619	0.057712	0.03909	1.13E-05
8/11/1998	-0.00351	0.079517	0.040298	0.05225	0.033628	1.35E-05
8/12/1998	-0.0025	0.06787	0.02247	0.040604	0.021981	1.85E-05
8/13/1998	0.005409	0.075777	0.006593	0.013773	0.015289	2.19E-05
8/14/1998	0.005409	0.075777	0.006593	0.013773	0.015289	2.11E-05
8/15/1998	0.005409	0.075777	0.006593	0.013773	0.015289	2.01E-05
8/16/1998	0.010146	0.080514	0.048062	0.035959	0.012619	1.87E-05
8/17/1998	0.009869	0.080237	0.03007	0.018533	0.012342	1.5E-05
8/18/1998	0.029149	0.055791	0.036488	0.027786	0.006902	1.15E-05
8/19/1998	0.044057	0.052294	0.032991	0.042667	0.003404	4.7E-06
8/20/1998	0.00873	0.053112	0.045883	0.016946	0.004222	7.54E-07
8/21/1998	0.00873	0.053112	0.045883	0.016946	0.004222	2.26E-07
8/22/1998	0.00873	0.053112	0.045883	0.016946	0.004222	3.34E-08
8/23/1998	-0.06364	0.067145	0.054762	0.025825	0.005594	6.69E-10
8/24/1998	-0.08407	0.087477	0.054738	0.034525	0.013133	4.95E-10
8/25/1998	-0.113	0.071327	0.065157	0.051753	0.004476	1.3E-09
8/26/1998	-0.11164	0.072691	0.055085	0.043563	0.00584	6.86E-09
8/27/1998	-0.09653	0.073517	0.06748	0.044389	0.006666	3.48E-08
8/28/1998	-0.09653	0.073517	0.06748	0.044389	0.006666	9.24E-08
8/29/1998	-0.09653	0.073517	0.06748	0.044389	0.006666	1.88E-07
8/30/1998	-0.1091	0.075024	0.063268	0.028747	0.008173	1.95E-07
8/31/1998	-0.13517	0.067398	0.036653	0.048697	0.010674	1.94E-07
9/1/1998	-0.14451	0.07277	0.077938	0.063715	0.029662	1.63E-06
9/2/1998	-0.15732	0.074879	0.080047	0.05627	0.018338	2.76E-05
9/3/1998	-0.13979	0.074839	0.051623	0.051076	0.013145	0.000406
9/4/1998	-0.13979	0.074839	0.051623	0.051076	0.013145	0.005533
9/5/1998	-0.13979	0.074839	0.051623	0.051076	0.013145	0.068495
9/6/1998	-0.13692	0.109622	0.097753	0.100633	0.053055	-

Table 4.3: Daily Market-Adjusted Abnormal Return (MAAR) for Kikambala Attack, 2002

		MAAR				t-values
date of Events	KENYA COMMERCIAL BANK (~KS)	EAST AFRICAN BREWERIES (~KS)	KENYA COMMERCIAL BANK (~KS)	KENYA POWER & LIGHTING (~R)	MUMIAS SUGAR COMPANY (~KS)	0.761827
10/29/2002						0.498396
10/30/2002	0.083332	-0.01101	0.083332	0.011981	0.053095	0.498469
10/31/2002	-0.02654	-0.02654	-0.02654	-0.03777	-0.02654	0.477968
11/1/2002	0.03262	-0.00186	0.03262	-0.00186	0.022233	0.478047
11/2/2002	0	0	0	0	0	0.478129
11/3/2002	0	0	0	0	0	0.478214
11/4/2002	-0.01435	-0.08454	-0.01435	0.417468	-0.01435	0.380835
11/5/2002	0.036805	0.094547	0.036805	-0.0132	-0.0132	0.215467
11/6/2002	0.075916	-0.01932	0.075916	0.075916	-0.01932	0.214355
11/7/2002	0.028994	0.021883	0.028994	-0.02173	0.028057	0.144126
11/8/2002	-0.01501	-0.03425	-0.01501	0.087935	-0.07182	0.144157
11/9/2002	0	0	0	0	0	0.144189
11/10/2002	0	0	0	0	0	0.144222
11/11/2002	-0.01912	-0.00931	-0.01912	0.080883	-0.01912	0.164167
11/12/2002	-0.02915	-0.01788	-0.02915	0.088803	-0.00817	0.186652
11/13/2002	-0.02479	-0.00336	-0.02479	0.096084	-0.00336	0.186714
11/14/2002	-0.01164	-0.02088	-0.01164	-0.03175	-0.01164	0.300814
11/15/2002	-0.09427	0.007917	-0.09427	-0.07926	0.007917	0.300929
11/16/2002	0	0	0	0	0	0.301049
11/17/2002	0	0	0	0	0	0.301175
11/18/2002	0.016121	-0.08114	0.016121	-0.09624	0.016121	0.301307
11/19/2002	0.016344	0.021506	0.016344	-0.08492	0.016344	0.594142
11/20/2002	-0.11195	0.047865	-0.11195	-0.08155	0.058189	0.867482
11/21/2002	0.019592	0.004767	0.019592	-0.05168	0.102287	0.831332
11/22/2002	0.007812	0.013409	0.007812	-0.00872	0.081496	0.831417
11/23/2002	0	0	0	0	0	0.831508
11/24/2002	0	0	0	0	0	0.974143
11/25/2002	0.056506	0.010635	0.056506	-0.03979	0.010635	0.948805
11/26/2002	-0.01413	0.01331	-0.01413	-0.08508	0.003415	0.984203
11/27/2002	0.024859	0.007002	0.024859	0.016711	0.016806	0.810461
11/28/2002	-0.00588	-0.00588	-0.00588	-0.00588	0.032957	0.810596
11/29/2002	-0.01114	0.029891	-0.01114	-0.01114	-0.01114	0.81074
11/30/2002	0	0	0	0	0	0.810894
12/1/2002	0	0	0	0	0	0.974502
12/2/2002	-0.01364	0.003901	-0.01364	0.013517	-0.06152	0.718121
12/3/2002	-0.0652	0.026714	-0.0652	0.063969	-0.0027	0.71839
12/4/2002	-0.00278	0.025795	-0.00278	-0.02063	-0.00278	0.623262
12/5/2002	-0.00365	0.014679	-0.00365	-0.07638	0.016345	0.62365
12/6/2002	0	0	0	0	0	0.624071
12/7/2002	0	0	0	0	0	0.624529

12/8/2002	0	0	0	0	0	0.62503
12/9/2002	0.00108	0.010354	0.00108	0.010883	0.00108	0.62558
12/10/2002	-0.01096	-0.00177	-0.01096	0.076417	-0.01096	0.626186
12/11/2002	-0.01796	0.026496	-0.01796	0.062397	-0.01796	0.626857
12/12/2002	0	0	0	0	0	0.627605
12/13/2002	-0.02174	-0.00481	-0.02174	0.052644	-0.02174	0.628443
12/14/2002	0	0	0	0	0	0.629388
12/15/2002	0	0	0	0	0	0.630464
12/16/2002	-0.01389	0.003254	-0.01389	0.086109	-0.01389	0.389175
12/17/2002	0.084337	0.00546	0.084337	0.121966	0.136158	0.589985
12/18/2002	0.084176	-0.04416	0.084176	-0.01148	0.031259	0.920866
12/19/2002	0.063712	0.00022	0.063712	-0.0183	0.00022	0.860848
12/20/2002	0.068	-0.0147	0.068	-0.01292	0.034357	0.861906
12/21/2002	0	0	0	0	0	0.863206
12/22/2002	0	0	0	0	0	0.791222
12/23/2002	0.075103	-0.02382	0.075103	0.09242	0.063565	0.355918
12/24/2002	0.03157	0.016646	0.03157	0.011151	-0.02947	0.363217
12/25/2002	0	0	0	0	0	0.373901
12/26/2002	0	0	0	0	0	0.391002
12/27/2002	0	0	0	0	0	0.42265
12/28/2002	0	0	0	0	0	0.5
12/29/2002	0	0	0	0	0	-
12/30/2002	-0.01431	-0.01431	-0.01431	-0.01996	-0.01431	-
	0.26478	-0.01328	0.26478	0.65702	0.358546	-

Table 4.4: Cumulative Abnormal Return for Kikambala Attack, 2002

	CAR					
	KENYA COMMERCIAL BANK (~KS)	EAST AFRICAN BREWERIES (~KS)	KENYA COMMERCIAL BANK (~KS)	KENYA POWER & LIGHTING (~R)	MUMIAS SUGAR COMPANY (~KS)	t-values
10/29/2002	0					0.000164
10/30/2002	0.083332	-0.01101	0.083332	0.011981	0.053095	0.000147
10/31/2002	0.056794	-0.03755	0.056794	-0.02579	0.026557	0.000132
11/1/2002	0.089414	-0.03941	0.089414	-0.02766	0.048791	0.000113
11/2/2002	0.089414	-0.03941	0.089414	-0.02766	0.048791	9.72E-05
11/3/2002	0.089414	-0.03941	0.089414	-0.02766	0.048791	8.31E-05
11/4/2002	0.075064	-0.12394	0.075064	0.389812	0.03444	7.07E-05
11/5/2002	0.111868	-0.0294	0.111868	0.376617	0.021245	4.91E-05
11/6/2002	0.187784	-0.04872	0.187784	0.452533	0.001923	2.09E-05
11/7/2002	0.216779	-0.02684	0.216779	0.430802	0.029979	8.11E-06
11/8/2002	0.201772	-0.06109	0.201772	0.518737	-0.04185	1.88E-06
11/9/2002	0.201772	-0.06109	0.201772	0.518737	-0.04185	3.43E-07
11/10/2002	0.201772	-0.06109	0.201772	0.518737	-0.04185	4.6E-08
11/11/2002	0.182655	-0.07039	0.182655	0.59962	-0.06096	4.07E-09
11/12/2002	0.153509	-0.08827	0.153509	0.688422	-0.06913	2.83E-10
11/13/2002	0.128716	-0.09164	0.128716	0.784506	-0.07249	1.52E-11

11/14/2002	0.117071	-0.11252	0.117071	0.75276	-0.08414	3.68E-13
11/15/2002	0.022798	-0.1046	0.022798	0.673498	-0.07622	3.78E-14
11/16/2002	0.022798	-0.1046	0.022798	0.673498	-0.07622	2.38E-15
11/17/2002	0.022798	-0.1046	0.022798	0.673498	-0.07622	7.25E-17
11/18/2002	0.038919	-0.18574	0.038919	0.577259	-0.0601	6.72E-19
11/19/2002	0.055264	-0.16423	0.055264	0.492338	-0.04376	6.41E-22
11/20/2002	-0.05669	-0.11637	-0.05669	0.410785	0.014433	2.87E-22
11/21/2002	-0.0371	-0.1116	-0.0371	0.359102	0.11672	8.96E-22
11/22/2002	-0.02929	-0.09819	-0.02929	0.350385	0.198215	4.99E-21
11/23/2002	-0.02929	-0.09819	-0.02929	0.350385	0.198215	2.74E-20
11/24/2002	-0.02929	-0.09819	-0.02929	0.350385	0.198215	1.49E-19
11/25/2002	0.027219	-0.08756	0.027219	0.310599	0.20885	6.44E-19
11/26/2002	0.01309	-0.07425	0.01309	0.225519	0.212265	3.14E-18
11/27/2002	0.037949	-0.06725	0.037949	0.24223	0.229071	1.43E-17
11/28/2002	0.032072	-0.07312	0.032072	0.236352	0.262029	7.42E-17
11/29/2002	0.020934	-0.04323	0.020934	0.225214	0.250891	3.79E-16
11/30/2002	0.020934	-0.04323	0.020934	0.225214	0.250891	1.9E-15
12/1/2002	0.020934	-0.04323	0.020934	0.225214	0.250891	9.41E-15
12/2/2002	0.007291	-0.03933	0.007291	0.238731	0.189372	3.78E-14
12/3/2002	-0.05791	-0.01262	-0.05791	0.3027	0.186674	1.8E-13
12/4/2002	-0.06068	0.013177	-0.06068	0.282067	0.183897	8.39E-13
12/5/2002	-0.06434	0.027855	-0.06434	0.205685	0.200243	3.59E-12
12/6/2002	-0.06434	0.027855	-0.06434	0.205685	0.200243	1.5E-11
12/7/2002	-0.06434	0.027855	-0.06434	0.205685	0.200243	6.08E-11
12/8/2002	-0.06434	0.027855	-0.06434	0.205685	0.200243	2.41E-10
12/9/2002	-0.06326	0.038209	-0.06326	0.216568	0.201322	9.23E-10
12/10/2002	-0.07422	0.036437	-0.07422	0.292985	0.190361	3.43E-09
12/11/2002	-0.09218	0.062933	-0.09218	0.355382	0.172401	1.22E-08
12/12/2002	-0.09218	0.062933	-0.09218	0.355382	0.172401	4.19E-08
12/13/2002	-0.11392	0.05812	-0.11392	0.408027	0.150665	1.36E-07
12/14/2002	-0.11392	0.05812	-0.11392	0.408027	0.150665	4.12E-07
12/15/2002	-0.11392	0.05812	-0.11392	0.408027	0.150665	1.15E-06
12/16/2002	-0.12781	0.061375	-0.12781	0.494135	0.136774	2.79E-06
12/17/2002	-0.04347	0.066835	-0.04347	0.616101	0.272931	1.12E-06
12/18/2002	0.040706	0.022676	0.040706	0.604625	0.30419	3.96E-07
12/19/2002	0.104419	0.022896	0.104419	0.586327	0.304411	5.62E-07
12/20/2002	0.172419	0.008201	0.172419	0.573411	0.338768	1.81E-06
12/21/2002	0.172419	0.008201	0.172419	0.573411	0.338768	4.13E-06
12/22/2002	0.172419	0.008201	0.172419	0.573411	0.338768	3.2E-06
12/23/2002	0.247522	-0.01562	0.247522	0.665831	0.402333	9.01E-56
12/24/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/25/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/26/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/27/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/28/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/29/2002	0.279092	0.001029	0.279092	0.676983	0.372859	-
12/30/2002	0.26478	-0.01328	0.26478	0.65702	0.358546	

Table 4.5: Daily Market-Adjusted Abnormal Return (MAAR) for Uhuru park attack of 2010

Date of Events	MAAR-SAF	MAAR-EQTY	MAAR-KCB	MAAR-MUMIAS	MAAR-COOP	t-values
13/05/2010	0.00	-0.01	0.02	0.01	-0.01	0.14
14/05/2010	0.00	0.00	0.00	0.00	0.00	0.12
15/05/2010	0.00	0.00	0.00	0.00	0.00	0.12
16/05/2010	-0.02	0.01	0.03	0.00	0.00	0.12
17/05/2010	-0.01	0.02	0.03	0.00	0.00	0.15
18/05/2010	0.01	0.08	0.00	-0.01	0.00	0.16
19/05/2010	-0.01	0.04	-0.05	-0.02	0.00	0.15
20/05/2010	0.00	0.01	-0.01	0.00	0.02	0.16
21/05/2010	0.00	0.00	0.00	0.00	0.00	0.21
22/05/2010	0.00	0.00	0.00	0.00	0.00	0.21
23/05/2010	0.00	0.04	0.01	0.00	-0.02	0.21
24/05/2010	-0.03	0.04	0.00	0.00	0.00	0.17
25/05/2010	0.01	-0.05	0.03	-0.01	0.03	0.22
26/05/2010	0.00	-0.05	0.01	-0.03	0.02	0.26
27/05/2010	0.03	0.01	0.00	0.02	0.00	0.32
28/05/2010	0.00	0.00	0.00	0.00	0.00	0.22
29/05/2010	0.00	0.00	0.00	0.00	0.00	0.22
30/05/2010	0.00	0.05	-0.03	0.02	0.01	0.22
31/05/2010	0.00	0.00	0.00	0.00	0.00	0.22
1/6/2010	0.01	0.02	0.01	0.01	0.01	0.22
2/6/2010	-0.01	0.02	-0.01	-0.01	0.00	0.23
3/6/2010	0.01	0.01	0.01	0.00	-0.01	0.25
4/6/2010	0.00	0.00	0.00	0.00	0.00	0.22
5/6/2010	0.00	0.00	0.00	0.00	0.00	0.22
6/6/2010	-0.01	0.01	0.00	0.00	-0.01	0.22
7/6/2010	0.00	0.01	0.00	-0.01	0.00	0.23
8/6/2010	-0.01	-0.03	0.00	0.01	0.00	0.24
9/6/2010	0.00	0.00	0.01	0.00	0.00	0.27
10/6/2010	0.01	0.02	0.00	0.00	0.01	0.29
11/6/2010	0.00	0.00	0.00	0.00	0.00	0.28
12/6/2010	0.00	0.00	0.00	0.00	0.00	0.28
13/6/2010	-0.01	0.00	-0.01	0.00	0.00	0.28
14/6/2010	0.01	0.01	0.00	0.01	0.02	0.29
15/6/2010	0.02	-0.01	-0.01	-0.01	0.01	0.32
16/6/2010	0.01	-0.01	-0.02	-0.01	0.06	0.28
17/6/2010	-0.01	-0.02	-0.01	0.00	0.04	0.41

18/6/2010	0.00	0.00	0.00	0.00	0.00	0.59
19/6/2010	0.00	0.00	0.00	0.00	0.00	0.59
20/6/2010	0.00	0.01	-0.05	0.01	0.02	0.59
21/6/2010	0.01	0.00	0.00	0.01	0.03	0.71
22/6/2010	0.00	0.00	0.00	0.00	0.01	0.78
23/6/2010	0.00	-0.01	-0.02	-0.02	0.00	0.83
24/6/2010	0.00	0.00	0.00	0.00	0.00	0.81
25/6/2010	0.00	0.00	0.00	0.00	0.00	0.81
26/6/2010	0.00	0.00	0.00	0.00	0.00	0.81
27/6/2010	-0.01	0.01	0.00	-0.01	-0.02	0.81
28/6/2010	0.00	0.00	0.00	-0.01	-0.03	0.77
29/6/2010	0.00	0.01	0.00	0.00	0.01	0.60
30/6/2010	0.01	0.00	0.01	0.01	0.01	0.63
1/7/2010	0.00	-0.01	0.00	-0.01	0.00	0.63
2/7/2010	0.00	0.00	0.00	0.00	0.00	0.65
3/7/2010	0.00	0.00	0.00	0.00	0.00	0.65
4/7/2010	-0.01	0.01	-0.02	0.00	0.00	0.66
5/7/2010	0.00	-0.01	0.00	-0.01	0.01	0.68
6/7/2010	0.00	-0.02	0.00	0.01	0.00	0.70
7/7/2010	0.00	-0.01	0.00	0.00	-0.01	0.69
8/7/2010	0.00	0.00	-0.02	0.00	-0.02	0.64
9/7/2010	0.00	0.00	0.00	0.00	0.00	0.53
10/7/2010	0.00	0.00	0.00	0.00	0.00	0.54
11/7/2010	0.00	0.00	0.00	-0.01	-0.02	0.56
12/7/2010	0.00	0.00	0.01	0.00	0.01	0.49
13/7/2010	0.01	0.00	0.01	-0.01	-0.01	0.62
14/7/2010	0.03	0.18	-0.10	-0.06	0.16	-

Table 4.6: Cumulative Abnormal Return for Uhuru park attack of 2010

Date of Events	CAR-SAF	CAR-EQTY	CAR-KCB	CAR-MUMIAS	CAR-COOP	t-values
13/05/2010	0.00	-0.01	0.02	0.01	-0.01	3.77E-18
14/05/2010	0.00	-0.01	0.02	0.01	-0.01	1.65E-18
15/05/2010	0.00	-0.01	0.02	0.01	-0.01	6.74E-19
16/05/2010	-0.02	0.00	0.04	0.01	-0.01	2.51E-19
17/05/2010	-0.03	0.01	0.08	0.01	-0.01	1.35E-19
18/05/2010	-0.02	0.09	0.08	0.00	-0.01	8.45E-20
19/05/2010	-0.03	0.13	0.03	-0.02	-0.01	3.95E-20
20/05/2010	-0.03	0.14	0.02	-0.01	0.01	2.17E-20
21/05/2010	-0.03	0.14	0.02	-0.01	0.01	2.08E-20

22/05/2010	-0.03	0.14	0.02	-0.01	0.01	1.94E-20
23/05/2010	-0.03	0.18	0.03	-0.02	-0.01	1.73E-20
24/05/2010	-0.06	0.22	0.03	-0.02	-0.01	9.58E-21
25/05/2010	-0.05	0.17	0.05	-0.03	0.02	1.02E-20
26/05/2010	-0.05	0.12	0.07	-0.05	0.04	1.52E-20
27/05/2010	-0.02	0.13	0.06	-0.03	0.04	3.41E-20
28/05/2010	-0.02	0.13	0.06	-0.03	0.04	3.82E-20
29/05/2010	-0.02	0.13	0.06	-0.03	0.04	4.13E-20
30/05/2010	-0.01	0.18	0.03	-0.02	0.05	4.26E-20
31/05/2010	-0.01	0.18	0.03	-0.02	0.05	4.53E-20
1/6/2010	-0.01	0.20	0.04	-0.01	0.06	4.57E-20
2/6/2010	-0.01	0.22	0.03	-0.01	0.06	4.86E-20
3/6/2010	-0.01	0.23	0.04	-0.02	0.05	6.07E-20
4/6/2010	-0.01	0.23	0.04	-0.02	0.05	4.88E-20
5/6/2010	-0.01	0.23	0.04	-0.02	0.05	3.53E-20
6/6/2010	-0.02	0.24	0.04	-0.02	0.05	2.23E-20
7/6/2010	-0.02	0.24	0.04	-0.02	0.05	1.45E-20
8/6/2010	-0.02	0.22	0.04	-0.01	0.05	9.32E-21
9/6/2010	-0.03	0.21	0.05	-0.02	0.06	7.22E-21
10/6/2010	-0.02	0.23	0.05	-0.02	0.06	6.56E-21
11/6/2010	-0.02	0.23	0.05	-0.02	0.06	4.73E-21
12/6/2010	-0.02	0.23	0.05	-0.02	0.06	2.67E-21
13/6/2010	-0.03	0.24	0.04	-0.02	0.06	1.06E-21
14/6/2010	-0.02	0.24	0.04	-0.01	0.08	3.27E-22
15/6/2010	0.00	0.24	0.03	-0.01	0.08	1.14E-22
16/6/2010	0.01	0.23	0.01	-0.02	0.14	2.85E-24
17/6/2010	0.01	0.21	0.00	-0.02	0.18	2.44E-24
18/6/2010	0.01	0.21	0.00	-0.02	0.18	2.52E-23
19/6/2010	0.01	0.21	0.00	-0.02	0.18	2.54E-22
20/6/2010	0.00	0.22	-0.05	-0.01	0.21	2.51E-21
21/6/2010	0.01	0.22	-0.05	0.00	0.23	2.85E-20
22/6/2010	0.01	0.22	-0.06	0.00	0.24	2.33E-19
23/6/2010	0.01	0.21	-0.07	-0.02	0.24	1.22E-18
24/6/2010	0.02	0.22	-0.07	-0.01	0.24	7.38E-18
25/6/2010	0.02	0.22	-0.07	-0.01	0.24	3.99E-17
26/6/2010	0.02	0.22	-0.07	-0.01	0.24	1.85E-16
27/6/2010	0.00	0.22	-0.08	-0.02	0.22	6.89E-16
28/6/2010	0.01	0.22	-0.08	-0.03	0.19	3.24E-15
29/6/2010	0.01	0.23	-0.07	-0.03	0.20	4.34E-14
30/6/2010	0.01	0.22	-0.07	-0.03	0.20	5.18E-13
1/7/2010	0.01	0.21	-0.07	-0.04	0.20	5.95E-12

2/7/2010	0.01	0.21	-0.07	-0.04	0.20	6.08E-11
3/7/2010	0.01	0.21	-0.07	-0.04	0.20	5.88E-10
4/7/2010	0.00	0.22	-0.08	-0.04	0.20	5.33E-09
5/7/2010	0.01	0.21	-0.09	-0.05	0.21	3.61E-08
6/7/2010	0.01	0.19	-0.09	-0.04	0.21	1.59E-07
7/7/2010	0.01	0.18	-0.09	-0.04	0.20	4.59E-07
8/7/2010	0.01	0.18	-0.11	-0.04	0.18	1.42E-06
9/7/2010	0.01	0.18	-0.11	-0.04	0.18	2.1E-05
10/7/2010	0.01	0.18	-0.11	-0.04	0.18	0.000268
11/7/2010	0.01	0.18	-0.12	-0.05	0.15	0.002418
12/7/2010	0.01	0.18	-0.11	-0.05	0.17	0.054239
13/7/2010	0.03	0.18	-0.10	-0.06	0.16	-
14/7/2010						-

Table 4.7: Daily Market-Adjusted Abnormal Return (MAAR) for Al-shabaab attack 2011

	MAAR-Saf	MAAR-Eqty	MAAR-KCB	MAAR-KPLC	MAAR-Coop	t-values
23/09/2011	0.00	0.00	0.00	0.00	0.00	0.82
24/09/2011	0.00	0.00	0.00	0.00	0.00	0.65
25/09/2011	-0.01	0.00	0.00	0.00	0.00	0.65
26/09/2011	-0.01	0.00	-0.03	-0.03	0.01	0.69
27/09/2011	0.01	-0.01	0.00	-0.03	0.01	0.75
28/09/2011	-0.04	0.00	-0.02	0.00	0.00	0.73
29/09/2011	-0.01	-0.01	0.00	-0.01	0.00	0.86
30/09/2011	0.00	0.00	0.00	0.00	0.00	0.93
1/10/2011	0.00	0.00	0.00	0.00	0.00	0.93
2/10/2011	0.02	-0.02	-0.01	-0.01	0.01	0.93
3/10/2011	0.02	0.00	-0.01	0.00	0.01	0.89
4/10/2011	-0.02	0.02	0.00	0.00	0.02	0.87
5/10/2011	0.01	-0.04	-0.01	-0.01	0.01	1.00
6/10/2011	0.00	0.00	0.00	0.01	0.02	0.98
7/10/2011	0.00	0.00	0.00	0.00	0.00	0.97
8/10/2011	0.00	0.00	0.00	0.00	0.00	0.97
9/10/2011	-0.01	-0.01	-0.01	-0.01	0.02	0.97
10/10/2011	0.02	0.00	-0.01	0.00	-0.01	0.85
11/10/2011	0.00	0.00	-0.02	0.00	0.01	0.95
12/10/2011	-0.01	0.00	-0.01	0.00	0.00	0.90
13/10/2011	0.00	0.04	-0.02	0.01	0.00	0.87
14/10/2011	0.00	0.00	0.00	0.00	0.00	0.87
15/10/2011	0.00	0.00	0.00	0.00	0.00	0.87
16/10/2011	0.00	-0.01	-0.02	0.00	-0.01	0.87

17/10/2011	0.01	0.01	0.00	0.00	-0.01	0.88
18/10/2011	-0.02	0.04	0.00	0.01	-0.05	0.98
19/10/2011	0.00	0.00	0.00	-0.01	0.00	0.87
20/10/2011	0.00	0.03	0.00	0.00	-0.05	0.85
21/10/2011	0.00	0.00	0.00	0.00	0.00	0.63
22/10/2011	0.00	0.00	0.00	0.00	0.00	0.63
23/10/2011	0.00	0.00	0.01	0.00	-0.03	0.63
24/10/2011	0.00	0.00	0.01	0.00	0.01	0.50
25/10/2011	-0.01	0.00	0.05	0.00	-0.02	0.54
26/10/2011	-0.02	-0.01	0.00	0.00	0.04	0.49
27/10/2011	-0.04	0.00	0.05	0.00	0.01	0.70
28/10/2011	0.00	0.00	0.00	0.00	0.00	0.94
29/10/2011	0.00	0.00	0.00	0.00	0.00	0.94
30/10/2011	-0.02	0.00	0.03	0.00	0.01	0.94
31/10/2011	-0.01	-0.01	-0.01	-0.01	-0.02	0.94
1/11/2011	-0.03	0.00	0.02	0.05	0.05	0.98
2/11/2011	0.05	-0.03	-0.04	0.01	-0.03	0.47
3/11/2011	0.00	0.01	0.00	0.00	0.00	0.90
4/11/2011	0.00	0.00	0.00	0.00	0.00	0.94
5/11/2011	0.00	0.00	0.00	0.00	0.00	0.94
6/11/2011	0.00	0.02	0.01	0.00	0.00	0.94
7/11/2011	0.01	0.02	0.02	0.01	0.03	0.93
8/11/2011	0.00	0.01	0.00	0.00	-0.03	0.79
9/11/2011	-0.03	0.01	0.00	0.00	0.01	0.98
10/11/2011	0.01	0.00	0.00	0.01	-0.02	0.52
11/11/2011	0.00	0.00	0.00	0.00	0.00	0.82
12/11/2011	0.00	0.00	0.00	0.00	0.00	0.82
13/11/2011	0.01	0.02	0.00	-0.02	-0.02	0.82
14/11/2011	0.00	0.00	-0.03	-0.01	0.00	0.85
15/11/2011	0.01	-0.01	0.01	0.01	0.00	0.84
16/11/2011	0.01	-0.01	-0.01	-0.01	0.01	0.83
17/11/2011	-0.01	0.00	0.00	0.01	0.00	0.86
18/11/2011	0.00	0.00	0.00	0.00	0.00	1.00
19/11/2011	0.00	0.00	0.00	0.00	0.00	1.00
20/11/2011	0.00	0.00	0.00	0.00	0.00	1.00
21/11/2011	0.00	0.00	-0.01	-0.02	0.00	1.00
22/11/2011	0.00	-0.02	-0.01	0.00	0.00	0.91
23/11/2011	0.01	0.00	-0.01	0.02	-0.02	0.86
24/11/2011						-

Table 4.8: Cumulative Abnormal Return for Al-shabaab 2011 attack

	CAR-Saf	CAR-EQT	CAR-KCB	CAR-KPLC	CAR-Coop	t-values
23/09/2011	0.00	0.00	0.00	0.00	0.00	5.64E-21
24/09/2011	0.00	0.00	0.00	0.00	0.00	2.3E-21
25/09/2011	-0.01	0.00	0.00	0.00	0.00	8.55E-22
26/09/2011	-0.01	0.00	-0.03	-0.02	0.01	4.65E-22
27/09/2011	0.00	0.00	-0.03	-0.05	0.02	4.86E-22
28/09/2011	-0.04	0.00	-0.04	-0.05	0.01	3.89E-22
29/09/2011	-0.06	-0.01	-0.04	-0.06	0.01	9E-22
30/09/2011	-0.06	-0.01	-0.04	-0.06	0.01	2.77E-21
1/10/2011	-0.06	-0.01	-0.04	-0.06	0.01	8.44E-21
2/10/2011	-0.04	-0.03	-0.05	-0.07	0.02	2.55E-20
3/10/2011	-0.02	-0.03	-0.06	-0.07	0.04	6.6E-20
4/10/2011	-0.04	-0.01	-0.06	-0.06	0.05	1.57E-19
5/10/2011	-0.02	-0.04	-0.07	-0.07	0.06	5.6E-19
6/10/2011	-0.02	-0.04	-0.07	-0.07	0.08	1.9E-18
7/10/2011	-0.02	-0.04	-0.07	-0.07	0.08	6.85E-18
8/10/2011	-0.02	-0.04	-0.07	-0.07	0.08	2.45E-17
9/10/2011	-0.02	-0.05	-0.08	-0.08	0.10	8.63E-17
10/10/2011	-0.01	-0.05	-0.09	-0.07	0.09	2.73E-16
11/10/2011	-0.01	-0.05	-0.11	-0.08	0.10	9.51E-16
12/10/2011	-0.02	-0.05	-0.11	-0.08	0.09	3.21E-15
13/10/2011	-0.02	-0.01	-0.13	-0.07	0.10	1.02E-14
14/10/2011	-0.02	-0.01	-0.13	-0.07	0.10	3.19E-14
15/10/2011	-0.02	-0.01	-0.13	-0.07	0.10	9.8E-14
16/10/2011	-0.02	-0.02	-0.15	-0.07	0.09	2.96E-13
17/10/2011	-0.01	0.00	-0.15	-0.08	0.08	9.03E-13
18/10/2011	-0.03	0.03	-0.15	-0.07	0.03	2.93E-12
19/10/2011	-0.03	0.03	-0.15	-0.07	0.03	7.01E-12
20/10/2011	-0.03	0.06	-0.15	-0.08	-0.02	1.59E-11
21/10/2011	-0.03	0.06	-0.15	-0.08	-0.02	9.46E-12
22/10/2011	-0.03	0.06	-0.15	-0.08	-0.02	5.14E-12
23/10/2011	-0.03	0.06	-0.15	-0.08	-0.05	2.48E-12
24/10/2011	-0.03	0.06	-0.14	-0.08	-0.04	1.58E-13
25/10/2011	-0.03	0.05	-0.09	-0.08	-0.06	8.08E-15
26/10/2011	-0.05	0.04	-0.08	-0.08	-0.02	1.47E-17
27/10/2011	-0.09	0.04	-0.03	-0.08	-0.01	2.92E-18
28/10/2011	-0.09	0.04	-0.03	-0.08	-0.01	1.41E-17
29/10/2011	-0.09	0.04	-0.03	-0.08	-0.01	6.74E-17
30/10/2011	-0.10	0.04	0.00	-0.08	0.00	3.16E-16
31/10/2011	-0.11	0.03	-0.01	-0.08	-0.03	1.99E-15

1/11/2011	-0.15	0.04	0.01	-0.04	0.02	1.1E-14
2/11/2011	-0.10	0.00	-0.03	-0.03	0.00	2.78E-16
3/11/2011	-0.10	0.02	-0.03	-0.03	-0.01	1.99E-15
4/11/2011	-0.10	0.02	-0.03	-0.03	-0.01	1.47E-14
5/11/2011	-0.10	0.02	-0.03	-0.03	-0.01	1.06E-13
6/11/2011	-0.10	0.03	-0.02	-0.02	-0.01	7.46E-13
7/11/2011	-0.09	0.05	0.00	-0.01	0.02	5.06E-12
8/11/2011	-0.09	0.06	0.01	-0.01	0.00	2.09E-11
9/11/2011	-0.12	0.07	0.01	-0.01	0.01	1.42E-10
10/11/2011	-0.11	0.07	0.01	0.00	-0.01	7.13E-11
11/11/2011	-0.11	0.07	0.01	0.00	-0.01	3.18E-10
12/11/2011	-0.11	0.07	0.01	0.00	-0.01	1.21E-09
13/11/2011	-0.10	0.09	0.01	-0.02	-0.03	3.62E-09
14/11/2011	-0.10	0.09	-0.02	-0.04	-0.02	3.01E-08
15/11/2011	-0.09	0.08	-0.01	-0.03	-0.02	2.38E-07
16/11/2011	-0.08	0.07	-0.02	-0.04	0.00	1.78E-06
17/11/2011	-0.09	0.07	-0.02	-0.03	0.00	1.28E-05
18/11/2011	-0.09	0.07	-0.02	-0.03	0.00	7.59E-05
19/11/2011	-0.09	0.07	-0.02	-0.03	0.00	0.000412
20/11/2011	-0.09	0.07	-0.02	-0.03	0.00	0.001966
21/11/2011	-0.09	0.08	-0.03	-0.05	-0.01	0.00753
22/11/2011	-0.08	0.06	-0.04	-0.05	-0.01	0.029259
23/11/2011	-0.07	0.06	-0.05	-0.03	-0.03	-
24/11/2011	-0.07	0.06	-0.05	-0.03	-0.03	-

Table 4.9: Daily Market-Adjusted Abnormal Return (MAAR) for Bella Vista attack 2012

	MAAR-Saf	MAAR-Coop	MAAR-Mumias	MAAR-Eqty	MAAR-KCB	t-values
13/04/2012						
14/04/2012	0.00	0.00	0.00	0.00	0.00	0.761827
15/04/2012	0.00	0.00	0.00	0.00	0.00	0.498396
16/04/2012	0.02	0.00	0.02	-0.01	0.00	0.498469
17/04/2012	0.00	0.00	0.04	0.01	0.00	0.477968
18/04/2012	0.02	0.00	0.02	0.00	-0.01	0.478047
19/04/2012	0.02	0.00	0.09	0.00	0.01	0.478129
20/04/2012	0.00	0.01	0.10	0.00	0.00	0.478214
21/04/2012	0.00	0.00	0.00	0.00	0.00	0.380835
22/04/2012	0.00	0.00	0.00	0.00	0.00	0.215467
23/04/2012	0.00	0.02	0.03	0.00	0.00	0.214355
24/04/2012	0.02	0.02	-0.09	0.01	0.00	0.144126

25/04/2012	0.01	0.01	-0.09	0.05	0.00	0.144157
26/04/2012	-0.03	0.00	0.00	-0.02	-0.03	0.144189
27/04/2012	0.00	-0.02	-0.01	-0.01	-0.02	0.144222
28/04/2012	0.00	0.00	0.00	0.00	0.00	0.164167
29/04/2012	0.00	0.00	0.00	0.00	0.00	0.186652
30/04/2012	0.00	0.01	0.00	0.01	0.00	0.186714
1/5/2012	0.00	0.00	0.00	0.00	0.00	0.300814
2/5/2012	0.02	0.00	0.02	0.01	0.01	0.300929
3/5/2012	0.01	0.00	0.07	-0.01	0.03	0.301049
4/5/2012	0.01	0.01	0.03	0.00	0.02	0.301175
5/5/2012	0.00	0.00	0.00	0.00	0.00	0.301307
6/5/2012	0.00	0.00	0.00	0.00	0.00	0.594142
7/5/2012	0.01	0.00	-0.01	0.00	-0.01	0.867482
8/5/2012	-0.04	0.00	-0.02	-0.01	-0.01	0.831332
9/5/2012	0.00	0.00	-0.01	0.00	0.00	0.831417
10/5/2012	0.03	0.00	-0.01	-0.02	0.00	0.831508
11/5/2012	-0.01	0.00	0.00	0.01	0.01	0.974143
12/5/2012	0.00	0.00	0.00	0.00	0.00	0.948805
13/5/2012	0.00	0.00	0.00	0.00	0.00	0.984203
14/5/2012	0.01	0.00	-0.01	0.01	0.02	0.810461
15/5/2012	0.00	0.01	0.00	0.01	0.00	0.810596
16/5/2012	0.01	0.00	0.00	-0.01	0.01	0.81074
17/5/2012	0.00	0.01	0.01	0.00	0.00	0.810894
18/5/2012	0.00	0.00	0.00	0.00	-0.03	0.974502
19/5/2012	0.00	0.00	0.00	0.00	0.00	0.718121
20/5/2012	0.00	0.00	0.00	0.00	0.00	0.71839
21/5/2012	0.00	0.00	0.02	0.01	-0.01	0.623262
22/5/2012	0.00	0.00	0.01	-0.01	-0.07	0.62365
23/5/2012	-0.03	-0.01	0.01	0.00	0.01	0.624071
24/5/2012	-0.01	-0.01	-0.01	0.01	0.00	0.624529
25/5/2012	-0.03	-0.01	0.00	0.01	0.01	0.62503
26/5/2012	0.00	0.00	0.00	0.00	0.00	0.62558
27/5/2012	0.00	0.00	0.00	0.00	0.00	0.626186
28/5/2012	0.00	0.00	-0.01	0.01	0.02	0.626857
29/5/2012	0.00	-0.02	-0.01	-0.01	0.00	0.627605
30/5/2012	0.00	-0.04	0.00	0.00	0.00	0.628443
31/5/2012	0.00	-0.01	0.02	0.00	0.01	0.629388
1/6/2012	0.00	0.00	0.00	0.00	0.00	0.630464
2/6/2012	0.00	0.00	0.00	0.00	0.00	0.389175
3/6/2012	0.00	0.00	0.00	0.00	0.00	0.589985
4/6/2012	0.00	0.00	0.01	-0.01	0.00	0.920866

5/6/2012	0.03	0.01	-0.01	-0.02	0.00	0.860848
6/6/2012	0.00	0.02	0.01	0.00	0.00	0.861906
7/6/2012	0.00	0.00	0.01	0.00	0.00	0.863206
8/6/2012	0.01	0.00	0.00	0.00	0.00	0.791222
9/6/2012	0.00	0.00	0.00	0.00	0.00	0.355918
10/6/2012	0.00	0.00	0.00	0.00	0.00	0.363217
11/6/2012	0.00	0.01	0.02	-0.01	0.00	0.373901
12/6/2012	0.01	0.02	0.01	0.01	0.00	0.391002
13/6/2012	-0.01	0.00	0.01	0.02	0.00	0.42265
14/6/2012	0.00	0.00	0.02	0.02	0.00	0.5
15/6/2012	0.00	0.00	0.00	0.00	0.00	-
16/6/2012	0.00	0.00	0.00	0.00	0.00	-

Table 4.10: Cumulative Abnormal Return for Bella Vista attack 2012

	Saf-CAR	Coop-CAR	Mumias-CAR0	EQTY-CAR	KCB-CAR	t-values
13/04/2012						
14/04/2012	0.00	0.00	0.00	0.00	0.00	0.000164
15/04/2012	0.00	0.00	0.00	0.00	0.00	0.000147
16/04/2012	0.02	0.00	0.02	-0.01	0.00	0.000132
17/04/2012	0.02	0.00	0.06	0.00	0.00	0.000113
18/04/2012	0.03	0.01	0.08	0.00	-0.01	9.72E-05
19/04/2012	0.05	0.01	0.17	0.00	0.00	8.31E-05
20/04/2012	0.05	0.02	0.27	0.00	0.00	7.07E-05
21/04/2012	0.05	0.02	0.27	0.00	0.00	4.91E-05
22/04/2012	0.05	0.02	0.27	0.00	0.00	2.09E-05
23/04/2012	0.05	0.04	0.30	0.00	0.00	8.11E-06
24/04/2012	0.06	0.06	0.22	0.02	0.00	1.88E-06
25/04/2012	0.08	0.07	0.13	0.06	0.00	3.43E-07
26/04/2012	0.05	0.07	0.13	0.04	-0.03	4.6E-08
27/04/2012	0.05	0.05	0.12	0.03	-0.05	4.07E-09
28/04/2012	0.05	0.05	0.12	0.03	-0.05	2.83E-10
29/04/2012	0.05	0.05	0.12	0.03	-0.05	1.52E-11
30/04/2012	0.05	0.06	0.12	0.04	-0.05	3.68E-13
1/5/2012	0.05	0.06	0.12	0.04	-0.05	3.78E-14
2/5/2012	0.06	0.06	0.14	0.05	-0.04	2.38E-15
3/5/2012	0.08	0.06	0.20	0.04	-0.01	7.25E-17
4/5/2012	0.09	0.08	0.23	0.04	0.01	6.72E-19
5/5/2012	0.09	0.08	0.23	0.04	0.01	6.41E-22
6/5/2012	0.09	0.08	0.23	0.04	0.01	2.87E-22
7/5/2012	0.11	0.08	0.22	0.04	0.00	8.96E-22

8/5/2012	0.06	0.08	0.21	0.03	-0.01	4.99E-21
9/5/2012	0.06	0.08	0.20	0.03	-0.01	2.74E-20
10/5/2012	0.09	0.08	0.19	0.00	-0.01	1.49E-19
11/5/2012	0.08	0.09	0.19	0.02	0.00	6.44E-19
12/5/2012	0.08	0.09	0.19	0.02	0.00	3.14E-18
13/5/2012	0.08	0.09	0.19	0.02	0.00	1.43E-17
14/5/2012	0.09	0.09	0.18	0.03	0.02	7.42E-17
15/5/2012	0.09	0.09	0.18	0.04	0.02	3.79E-16
16/5/2012	0.11	0.10	0.18	0.03	0.03	1.9E-15
17/5/2012	0.11	0.11	0.19	0.03	0.03	9.41E-15
18/5/2012	0.11	0.11	0.19	0.03	0.00	3.78E-14
19/5/2012	0.11	0.11	0.19	0.03	0.00	1.8E-13
20/5/2012	0.11	0.11	0.19	0.03	0.00	8.39E-13
21/5/2012	0.11	0.11	0.21	0.04	-0.01	3.59E-12
22/5/2012	0.11	0.12	0.21	0.03	-0.08	1.5E-11
23/5/2012	0.08	0.11	0.22	0.03	-0.07	6.08E-11
24/5/2012	0.07	0.10	0.21	0.04	-0.07	2.41E-10
25/5/2012	0.04	0.09	0.21	0.05	-0.06	9.23E-10
26/5/2012	0.04	0.09	0.21	0.05	-0.06	3.43E-09
27/5/2012	0.04	0.09	0.21	0.05	-0.06	1.22E-08
28/5/2012	0.04	0.08	0.21	0.07	-0.04	4.19E-08
29/5/2012	0.04	0.06	0.20	0.05	-0.04	1.36E-07
30/5/2012	0.04	0.03	0.20	0.05	-0.04	4.12E-07
31/5/2012	0.04	0.02	0.21	0.05	-0.03	1.15E-06
1/6/2012	0.04	0.02	0.21	0.05	-0.03	2.79E-06
2/6/2012	0.04	0.02	0.21	0.05	-0.03	1.12E-06
3/6/2012	0.04	0.02	0.21	0.05	-0.03	3.96E-07
4/6/2012	0.04	0.02	0.22	0.04	-0.03	5.62E-07
5/6/2012	0.07	0.03	0.21	0.02	-0.03	1.81E-06
6/6/2012	0.07	0.04	0.22	0.02	-0.03	4.13E-06
7/6/2012	0.07	0.04	0.23	0.02	-0.03	3.2E-06
8/6/2012	0.08	0.04	0.23	0.02	-0.03	9.01E-56
9/6/2012	0.08	0.04	0.23	0.02	-0.03	-
10/6/2012	0.08	0.04	0.23	0.02	-0.03	-
11/6/2012	0.08	0.06	0.25	0.01	-0.03	-
12/6/2012	0.10	0.07	0.26	0.02	-0.03	-
13/6/2012	0.08	0.08	0.27	0.04	-0.03	-
14/6/2012	0.08	0.08	0.28	0.07	-0.03	-
15/6/2012	0.08	0.08	0.28	0.07	-0.03	-
16/6/2012	0.08	0.08	0.28	0.07	-0.03	-

Table 4.11: Daily Market-Adjusted Abnormal Return (MAAR) for Al-shabaab 2013

	MAAR-Barclays	MAAR-CIC-Insurance	MAAR-KCB	MAAR_mumias	MAAR-safcom	t-values
17/12/2012						0.99
18/12/2012	0.00	0.01	0.00	0.04	0.00	0.96
19/12/2012	0.01	0.01	0.00	0.01	0.00	0.89
20/12/2012	0.01	0.03	0.00	-0.01	0.00	0.80
21/12/2012	0.02	-0.03	0.01	-0.03	0.00	0.68
22/12/2012	0.00	0.00	0.00	0.00	0.00	0.68
23/12/2012	0.00	0.00	0.00	0.00	0.00	0.68
24/12/2012	0.01	0.03	0.01	-0.01	0.00	0.60
25/12/2012	0.00	0.00	0.00	0.00	0.00	0.60
26/12/2012	0.00	0.00	0.00	0.00	0.00	0.60
27/12/2012	0.01	-0.03	-0.01	-0.02	0.00	0.58
28/12/2012	0.00	0.03	0.00	0.00	-0.01	0.52
29/12/2012	0.00	0.00	0.00	0.00	0.00	0.52
30/12/2012	0.00	0.00	0.00	0.00	0.00	0.52
31/12/2012	0.00	0.01	0.00	0.00	0.00	0.50
1/1/2013	0.00	0.00	0.00	0.00	0.00	0.50
2/1/2013	-0.01	-0.02	0.01	0.00	0.00	0.58
3/1/2013	0.00	-0.02	0.02	0.00	0.00	0.60
4/1/2013	-0.01	-0.01	-0.01	0.01	0.01	0.72
5/1/2013	0.00	0.00	0.00	0.00	0.00	0.72
6/1/2013	0.00	0.00	0.00	0.00	0.00	0.72
7/1/2013	-0.01	-0.02	0.00	-0.01	0.02	0.87
8/1/2013	-0.02	0.00	-0.01	-0.01	0.03	0.73
9/1/2013	-0.03	-0.02	-0.01	-0.03	0.01	0.37
10/1/2013	-0.01	0.06	0.02	0.00	-0.03	0.53
11/1/2013	-0.01	-0.01	0.03	-0.01	-0.01	0.50
12/1/2013	0.00	0.00	0.00	0.00	0.00	0.50
13/1/2013	0.00	0.00	0.00	0.00	0.00	0.50
14/1/2013	0.00	-0.01	0.00	-0.02	0.00	0.48
15/1/2013	0.00	0.00	0.02	0.00	-0.01	0.59
16/1/2013	0.01	0.01	-0.01	0.04	0.00	0.68
17/1/2013	0.01	0.04	-0.05	0.01	0.00	0.74
18/1/2013	-0.01	0.00	0.01	0.00	0.01	0.59
19/1/2013	0.00	0.00	0.00	0.00	0.00	0.59
20/1/2013	0.00	0.00	0.00	0.00	0.00	0.59
21/1/2013	0.01	0.02	0.00	-0.01	0.00	0.65
22/1/2013	0.00	0.01	0.01	-0.01	-0.02	0.81
23/1/2013	0.01	0.01	0.01	-0.01	0.00	0.91
24/1/2013	0.01	0.02	0.00	0.00	0.01	0.91

25/1/2013	-0.01	0.02	0.01	0.00	-0.01	0.91
26/1/2013	0.00	0.00	0.00	0.00	0.00	0.91
27/1/2013	0.00	0.00	0.00	0.00	0.00	0.91
28/1/2013	0.00	-0.01	0.01	0.01	-0.03	0.68
29/1/2013	0.00	0.00	0.00	0.00	-0.02	0.46
30/1/2013	0.00	0.00	0.00	0.00	0.00	0.46
31/1/2013	0.00	-0.01	-0.01	-0.01	0.02	0.72
1/2/2013	0.00	0.01	0.00	-0.01	0.02	0.98
2/2/2013	0.00	0.00	0.00	0.00	0.00	0.98
3/2/2013	0.00	0.00	0.00	0.00	0.00	0.98
4/2/2013	0.00	-0.03	0.00	-0.01	-0.02	0.83
5/2/2013	0.00	0.01	0.01	0.00	-0.02	0.54
6/2/2013	0.00	-0.01	0.01	-0.02	-0.01	0.49
7/2/2013	0.00	-0.01	0.00	0.00	-0.01	0.37
8/2/2013	-0.01	0.00	0.00	-0.01	0.02	0.63
9/2/2013	0.00	0.00	0.00	0.00	0.00	0.63
10/2/2013	0.00	0.00	0.00	0.00	0.00	0.64
12/2/2013	-0.01	-0.02	0.06	-0.03	0.01	0.90
13/2/2013	-0.02	-0.01	0.00	0.00	0.00	0.23
14/2/2013	0.01	0.01	-0.03	0.01	-0.01	0.47
15/2/2013	0.01	0.01	0.01	0.02	0.00	0.42
16/2/2013	0.00	0.00	0.00	0.00	0.00	0.50
17/2/2013	0.00	0.00	0.00	0.00	0.00	

Table 4.12: Cumulative Abnormal Return for Al-shabaab attack 2013

	CAR-Barclays	CAR-CIC-Insurance	CAR-KCB	CAR_mumias	CAR-safcom	T-Statistics
17/12/2012						
18/12/2012	0.00	0.01	0.00	0.04	0.00	0.08
19/12/2012	0.01	0.02	0.00	0.04	-0.01	0.08
20/12/2012	0.02	0.05	0.00	0.03	-0.01	0.09
21/12/2012	0.03	0.02	0.01	0.00	-0.01	0.10
22/12/2012	0.03	0.02	0.01	0.00	-0.01	0.12
23/12/2012	0.03	0.02	0.01	0.00	-0.01	0.15
24/12/2012	0.05	0.05	0.01	-0.01	-0.01	0.19
25/12/2012	0.05	0.05	0.01	-0.01	-0.01	0.24
26/12/2012	0.05	0.05	0.01	-0.01	-0.01	0.32
27/12/2012	0.05	0.02	0.01	-0.03	-0.01	0.42
28/12/2012	0.05	0.04	0.01	-0.03	-0.02	0.52
29/12/2012	0.05	0.04	0.01	-0.03	-0.02	0.68
30/12/2012	0.05	0.04	0.01	-0.03	-0.02	0.87

31/12/2012	0.06	0.06	0.01	-0.03	-0.02	0.92
1/1/2013	0.06	0.06	0.01	-0.03	-0.02	0.69
2/1/2013	0.04	0.04	0.02	-0.02	-0.02	0.47
3/1/2013	0.05	0.02	0.04	-0.02	-0.01	0.28
4/1/2013	0.03	0.00	0.02	-0.01	0.00	0.17
5/1/2013	0.03	0.00	0.02	-0.01	0.00	0.10
6/1/2013	0.03	0.00	0.02	-0.01	0.00	0.06
7/1/2013	0.03	-0.01	0.02	-0.02	0.01	0.04
8/1/2013	0.01	-0.01	0.01	-0.04	0.05	0.03
9/1/2013	-0.02	-0.03	-0.01	-0.07	0.06	0.03
10/1/2013	-0.03	0.02	0.01	-0.07	0.03	0.05
11/1/2013	-0.04	0.02	0.04	-0.08	0.02	0.08
12/1/2013	-0.04	0.02	0.04	-0.08	0.02	0.12
13/1/2013	-0.04	0.02	0.04	-0.08	0.02	0.20
14/1/2013	-0.04	0.01	0.04	-0.10	0.02	0.31
15/1/2013	-0.04	0.01	0.06	-0.10	0.00	0.46
16/1/2013	-0.03	0.02	0.04	-0.06	0.00	0.63
17/1/2013	-0.02	0.06	0.00	-0.05	0.00	0.85
18/1/2013	-0.03	0.05	0.01	-0.05	0.01	0.95
19/1/2013	-0.03	0.05	0.01	-0.05	0.01	0.73
20/1/2013	-0.03	0.05	0.01	-0.05	0.01	0.48
21/1/2013	-0.02	0.07	0.01	-0.06	0.02	0.26
22/1/2013	-0.02	0.09	0.02	-0.07	0.00	0.09
23/1/2013	-0.01	0.09	0.03	-0.08	0.00	0.05
24/1/2013	0.00	0.12	0.03	-0.08	0.01	0.03
25/1/2013	-0.01	0.13	0.04	-0.08	0.01	0.01
26/1/2013	-0.01	0.13	0.04	-0.08	0.01	0.01
27/1/2013	-0.01	0.13	0.04	-0.08	0.01	0.01
28/1/2013	0.00	0.12	0.05	-0.07	-0.03	0.00
29/1/2013	0.00	0.13	0.05	-0.06	-0.05	0.01
30/1/2013	0.00	0.12	0.05	-0.06	-0.05	0.02
31/1/2013	-0.01	0.12	0.04	-0.07	-0.03	0.03
1/2/2013	-0.01	0.13	0.04	-0.08	-0.01	0.06
2/2/2013	-0.01	0.13	0.04	-0.08	-0.01	0.05
3/2/2013	-0.01	0.13	0.04	-0.08	-0.01	0.05
4/2/2013	-0.01	0.10	0.04	-0.09	-0.02	0.04
5/2/2013	-0.02	0.11	0.05	-0.09	-0.04	0.06
6/2/2013	-0.02	0.10	0.06	-0.11	-0.05	0.12
7/2/2013	-0.02	0.09	0.06	-0.11	-0.06	0.24
8/2/2013	-0.03	0.09	0.06	-0.12	-0.04	0.49
9/2/2013	-0.03	0.09	0.06	-0.12	-0.04	0.84

10/2/2013	-0.03	0.09	0.06	-0.12	-0.04	0.76
12/2/2013	-0.04	0.08	0.12	-0.15	-0.03	0.27
13/2/2013	-0.06	0.06	0.13	-0.15	-0.04	0.11
14/2/2013	-0.05	0.07	0.10	-0.14	-0.04	0.17
15/2/2013	-0.05	0.08	0.11	-0.12	-0.04	0.29
16/2/2013	-0.05	0.08	0.11	-0.12	-0.04	-
17/2/2013	-0.05	0.08	0.11	-0.12	-0.04	-

Table 4.13: Longitudinal Analysis Coop Bank Stock

COOP BANK											
2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACKS				2012 BELLA VISTA ATTACK			
DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
13/05/2010	-0.01	-0.01	1.42692E-13	23/09/2011	0	0	0.002092079	14/04/2012	0	0	2.28247E-21
14/05/2010	0	-0.01	1.09792E-13	24/09/2011	0	0	0.002884024	15/04/2012	0	0	9.56329E-22
15/05/2010	0	-0.01	7.18525E-14	25/09/2011	0	0	0.002875796	16/04/2012	0	0	3.67388E-22
16/05/2010	0	-0.01	4.57533E-14	26/09/2011	0.01	0.01	0.00286729	17/04/2012	0	0	1.27478E-22
17/05/2010	0	-0.01	2.82536E-14	27/09/2011	0.01	0.02	0.00285849	18/04/2012	0	0.01	3.92013E-23
18/05/2010	0	-0.01	1.68543E-14	28/09/2011	0	0.01	0.003119124	19/04/2012	0	0.01	1.9809E-23
19/05/2010	0	-0.01	9.66783E-15	29/09/2011	0	0.01	0.003401131	20/04/2012	0.01	0.02	9.17988E-24
20/05/2010	0.02	0.01	5.30321E-15	30/09/2011	0	0.01	0.003706028	21/04/2012	0	0.02	3.84089E-24
21/05/2010	0	0.01	2.76344E-15	1/10/2011	0	0.01	0.004035424	22/04/2012	0	0.02	2.72877E-24
22/05/2010	0	0.01	1.96936E-15	2/10/2011	0.01	0.02	0.004391014	23/04/2012	0.02	0.04	1.81368E-24
23/05/2010	-0.02	-0.01	1.35553E-15	3/10/2011	0.01	0.04	0.00477459	24/04/2012	0.02	0.06	1.11525E-24
24/05/2010	0	-0.01	8.96677E-16	4/10/2011	0.02	0.05	0.006032469	25/04/2012	0.01	0.07	1.95515E-24
25/05/2010	0.03	0.02	3.72356E-16	5/10/2011	0.01	0.06	0.007581744	26/04/2012	0	0.07	6.71884E-24
26/05/2010	0.02	0.04	1.39436E-16	6/10/2011	0.02	0.08	0.010693011	27/04/2012	-0.02	0.05	2.74661E-23
27/05/2010	0	0.04	9.30606E-17	7/10/2011	0	0.08	0.015702854	28/04/2012	0	0.05	1.11224E-22
28/05/2010	0	0.04	8.839E-17	8/10/2011	0	0.08	0.024826438	29/04/2012	0	0.05	2.81925E-22
29/05/2010	0	0.04	8.13199E-17	9/10/2011	0.02	0.1	0.038654096	30/04/2012	0.01	0.06	7.07947E-22
30/05/2010	0.01	0.05	7.21302E-17	10/10/2011	-0.01	0.09	0.059198601	1/5/2012	0	0.06	1.7606E-21
31/05/2010	0	0.05	6.13308E-17	11/10/2011	0.01	0.1	0.095760279	2/5/2012	0	0.06	5.77637E-21

1/6/2010	0.01	0.06	6.13757E-17	12/10/2011	0	0.09	0.146729916	3/5/2012	0	0.06	1.878E-20
2/6/2010	0	0.06	5.90557E-17	13/10/2011	0	0.1	0.219681503	4/5/2012	0.01	0.08	6.04936E-20
3/6/2010	-0.01	0.05	6.70461E-17	14/10/2011	0	0.1	0.331639663	5/5/2012	0	0.08	2.33317E-19
4/6/2010	0	0.05	7.34275E-17	15/10/2011	0	0.1	0.482782937	6/5/2012	0	0.08	9.81856E-19
5/6/2010	0	0.05	6.14072E-17	16/10/2011	-0.01	0.09	0.332531026	7/5/2012	0	0.08	4.08334E-18
6/6/2010	-0.01	0.05	4.77225E-17	17/10/2011	-0.01	0.08	0.145884378	8/5/2012	0	0.08	1.67775E-17
7/6/2010	0	0.05	4.38791E-17	18/10/2011	-0.05	0.03	0.033812603	9/5/2012	0	0.08	6.80852E-17
8/6/2010	0	0.05	2.84181E-17	19/10/2011	0	0.03	0.002229571	10/5/2012	0	0.08	2.72808E-16
9/6/2010	0	0.06	1.60117E-17	20/10/2011	-0.05	-0.02	0.000645345	11/5/2012	0	0.09	1.07894E-15
10/6/2010	0.01	0.06	1.04718E-17	21/10/2011	0	-0.02	0.000133561	12/5/2012	0	0.09	4.27473E-15
11/6/2010	0	0.06	3.99482E-18	22/10/2011	0	-0.02	0.000233521	13/5/2012	0	0.09	1.67044E-14
12/6/2010	0	0.06	1.66324E-18	23/10/2011	-0.03	-0.05	0.000402672	14/5/2012	0	0.09	6.43576E-14
13/6/2010	0	0.06	4.86167E-19	24/10/2011	0.01	-0.04	0.000684537	15/5/2012	0.01	0.09	2.44362E-13
14/6/2010	0.02	0.08	8.20995E-20	25/10/2011	-0.02	-0.06	0.001287776	16/5/2012	0	0.1	9.04473E-13
15/6/2010	0.01	0.08	5.35655E-21	26/10/2011	0.04	-0.02	0.002543717	17/5/2012	0.01	0.11	3.15519E-12
16/6/2010	0.06	0.14	1.49455E-22	27/10/2011	0.01	-0.01	0.0033846	18/5/2012	0	0.11	1.08012E-11
17/6/2010	0.04	0.18	6.38849E-25	28/10/2011	0	-0.01	0.006051529	19/5/2012	0	0.11	3.17606E-11
18/6/2010	0	0.18	3.67986E-25	29/10/2011	0	-0.01	0.00851478	20/5/2012	0	0.11	8.99229E-11
19/6/2010	0	0.18	3.01649E-24	30/10/2011	0.01	0	0.011845694	21/5/2012	0	0.11	2.43469E-10
20/6/2010	0.02	0.21	2.38867E-23	31/10/2011	-0.02	-0.03	0.016291245	22/5/2012	0	0.12	6.24325E-10
21/6/2010	0.03	0.23	2.64917E-22	1/11/2011	0.05	0.02	0.02214538	23/5/2012	-0.01	0.11	1.1097E-09
22/6/2010	0.01	0.24	3.52681E-21	2/11/2011	-0.03	0	0.041465437	24/5/2012	-0.01	0.1	1.59301E-09
23/6/2010	0	0.24	3.27186E-20	3/11/2011	0	-0.01	0.006243286	25/5/2012	-0.01	0.09	2.6518E-09
24/6/2010	0	0.24	1.78554E-19	4/11/2011	0	-0.01	0.009501699	26/5/2012	0	0.09	5.34155E-09
25/6/2010	0	0.24	8.19183E-19	5/11/2011	0	-0.01	0.014222682	27/5/2012	0	0.09	1.32856E-08

26/6/2010	0	0.24	2.89463E-18	6/11/2011	0	-0.01	0.020930553	28/5/2012	0	0.08	2.96913E-08
27/6/2010	-0.02	0.22	6.5826E-18	7/11/2011	0.03	0.02	0.030270766	29/5/2012	-0.02	0.06	8.22291E-08
28/6/2010	-0.03	0.19	6.06768E-18	8/11/2011	-0.03	0	0.04300642	30/5/2012	-0.04	0.03	2.10418E-07
29/6/2010	0.01	0.2	2.95053E-17	9/11/2011	0.01	0.01	0.002366969	31/5/2012	-0.01	0.02	6.50495E-07
30/6/2010	0.01	0.2	6.13792E-16	10/11/2011	-0.02	-0.01	0.002204078	1/6/2012	0	0.02	1.45013E-06
1/7/2010	0	0.2	1.23238E-14	11/11/2011	0	-0.01	0.000459607	2/6/2012	0	0.02	2.05852E-06
2/7/2010	0	0.2	2.14125E-13	12/11/2011	0	-0.01	0.000964446	3/6/2012	0	0.02	2.78848E-06
3/7/2010	0	0.2	3.55836E-12	13/11/2011	-0.02	-0.03	0.001967353	4/6/2012	0	0.02	3.53829E-06
4/7/2010	0	0.2	5.6276E-11	14/11/2011	0	-0.02	0.003895855	5/6/2012	0.01	0.03	4.06758E-06
5/7/2010	0.01	0.21	8.41506E-10	15/11/2011	0	-0.02	0.009359712	6/6/2012	0.02	0.04	3.95823E-06
6/7/2010	0	0.21	1.17902E-08	16/11/2011	0.01	0	0.021555367	7/6/2012	0	0.04	2.7553E-06
7/7/2010	-0.01	0.2	8.38352E-08	17/11/2011	0	0	0.039801006	8/6/2012	0	0.04	7.30433E-06
8/7/2010	-0.02	0.18	2.94552E-07	18/11/2011	0	0	0.039070375	9/6/2012	0	0.04	6.50495E-07
9/7/2010	0	0.18	6.69722E-07	19/11/2011	0	0	0.037793409	10/6/2012	0	0.04	1.45013E-06
10/7/2010	0	0.18	1.52393E-05	20/11/2011	0	0	0.035241998	11/6/2012	0.01	0.06	2.05852E-06
11/7/2010	-0.02	0.15	0.00019988	21/11/2011	0	-0.01	0.028834443	12/6/2012	0.02	0.07	2.78848E-06
12/7/2010	0.01	0.17	0.009642803	22/11/2011	0	-0.01	0.06480586	13/6/2012	0	0.08	3.454545E-06

Table 4.14: Longitudinal Analysis EABL Stock

EABL																							
1998 BOMBLAST				2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACK				2012 BELLA VISTA ATTACK				2013 ALSHABAAB ATTACKS			
DATE	MAAR	CAR	T-VALUE	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
7/7/1998	-0	-0	2.11E-13	10/30/2002	-0.01	-0.011	7.89E-05	14/05/2010	-0.01	-0.01	0.00567	25/10/2011	-0.01	-0.01	5.92E-29	14/04/2012	0	0	1.62E-15	18/12/2012	-0	0	2.9E-05
7/8/1998	0.006	0.002	1.64E-13	10/31/2002	-0.03	-0.038	7.79E-05	15/05/2010	0	-0.01	0.00528	26/10/2011	-2E-04	-0.01	5.13E-30	15/04/2012	0	0	1.14E-15	19/12/2012	-0.01	-0.01	1.5E-05
7/9/1998	9E-04	0.003	9.78E-14	11/1/2002	-0	-0.039	8.45E-05	16/05/2010	0	-0.01	0.00335	27/10/2011	-0.002	-0.01	3.08E-31	16/04/2012	0	5E-04	7.83E-16	20/12/2012	-0	-0.01	7.2E-06
7/10/1998	0	0.003	7.98E-14	11/2/2002	0	-0.039	0.000111	17/05/2010	-0.01	-0.025	0.00205	28/10/2011	0.0033	-0.01	1.01E-32	17/04/2012	-0.01	-0.01	5.24E-16	21/12/2012	0.006	-0	6.9E-06
7/11/1998	0	0.003	6.69E-14	11/3/2002	0	-0.039	0.000148	18/05/2010	0.01	-0.015	0.00121	29/10/2011	0	-0.01	1.4E-34	18/04/2012	0.01	-0	3.4E-16	22/12/2012	0	-0	6.6E-06
7/12/1998	0.019	0.022	5.52E-14	11/4/2002	-0.08	-0.124	0.000196	19/05/2010	0.012	-0.003	0.00017	30/10/2011	0	-0.01	4.6E-37	19/04/2012	0	7E-04	2.09E-16	23/12/2012	0	-0	6.4E-06
7/13/1998	0.005	0.027	4.48E-14	11/5/2002	0.09	-0.029	0.000258	20/05/2010	-0	-0.003	4.9E-05	31/10/2011	-0.015	-0.02	1.26E-40	20/04/2012	0.01	0.012	1.26E-16	24/12/2012	-0	-0.01	6.2E-06
7/14/1998	-0.01	0.018	8.06E-14	11/6/2002	-0.02	-0.049	0.000473	21/05/2010	-0	-0.005	3.9E-05	1/11/2011	-1.01	-1.03	1.27E-46	21/04/2012	0	0.012	7.28E-17	25/12/2012	0	-0.01	5.9E-06
7/15/1998	0.021	0.039	1.67E-13	11/7/2002	0.02	-0.027	0.00058	22/05/2010	0	-0.005	3E-05	2/11/2011	0.0014	-1.03	8.57E-63	22/04/2012	0	0.012	4.18E-17	26/12/2012	0	-0.01	5.7E-06
7/16/1998	0.007	0.046	2.61E-13	11/8/2002	-0.03	-0.061	0.000796	23/05/2010	0	-0.005	2E-05	3/11/2011	0.0114	-1.02	3.93E-62	23/04/2012	0.01	0.02	2.28E-17	27/12/2012	0.002	-0	5.4E-06
7/17/1998	0	0.046	6.64E-13	11/9/2002	0	-0.061	0.000953	24/05/2010	0.002	-0.003	1.3E-05	4/11/2011	-6E-04	-1.02	1.63E-61	24/04/2012	0	0.025	1.17E-17	28/12/2012	0.003	4E-04	5.2E-06
7/18/1998	0	0.046	1.78E-12	11/10/2002	0	-0.061	0.001376	25/05/2010	5E-04	-0.002	8.5E-06	5/11/2011	0	-1.02	8.29E-61	25/04/2012	-0.01	0.011	5.74E-18	29/12/2012	0	4E-04	5E-06
7/19/1998	0.003	0.049	4.72E-12	11/11/2002	-0.01	-0.07	0.00197	26/05/2010	0.008	0.0054	6.4E-06	6/11/2011	0	-1.02	3.61E-60	26/04/2012	-0.02	-0.01	2.65E-18	30/12/2012	0	4E-04	4.8E-06
7/20/1998	-0	0.045	1.24E-11	11/12/2002	-0.02	-0.088	0.002795	27/05/2010	0.018	0.0239	5.1E-06	7/11/2011	0.0018	-1.02	1.33E-59	27/04/2012	0.02	0.013	1.05E-18	31/12/2012	0.003	0.003	4.6E-06
7/21/1998	0.003	0.048	3.26E-11	11/13/2002	-0	-0.092	0.004091	28/05/2010	-0.01	0.0111	7.2E-06	8/11/2011	0.0001	-1.02	3.96E-59	28/04/2012	0	0.013	3.36E-19	1/1/2013	0	0.003	4.3E-06
7/22/1998	0.01	0.059	8.36E-11	11/14/2002	-0.02	-0.113	0.006342	29/05/2010	0	0.0111	1.4E-05	9/11/2011	-0.001	-1.02	9.76E-59	29/04/2012	0	0.013	1.01E-19	2/1/2013	3E-04	0.004	4.2E-06
7/23/1998	-0.02	0.038	2.15E-10	11/15/2002	0.01	-0.105	0.009817	30/05/2010	0	0.0111	2.5E-05	10/11/2011	0.0007	-1.02	1.73E-58	30/04/2012	-0.01	0.001	2.53E-20	3/1/2013	-0.01	-0	4E-06
7/24/1998	0	0.038	5.38E-10	11/16/2002	0	-0.105	0.015977	31/05/2010	6E-04	0.0117	4.4E-05	11/11/2011	0.039	-0.98	1.8E-58	1/5/2012	0	0.001	4.94E-21	4/1/2013	0.013	0.012	3.8E-06

7/25/1998	0	0.038	1.25E-09	11/17/2002	0	-0.105	0.025039	1/6/2010	0	0.0117	7.9E-05	12/11/2011	0	-0.98	9.74E-59	2/5/2012	-0.01	-0.01	6.35E-22	5/1/2013	0	0.012	3.5E-06
7/26/1998	0.015	0.053	2.89E-09	11/18/2002	-0.08	-0.186	0.03862	2/6/2010	9E-04	0.0125	0.00014	13/11/2011	0	-0.98	2.99E-58	3/5/2012	0.02	0.012	5.02E-23	6/1/2013	0	0.012	3.4E-06
7/27/1998	-0.02	0.033	6.6E-09	11/19/2002	0.02	-0.164	0.058566	3/6/2010	0.001	0.0138	0.00025	14/11/2011	0.0142	-0.97	6.35E-58	4/5/2012	-0	0.008	1.79E-24	7/1/2013	-0.01	0.002	3.2E-06
7/28/1998	0.019	0.052	1.62E-08	11/20/2002	0.05	-0.116	0.105548	4/6/2010	0.003	0.0164	0.00044	15/11/2011	0.0235	-0.94	7.95E-58	5/5/2012	0	0.008	2.43E-26	8/1/2013	0.015	0.017	3.1E-06
7/29/1998	0.014	0.065	3.4E-08	11/21/2002	0	-0.112	0.181767	5/6/2010	0	0.0164	0.0008	16/11/2011	0.0021	-0.94	1.54E-57	6/5/2012	0	0.008	3.75E-29	9/1/2013	0.014	0.032	2.8E-06
7/30/1998	-0.01	0.06	8.21E-08	11/22/2002	0.01	-0.098	0.27098	6/6/2010	0	0.0164	0.0015	17/11/2011	0.0088	-0.93	9.89E-57	7/5/2012	0.98	0.99	2.83E-34	10/1/2013	0.004	0.035	2.7E-06
7/31/1998	0	0.06	1.85E-07	11/23/2002	0	-0.098	0.386234	7/6/2010	0.006	0.0229	0.00279	18/11/2011	0.0267	-0.91	5.71E-56	8/5/2012	0	0.994	2.14E-77	11/1/2013	0.004	0.039	2.6E-06
8/1/1998	0	0.06	4.27E-07	11/24/2002	0	-0.098	0.488896	8/6/2010	-0	0.0227	0.00511	19/11/2011	0	-0.91	4.6E-55	9/5/2012	0	0.999	1.48E-75	12/1/2013	0	0.039	2.5E-06
8/2/1998	-0	0.057	9.7E-07	11/25/2002	0.01	-0.088	0.35059	9/6/2010	-0.01	0.0162	0.0097	20/11/2011	0	-0.91	1.28E-53	10/5/2012	0	1	1.49E-73	13/1/2013	0	0.039	2.4E-06
8/3/1998	-0.01	0.052	2.17E-06	11/26/2002	0.01	-0.074	0.213678	10/6/2010	-0.01	0.0071	0.01835	21/11/2011	0.0015	-0.9	3.43E-52	11/5/2012	0	1.004	1.92E-71	14/1/2013	0.006	0.045	2.3E-06
8/4/1998	0.002	0.053	4.85E-06	11/27/2002	0.01	-0.067	0.112172	11/6/2010	0.007	0.0139	0.03309	22/11/2011	-7E-04	-0.91	8.85E-51	12/5/2012	0	1.004	2.52E-69	15/1/2013	-0	0.044	2.2E-06
8/5/1998	0.011	0.064	1.09E-05	11/28/2002	-0.01	-0.073	0.05283	12/6/2010	0	0.0139	0.04591	23/11/2011	0.0042	-0.9	2.32E-49	13/5/2012	0	1.004	3.48E-67	16/1/2013	-0.01	0.03	2.1E-06
8/6/1998	-0.01	0.058	2.41E-05	11/29/2002	0.03	-0.043	0.021168	13/6/2010	0	0.0139	0.07693	24/11/2011	-0.013	-0.91	5.67E-48	14/5/2012	-0	1.002	4.73E-65	17/1/2013	-0.01	0.022	2E-06
8/7/1998	**0**	0.058	4.87E-05	11/30/2002	0	-0.043	0.005005	14/6/2010	-0	0.0102	0.12659	25/11/2011	-0.004	-0.92	1.57E-46	15/5/2012	0	1.004	6.34E-63	18/1/2013	-0.01	0.012	1.8E-06
8/8/1998	0	0.058	0.000102	12/1/2002	0	-0.043	0.001817	15/6/2010	0.001	0.0113	0.20393	26/11/2011	0	-0.92	2.14E-45	16/5/2012	-0.02	0.983	8.16E-61	19/1/2013	0	0.012	1.6E-06
8/9/1998	0.021	0.079	0.000208	12/2/2002	0	-0.039	0.000511	16/6/2010	-0.01	0.0014	0.28868	27/11/2011	0	-0.92	1.88E-44	17/5/2012	-0	0.981	1.06E-58	20/1/2013	0	0.012	1.4E-06
8/10/1998	-0.02	0.058	0.000414	12/3/2002	0.03	-0.013	9.85E-05	17/6/2010	-0	0.001	0.4085	28/11/2011	0.0089	-0.91	1.21E-43	18/5/2012	-0	0.979	2.94E-57	21/1/2013	0.004	0.017	1.1E-06
8/11/1998	-0.01	0.052	0.000449	12/4/2002	0.03	0.013	1.39E-05	18/6/2010	0.006	0.0073	0.42607	29/11/2011	0.021	-0.89	4.84E-43	19/5/2012	0	0.979	5.04E-56	22/1/2013	-0	0.015	9E-07
8/12/1998	-0.01	0.041	0.000684	12/5/2002	0.01	0.028	6.61E-06	19/6/2010	0	0.0073	0.43849	30/11/2011	-0.01	-0.9	2.68E-42	20/5/2012	0	0.979	3.52E-55	23/1/2013	0.014	0.029	7E-07
8/13/1998	-0.03	0.015	0.000999	12/6/2002	0	0.028	9.13E-06	20/6/2010	0	0.0073	0.468	1/12/2011	0.0044	-0.89	6.89E-41	21/5/2012	0	0.983	9.67E-55	24/1/2013	0.002	0.031	5.2E-07
8/14/1998	0	0.015	0.001684	12/7/2002	0	0.028	1.81E-05	21/6/2010	0.005	0.0123	0.3707	2/12/2011	0.0071	-0.89	5.93E-40	22/5/2012	0.02	1.004	3.58E-55	25/1/2013	0.005	0.036	3.8E-07
8/15/1998	0	0.015	0.003018	12/8/2002	0	0.028	3.54E-05	22/6/2010	-0.01	0.0057	0.27501	3/12/2011	0	-0.89	5.31E-39	23/5/2012	0	1.009	1.77E-56	26/1/2013	0	0.036	2.6E-07
8/16/1998	0.022	0.013	0.005296	12/9/2002	0.01	0.038	6.82E-05	23/6/2010	-0	0.0042	0.12323	4/12/2011	0	-0.89	7.12E-38	24/5/2012	-0	1.009	2.94E-54	27/1/2013	0	0.036	1.6E-07

8/17/1998	-0.02	0.012	0.002801	12/10/2002	-0	0.036	0.000129	24/6/2010	-0.01	-0.001	0.07607	5/12/2011	0.0031	-0.88	6.15E-37	25/5/2012	-0.01	1.002	8.76E-52	28/1/2013	0.008	0.043	8.6E-08
8/18/1998	0.009	0.007	0.005686	12/11/2002	0.03	0.063	0.000277	25/6/2010	0.004	0.003	0.05044	6/12/2011	0.0084	-0.88	2.36E-36	26/5/2012	0	1.002	2.53E-49	29/1/2013	0.003	0.046	3.7E-08
8/19/1998	0.015	0.003	0.004801	12/12/2002	0	0.063	0.000569	26/6/2010	0	0.003	0.05572	7/12/2011	0.0076	-0.87	3.68E-36	27/5/2012	0	1.002	2.08E-47	30/1/2013	0.002	0.048	1.2E-08
8/20/1998	-0.03	0.004	0.001767	12/13/2002	-0	0.058	0.00127	27/6/2010	0	0.003	0.04073	8/12/2011	0.0082	-0.86	6.64E-36	28/5/2012	0.01	1.009	1.36E-45	31/1/2013	-0	0.045	1.9E-09
8/21/1998	0	0.004	0.003418	12/14/2002	0	0.058	0.00276	28/6/2010	0.007	0.0095	0.02863	9/12/2011	0.0171	-0.84	1.69E-35	29/5/2012	0	1.012	6.2E-44	1/2/2013	1.007	1.051	5.2E-11
8/22/1998	0	0.004	0.004388	12/15/2002	0	0.058	0.005936	29/6/2010	-0	0.0057	0.01917	10/12/2011	0	-0.84	1.93E-34	30/5/2012	0.01	1.017	1.86E-41	2/2/2013	0	1.051	5.1E-26
8/23/1998	0.009	0.006	0.005605	12/16/2002	0	0.061	0.012456	30/6/2010	-0	0.0046	0.00163	11/12/2011	0	-0.84	4.64E-32	31/5/2012	-0	1.013	6.55E-39	3/2/2013	0	1.051	3.6E-24
8/24/1998	0.009	0.013	0.004037	12/17/2002	0.01	0.067	0.025498	1/7/2010	-0	-2E-04	0.00012	12/12/2011	0	-0.84	1.08E-29	1/6/2012	0	1.013	1.38E-36	4/2/2013	0.003	1.055	2.5E-22
8/25/1998	0.017	0.004	0.005237	12/18/2002	-0.04	0.023	0.049623	2/7/2010	-0.01	-0.005	7.3E-07	13/12/2011	-0.006	-0.85	2.43E-27	2/6/2012	0	1.013	4.64E-34	5/2/2013	0.004	1.059	1.6E-20
8/26/1998	-0.01	0.006	0.000836	12/19/2002	0	0.023	0.059516	3/7/2010	0	-0.005	4.3E-08	14/12/2011	0.0095	-0.84	5.27E-25	3/6/2012	0	1.013	1.51E-31	6/2/2013	-0	1.054	8.7E-19
8/27/1998	8E-04	0.007	0.002041	12/20/2002	-0.01	0.008	0.120129	4/7/2010	0	-0.005	2.6E-07	15/12/2011	0.0014	-0.84	8.86E-23	4/6/2012	-0	1.012	4.76E-29	7/2/2013	-0.01	1.046	3.3E-17
8/28/1998	0	0.007	0.003036	12/21/2002	0	0.008	0.252492	5/7/2010	-0	-0.008	1.4E-06	16/12/2011	-0.002	-0.84	1.49E-20	5/6/2012	0.01	1.017	1.44E-26	8/2/2013	-0.01	1.035	1.4E-15
8/29/1998	0	0.007	0.004758	12/22/2002	0	0.008	0.372446	6/7/2010	0.003	-0.005	7.7E-06	17/12/2011	0	-0.84	1.99E-18	6/6/2012	0	1.021	4.29E-24	9/2/2013	0	1.035	8.2E-14
8/30/1998	-0.02	0.008	0.007347	12/23/2002	-0.02	-0.016	0.47491	7/7/2010	4E-04	-0.004	2.3E-05	18/12/2011	0	-0.84	3.13E-16	7/6/2012	-0.01	1.016	8.15E-22	10/2/2013	0	1.035	6.6E-12
8/31/1998	0.02	0.011	0.01877	12/24/2002	0.02	0.001	0.29557	8/7/2010	-0	-0.008	0.00011	19/12/2011	0.0036	-0.84	4.55E-14	8/6/2012	-0	1.011	4.39E-20	12/2/2013	0.006	1.041	5E-10
9/1/1998	0.015	0.03	0.002138	12/25/2002	0	0.001	1.06E-18	9/7/2010	0.002	-0.006	0.00042	20/12/2011	-0.003	-0.84	5.98E-12	9/6/2012	0	1.011	7.63E-18	13/2/2013	7E-04	1.042	3.5E-08
9/2/1998	-0.01	0.018	0.007738	12/26/2002	0	0.001	4.28E-15	10/7/2010	0	-0.006	0.00134	21/12/2011	-0.011	-0.85	2.59E-10	10/6/2012	0	1.011	2.43E-15	14/2/2013	-0.01	1.029	1.8E-06
9/3/1998	-0.01	0.013	0.015104	12/27/2002	0	0.001	1.58E-11	11/7/2010	0	-0.006	0.00665	22/12/2011	-0.003	-0.85	2.67E-10	11/6/2012	0	1.014	7.22E-13	15/2/2013	-0.03	0.995	6.2E-05
9/4/1998	0	0.013	0.04541	12/28/2002	0	0.001	5.24E-08	12/7/2010	0.004	-0.003	0.02829	23/12/2011	0.0012	-0.85	1.06E-07	12/6/2012	-0	1.012	1.98E-10	16/2/2013	0	0.995	1.4E-15
9/5/1998	0	0.013	0.167213	12/29/2002	0	0.001	0.000155	13/7/2010	-0	-0.004	0.05073	24/12/2011	0	-0.85	1	13/6/2012	0	1.013	3.81E-08	17/2/2013	0	0.995	8.2E-14

Table 4.15: Longitudinal Analysis KPLC Stock

KPLC															
1998 BOMBLAST				2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACKS			
DATE	MAAR	CAR	T-VALUE	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
7/7/1998	0.004182	0.004182	5.96141E-16	10/30/2002	0.011981	0.011981	5.29715E-22	14/05/2010	-0.003110604	0	1.58308E-12	23/09/2011	0	0	1.69312E-20
7/8/1998	-0.00251	0.001671	3.95412E-16	10/31/2002	-0.03777	-0.02579	1.87988E-22	15/05/2010	0	0	9.77663E-13	24/09/2011	0	0	4.034E-21
7/9/1998	0.000865	0.002536	2.96506E-16	11/1/2002	-0.00186	-0.02766	6.65448E-23	16/05/2010	0	0	7.77758E-13	25/09/2011	0	0	1.61151E-21
7/10/1998	0	0.002536	1.97483E-16	11/2/2002	0	-0.02766	1.39895E-23	17/05/2010	0.018114316	0.018114316	6.09803E-13	26/09/2011	-0.03	-0.02	5.84067E-22
7/11/1998	0	0.002536	1.31519E-16	11/3/2002	0	-0.02766	2.31059E-24	18/05/2010	-0.007176313	0.010938003	4.70524E-13	27/09/2011	-0.03	-0.05	8.2377E-23
7/12/1998	-0.0815	-0.07897	8.45047E-17	11/4/2002	0.417468	0.389812	2.87666E-25	19/05/2010	-0.006311223	0.004626779	3.44631E-14	28/09/2011	0	-0.05	8.76864E-23
7/13/1998	0.022901	-0.05607	5.21184E-17	11/5/2002	-0.0132	0.376617	2.47514E-26	20/05/2010	-0.005518071	-0.000891292	5.66296E-15	29/09/2011	-0.01	-0.06	2.85044E-22
7/14/1998	0.017859	-0.03821	5.92761E-20	11/6/2002	0.075916	0.452533	8.83371E-26	21/05/2010	-0.001519427	-0.002410719	1.99655E-15	30/09/2011	0	-0.06	9.19361E-22
7/15/1998	0.025036	-0.01317	8.25966E-23	11/7/2002	-0.02173	0.430802	2.97278E-25	22/05/2010	0	-0.002410719	1.3402E-15	1/10/2011	0	-0.06	3.37281E-21
7/16/1998	-0.00167	-0.01484	1.29551E-25	11/8/2002	0.087935	0.518737	1.24744E-24	23/05/2010	0	-0.002410719	1.04029E-15	2/10/2011	-0.01	-0.07	1.22625E-20
7/17/1998	0	-0.01484	1.32075E-27	11/9/2002	0	0.518737	4.93705E-24	24/05/2010	-0.0037928	-0.0062035	7.83715E-16	3/10/2011	0	-0.07	4.41747E-20

									05	24					
7/18/1998	0	-0.01484	1.71876E-30	11/10/2002	0	0.518737	2.19483E-23	25/05/2010	0.000539782	-0.005663742	5.70713E-16	4/10/2011	0	-0.06	1.61575E-19
7/19/1998	0.063991	0.049147	4.93884E-35	11/11/2002	0.080883	0.59962	9.66276E-23	26/05/2010	0.002669043	-0.002994699	6.2562E-16	5/10/2011	-0.01	-0.07	5.71802E-19
7/20/1998	0.010227	0.059374	4.29186E-45	11/12/2002	0.088803	0.688422	4.21195E-22	27/05/2010	-0.007365116	-0.010359814	6.35464E-16	6/10/2011	0.01	-0.07	2.00398E-18
7/21/1998	0.010021	0.069395	2.04748E-45	11/13/2002	0.096084	0.784506	1.71967E-21	28/05/2010	0.007723405	-0.002636361	4.5459E-16	7/10/2011	0	-0.07	6.60193E-18
7/22/1998	0.000604	0.069999	8.94948E-45	11/14/2002	-0.03175	0.75276	5.40041E-21	29/05/2010	0	-0.002636361	7.18318E-16	8/10/2011	0	-0.07	2.32833E-17
7/23/1998	0.005713	0.075712	1.16347E-43	11/15/2002	-0.07926	0.673498	9.706E-21	30/05/2010	0	-0.002636361	4.59192E-16	9/10/2011	-0.01	-0.08	8.12676E-17
7/24/1998	0	0.075712	1.53335E-42	11/16/2002	0	0.673498	1.94234E-20	31/05/2010	-9.1356E-05	-0.002727766	2.75187E-16	10/10/2011	0	-0.07	2.80669E-16
7/25/1998	0	0.075712	1.99335E-41	11/17/2002	0	0.673498	5.66777E-20	1/6/2010	0	-0.002727766	1.52651E-16	11/10/2011	0	-0.08	9.58908E-16
7/26/1998	-0.01235	0.063365	2.56123E-40	11/18/2002	-0.09624	0.577259	1.58801E-19	2/6/2010	-0.004133543	-0.006861308	7.82909E-17	12/10/2011	0	-0.08	2.99387E-15
7/27/1998	0.012589	0.075953	3.25134E-39	11/19/2002	-0.08492	0.492338	4.24593E-19	3/6/2010	0.000689082	-0.006172226	3.58496E-17	13/10/2011	0.01	-0.07	9.20661E-15
7/28/1998	-0.00381	0.072141	2.56029E-38	11/20/2002	-0.08155	0.410785	1.61727E-18	4/6/2010	-0.003022126	-0.009194352	2.96103E-17	14/10/2011	0	-0.07	2.78617E-14
7/29/1998	-0.00445	0.067691	3.20962E-37	11/21/2002	-0.05168	0.359102	6.90285E-18	5/6/2010	0	-0.009194352	2.03475E-17	15/10/2011	0	-0.07	9.10171E-14
7/30/1998	-0.00531	0.062381	4.21948E-36	11/22/2002	-0.00872	0.350385	2.71796E-17	6/6/2010	0	-0.009194352	2.12256E-17	16/10/2011	0	-0.07	2.93698E-13

7/31/1998	0	0.062381	4.73461E-35	11/23/2002	0	0.350385	9.21437E-17	7/6/2010	0.005860863	-0.003333489	2.09758E-17	17/10/2011	0	-0.08	9.35837E-13
8/1/1998	0	0.062381	3.25162E-34	11/24/2002	0	0.350385	2.99702E-16	8/6/2010	-0.000215401	-0.00354889	1.94289E-17	18/10/2011	0.01	-0.07	2.68021E-12
8/2/1998	0.005652	0.068032	2.17346E-33	11/25/2002	-0.03979	0.310599	9.63853E-16	9/6/2010	-0.005320121	-0.008869011	4.6113E-18	19/10/2011	-0.01	-0.07	7.52141E-12
8/3/1998	0.004473	0.072506	1.41015E-32	11/26/2002	-0.08508	0.225519	3.06429E-15	10/6/2010	-0.003461705	-0.012330716	7.67873E-19	20/10/2011	0	-0.08	2.33682E-11
8/4/1998	0.006859	0.079364	1.54181E-31	11/27/2002	0.016711	0.24223	8.20519E-15	11/6/2010	-0.004527814	-0.01685853	3.68094E-19	21/10/2011	0	-0.08	6.36324E-11
8/5/1998	0.002102	0.081467	1.98041E-30	11/28/2002	-0.00588	0.236352	1.34978E-14	12/6/2010	0	-0.01685853	3.37082E-19	22/10/2011	0	-0.08	1.69023E-10
8/6/1998	-0.0063	0.075167	2.13839E-29	11/29/2002	-0.01114	0.225214	2.42098E-14	13/6/2010	0	-0.01685853	7.05873E-19	23/10/2011	0	-0.08	4.36614E-10
8/7/1998	**0**	0.075167	1.93768E-28	11/30/2002	0	0.225214	4.08456E-14	14/6/2010	-0.003648852	-0.020507381	1.41569E-18	24/10/2011	0	-0.08	1.09242E-09
8/8/1998	0	0.075167	2.39501E-27	12/1/2002	0	0.225214	6.19797E-14	15/6/2010	-0.004491018	-0.024998399	2.69874E-18	25/10/2011	0	-0.08	2.63302E-09
8/9/1998	0.013063	0.08823	2.91125E-26	12/2/2002	0.013517	0.238731	9.06416E-14	16/6/2010	-0.004364488	-0.029362887	8.97819E-18	26/10/2011	0	-0.08	6.06696E-09
8/10/1998	-0.00325	0.084979	3.47812E-25	12/3/2002	0.063969	0.3027	1.26869E-13	17/6/2010	-0.000423953	-0.029786841	4.66207E-17	27/10/2011	0	-0.08	1.3216E-08
8/11/1998	-0.00546	0.079517	1.2935E-24	12/4/2002	-0.02063	0.282067	1.87845E-13	18/6/2010	0.005766673	-0.024020111	2.79382E-16	28/10/2011	0	-0.08	2.67569E-08
8/12/1998	-0.01165	0.06787	6.76856E-24	12/5/2002	-0.07638	0.205685	4.20455E-13	19/6/2010	0	-0.024020111	1.64482E-15	29/10/2011	0	-0.08	4.89721E-08
8/13/1998	0.007906	0.075777	6.105E-23	12/6/2002	0	0.205685	7.98207E-	20/6/2010	0	-0.024020	7.63967E-15	30/10/201	0	-0.08	7.71927E-08

							13			11		1			
8/14/1998	0	0.075777	7.03993E-22	12/7/2002	0	0.205685	7.52702E-13	21/6/2010	0.004983036	-0.019037075	3.48473E-14	31/10/2011	-0.01	-0.08	9.53695E-08
8/15/1998	0	0.075777	7.85038E-21	12/8/2002	0	0.205685	6.07511E-13	22/6/2010	-0.006065533	-0.025102605	1.55998E-13	1/11/2011	0.05	-0.04	1.47974E-07
8/16/1998	0.004738	0.080514	8.55269E-20	12/9/2002	0.010883	0.216568	3.90559E-13	23/6/2010	0.008560097	-0.016542508	3.97539E-13	2/11/2011	0.01	-0.03	1.41317E-08
8/17/1998	-0.00028	0.080237	9.09221E-19	12/10/2002	0.076417	0.292985	1.75175E-13	24/6/2010	0.009611312	-0.006931196	1.86591E-12	3/11/2011	0	-0.03	4.40589E-08
8/18/1998	-0.02445	0.055791	6.75146E-18	12/11/2002	0.062397	0.355382	5.16604E-14	25/6/2010	-0.011283993	-0.018215189	3.00132E-12	4/11/2011	0	-0.03	1.42298E-07
8/19/1998	-0.0035	0.052294	4.84165E-17	12/12/2002	0	0.355382	3.10328E-14	26/6/2010	0	-0.018215189	2.1081E-13	5/11/2011	0	-0.03	4.49017E-07
8/20/1998	0.000818	0.053112	2.05484E-16	12/13/2002	0.052644	0.408027	3.60566E-14	27/6/2010	0	-0.018215189	2.53542E-13	6/11/2011	0	-0.02	1.38275E-06
8/21/1998	0	0.053112	3.93701E-16	12/14/2002	0	0.408027	2.65778E-14	28/6/2010	0.000950069	-0.017265112	2.11923E-13	7/11/2011	0.01	-0.01	3.20745E-06
8/22/1998	0	0.053112	5.86383E-16	12/15/2002	0	0.408027	3.51007E-14	29/6/2010	-0.013704879	-0.030969999	8.71014E-14	8/11/2011	0	-0.01	7.30193E-06
8/23/1998	0.014033	0.067145	3.83857E-16	12/16/2002	0.086109	0.494135	2.42788E-14	30/6/2010	-0.001052632	-0.032022631	1.75708E-15	9/11/2011	0	-0.01	9.62694E-06
8/24/1998	0.020332	0.087477	1.83189E-17	12/17/2002	0.121966	0.616101	2.90326E-15	1/7/2010	-0.004263933	-0.036286563	2.11271E-14	10/11/2011	0.01	0	1.23471E-05
8/25/1998	-0.01615	0.071327	1.48078E-16	12/18/2002	-0.01148	0.604625	1.85284E-15	2/7/2010	0.005340815	-0.030945748	2.91724E-13	11/11/2011	0	0	1.52742E-05
8/26/1998	0.001364	0.072691	1.15181E-18	12/19/2002	-0.0183	0.586327	3.78701E-14	3/7/2010	0	-0.030945748	3.56047E-12	12/11/2011	0	0	6.40388E-06

8/27/1998	0.000826	0.073517	4.2491E-17	12/20/2002	-0.01292	0.573411	6.42823E-13	4/7/2010	0	-0.030945748	4.07725E-11	13/11/2011	-0.02	-0.02	1.39407E-06
8/28/1998	0	0.073517	2.25464E-15	12/21/2002	0	0.573411	7.13963E-12	5/7/2010	0.002947368	-0.027998379	4.45346E-10	14/11/2011	-0.01	-0.04	2.69771E-08
8/29/1998	0	0.073517	1.22688E-13	12/22/2002	0	0.573411	4.37922E-11	6/7/2010	-0.002322635	-0.030321015	4.61234E-09	15/11/2011	0.01	-0.03	1.40336E-07
8/30/1998	0.001507	0.075024	6.31912E-12	12/23/2002	0.09242	0.665831	1.3301E-10	7/7/2010	-0.004578681	-0.034899696	1.70404E-08	16/11/2011	-0.01	-0.04	1.00948E-06
8/31/1998	-0.00763	0.067398	3.06006E-10	12/24/2002	0.011151	0.676983	5.80881E-15	8/7/2010	-0.003582719	-0.038482415	1.13509E-07	17/11/2011	0.01	-0.03	5.06924E-06
9/1/1998	0.005372	0.07277	1.21532E-08	12/25/2002	0	0.676983	2.08588E-30	9/7/2010	0.006600094	-0.03188232	1.86712E-06	18/11/2011	0	-0.03	3.48003E-05
9/2/1998	0.002109	0.074879	2.92283E-09	12/26/2002	0	0.676983	1.85064E-24	10/7/2010	0	-0.03188232	2.32809E-05	19/11/2011	0	-0.03	0.000166329
9/3/1998	-4.00E-05	0.074839	2.62956E-12	12/27/2002	0	0.676983	1.49907E-18	11/7/2010	0	-0.03188232	0.000249661	20/11/2011	0	-0.03	0.000744316
9/4/1998	0	0.074839	0.000776889	12/28/2002	0	0.676983	1.09097E-12	12/7/2010	-0.006998107	-0.038880427	0.002326773	21/11/2011	-0.02	-0.05	0.003082687
9/5/1998	0	0.074839	0.00076444	12/29/2002	0	0.676983	7.0529E-07	13/7/2010	-0.001049538	-0.039929966	0.004238764	22/11/2011	0	-0.05	0.011430082
9/6/1998	0.034783	0.109622	0.0004573	12/30/2002	-0.01996	0.65702		14/7/2010	-0.008387503	-0.048317468	0.0009945945	23/11/2011	0.02	-0.03	0.0887766

Table 4.16: Longitudinal Analysis Uchumi Stock

UCHUMI																							
1998 BOMBLAST				2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACK				2012 BELLA VISTA ATTACK				2013 ALSHABAAB ATTACKS			
DATE	MAAR	CAR	T-VALUE	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
7/7/1998	0.004182	0.004182	7.78081E-07	10/30/2002	-0.03047440	-0.03	2.10245E-07	14/05/2010	-0.00818674	-0.01	6.44019E-26	25/10/2011	0.00	0	3.13945E-29	14/04/2012	0	0	2.04999E-14	18/12/2012	-0.00203884	0	0.002022686
7/8/1998	-0.02007	-0.01589	7.48903E-07	10/31/2002	-0.04012204	-0.07012204	2.00901E-07	15/05/2010	0	-0.01	1.53978E-26	26/10/2011	-0.02	-0.01868 1132	2.44725E-30	15/04/2012	0	0	1.5041E-14	19/12/2012	-0.01220983	-0.01220 9833	0.00201955
7/9/1998	0.000865	-0.01503	7.83992E-07	11/1/2002	0.01190798	-0.05821406	1.57894E-07	16/05/2010	0	-0.01	9.75353E-27	27/10/2011	-0.01	-0.02683 7973	1.1887E-31	16/04/2012	-0.00306179	-0.00306179	1.08045E-14	20/12/2012	0.00563982 5	-0.00657 0009	0.002011954
7/10/1998	0	-0.01503	5.14595E-07	11/2/2002	0	-0.05821406	9.13464E-08	17/05/2010	0.0029628	-0.00703 72	5.72395E-27	28/10/2011	0.00	-0.03139 8789	3.51832E-33	17/04/2012	0.01109281 7	0.00803102 6	7.5808E-15	21/12/2012	-0.00395367 3	-0.01052 3682	0.001978983
7/11/1998	0	-0.01503	3.39478E-07	11/3/2002	0	-0.05	5.65801E	18/05/2010	-0.00	-0.03	3.07256E-27	29/10/2011	0.00	-0.0313	4.5273E-35	18/04/2012	0.02099	0.02902	5.14201E-15	22/12/2012	0	-0.010	0.001957553
7/12/1998	0.003127	-0.0119	2.19801E-07	11/4/2002	-0.01435034 5	-0.07256440 5	3.42219E-08	19/05/2010	-0.01131123	-0.02054961 2	9.38573E-28	30/10/2011	0.00	-0.03139 8789	1.50705E-37	19/04/2012	-0.02245 1242	0.00657 5893	3.48196E-15	23/12/2012	0	-0.01052 3682	0.001928002
7/13/1998	0.029616	0.017716	1.39434E-07	11/5/2002	-0.01319535 7	-0.08575976 2	2.01609E-08	20/05/2010	-0.00054294 7	-0.02109255 9	3.42392E-28	31/10/2011	0.04	0.00618 1404	4.15433E-41	20/04/2012	0.00641 7541	0.01299 3434	2.41213E-15	24/12/2012	-0.01405519 5	-0.02457887 6	0.001898436
7/14/1998	0.000518	0.018234	9.4971E-08	11/6/2002	-0.0193221	-0.1050818	1.0089E-08	21/05/2010	-0.00151 94	-0.02226119	5.2686E-28	1/11/2011	-1.01	-1.00427 1078	4.08739E-47	21/04/2012	0	0.01299 343	1.52356E-15	25/12/2012	0	-0.02457887	0.001868841

					16	78			27	86								4				6	
7/15/1998	0.002279	0.020513	1.29634E-07	11/7/2002	0.04709893	-0.05798243	4.1999E-09	22/05/2010	0	-0.02261198	8.36579E-28	2/11/2011	0.00	-1.002909979	6.68187E-69	22/04/2012	0	0.012993434	9.40508E-16	26/12/2012	0	-0.024578876	0.001811917
7/16/1998	-0.01924	0.001276	1.781E-07	11/8/2002	0.04644041	-0.01154253	1.29328E-09	23/05/2010	0	-0.02261198	1.52205E-27	3/11/2011	-0.01	-1.007944674	3.46678E-68	23/04/2012	-0.013176932	-0.000183499	5.54773E-16	27/12/2012	-0.005305603	-0.029884479	0.001755949
7/17/1998	0	0.001276	2.5379E-07	11/9/2002	0	-0.01154253	6.29222E-10	24/05/2010	-0.00379285	-0.02640479	2.70441E-27	4/11/2011	0.01	-1.002909578	1.5134E-67	24/04/2012	-0.035871535	-0.033770634	3.10503E-16	28/12/2012	-0.000422208	-0.030306687	0.001700912
7/18/1998	0	0.001276	2.4415E-07	11/10/2002	0	-0.01154253	4.7766E-10	25/05/2010	0.00053978	-0.02586508	4.68205E-27	5/11/2011	0.00	-1.002909578	6.76877E-67	25/04/2012	0.009408292	-0.024362342	1.56615E-16	29/12/2012	0	-0.030306687	0.001637252
7/19/1998	0.020785	0.022061	2.34101E-07	11/11/2002	0.03503756	0.02349503	3.56446E-10	26/05/2010	0.00766943	-0.01819596	1.15641E-26	6/11/2011	0.00	-1.002909578	2.10366E-66	26/04/2012	0.021986691	-0.002375651	6.49649E-17	30/12/2012	0	-0.030306687	0.001574277
7/20/1998	0.011185	0.033246	2.2366E-07	11/12/2002	0.09015005	0.11364508	2.60932E-10	27/05/2010	0.01273538	-0.00546057	2.67492E-26	7/11/2011	0.00	-1.006673759	5.11388E-66	27/04/2012	-0.001676617	-0.004052268	2.50692E-17	31/12/2012	-0.003455026	-0.033761713	0.001512727
7/21/1998	0.006032	0.039278	3.26815E-07	11/13/2002	0.02566840	0.13931348	2.62778E-10	28/05/2010	-0.01278941	-0.01824999	2.43592E-26	8/11/2011	-0.02	-1.023295491	9.02357E-66	28/04/2012	0	-0.004052268	9.32033E-18	1/1/2013	0	-0.033761713	0.001452559
7/22/1998	-0.01701	0.022269	5.60107E-07	11/14/2002	0.08475003	0.22406352	4.91379E-10	29/05/2010	0	-0.01824999	1.59759E-27	9/11/2011	-0.03	-1.052947161	1.28097E-65	29/04/2012	0	-0.004052268	2.98459E-18	2/1/2013	-0.007273877	-0.041035591	0.001388292
7/23/1998	0.005713	0.027982	1.021E-06	11/15/2002	0.00791675	0.23198027	1.02135E-09	30/05/2010	0	-0.01824999	1.00601E-27	10/11/2011	0.01	-1.046409742	2.91718E-65	30/04/2012	0.000913905	-0.003138363	7.98098E-19	3/1/2013	0.015500232	-0.025535359	0.001325706

7/24/1998	0	0.027982	1.47365E-06	11/16/2002	0	0.23198073	2.52152E-09	31/05/2010	-0.00511682	-0.02336476	5.32614E-28	11/11/2011	-0.01	-1.057761673	2.14658E-64	1/5/2012	0	-0.003138363	1.69057E-19	4/1/2013	-0.015367267	-0.040902626	0.001254138
7/25/1998	0	0.027982	2.30466E-06	11/17/2002	0	0.23198073	6.17295E-09	1/6/2010	0	-0.02336476	2.25676E-28	12/11/2011	0.00	-1.057761673	9.78174E-64	2/5/2012	0.005067212	0.001928849	2.63855E-20	5/1/2013	0	-0.040902626	0.001206642
7/26/1998	-0.00212	0.025865	3.58092E-06	11/18/2002	-0.06536552	0.16661647 21	1.49493E-08	2/6/2010	0.000866457	-0.02250001 8	2.17518E-28	13/11/2011	0.00	-1.057761673	6.32478E-63	3/5/2012	-0.004321263	-0.002392414	2.67607E-21	6/1/2013	0	-0.040902626	0.001139101
7/27/1998	-0.00881	0.017056	5.52775E-06	11/19/2002	0.009340481	0.17595552 01	3.58058E-08	3/6/2010	-0.004336043	-0.02683606 2	1.81793E-28	14/11/2011	-0.05	-1.108579682	3.34351E-62	4/5/2012	0.002168124	-0.00022429	1.50235E-22	7/1/2013	-0.020564232	-0.061466857	0.001073869
7/28/1998	-0.01672	0.000336	8.23472E-06	11/20/2002	0.004510355	0.18046556 56	7.76998E-08	4/6/2010	-0.003022126	-0.02985818 8	1.03751E-28	15/11/2011	0.01	-1.103570637	1.35907E-61	5/5/2012	0	-0.00022429	2.97972E-24	8/1/2013	-0.013941568	-0.075408426	0.00101087
7/29/1998	0.019913	0.020249	1.06862E-05	11/21/2002	-0.06925724 9	0.11120830 7	1.70305E-07	5/6/2010	0	-0.02985818 8	1.24213E-28	16/11/2011	0.00	-1.101473029	4.3398E-60	6/5/2012	0	-0.00022429	9.62301E-27	9/1/2013	-0.024051428	-0.099459853	0.000926114
7/30/1998	-0.02287	-0.00262	1.015E-05	11/22/2002	-0.07266794 9	0.03854034 58	3.72191E-07	6/6/2010	0	-0.02985818 8	2.38151E-28	17/11/2011	0.00	-1.098586257	1.17338E-58	7/5/2012	1.020547945	1.020323656	3.99044E-31	10/1/2013	0.002723652	-0.096736201	0.000831351
7/31/1998	0	-0.00262	1.38202E-05	11/23/2002	0	0.03854034 58	6.46799E-07	7/6/2010	0.000860863	-0.02899732 5	4.19342E-28	18/11/2011	0.00	-1.102004141	2.8691E-57	8/5/2012	0.006711409	1.027035065	1.75638E-47	11/1/2013	-0.011274 01	-0.108010211	0.000720309
8/1/1998	0	-0.00262	1.22811E-05	11/24/2002	0	0.03854034 58	7.5637E-07	8/6/2010	-0.000215401	-0.02921272 6	6.65677E-28	19/11/2011	0.00	-1.102004141	6.07053E-56	9/5/2012	0	1.027035065	6.42488E-47	12/1/2013	0	-0.108010211	0.000623208
8/2/1998	0.02986	0.027236	1.08355E-05	11/25/2002	0.010634557	0.04917491 5	8.81655E-07	9/6/2010	0.004630128	-0.02458259 8	7.59294E-28	20/11/2011	0.00	-1.102004141	1.38073E-54	10/5/2012	0.013209118	1.040244183	2.30131E-46	13/1/2013	0	-0.108010211	0.000527694
8/3/1998	-0.01194	0.015297	9.48166E-06	11/26/2002	-0.0571060	-0.0079311	1.02415E-	10/6/2010	-0.0034617	-0.0280443	7.44804E-28	21/11/2011	0.00	-1.10046	2.98228E-53	11/5/2012	0.008559 90	1.048804 08	6.21524E-46	14/1/2013	-0.005855560	-0.113865 81	0.000443673

					5	34	06		05	03				3525			4	7			6	8	
8/4/1998	-0.00995	0.005345	1.43854E-05	11/27/2002	0.00700200 9	-0.00092912 5	1.26926E-06	11/6/2010	-0.00452781 4	-0.03257211 7	1.07463E-28	22/11/2011	0.01	-1.095273456	6.06768E-52	12/5/2012	0	1.04880407	1.97215E-45	15/1/2013	-0.02002735	-0.133893167	0.000370087
8/5/1998	0.002102	0.007448	1.79697E-05	11/28/2002	-0.00587761 3	-0.00680673 8	1.03606E-06	12/6/2010	0	-0.03257211 7	2.4937E-29	23/11/2011	0.00	-1.097293338	1.07658E-50	13/5/2012	0	1.04880407	6.27203E-45	16/1/2013	-0.01218985 3	-0.146083021	0.000303157
8/6/1998	-0.0063	0.001148	1.85661E-05	11/29/2002	-0.01113791 3	-0.01794465 1	8.80205E-07	13/6/2010	0	-0.03257211 7	1.7799E-29	24/11/2011	-0.03	-1.131181862	1.34122E-49	14/5/2012	0.02583995 2	1.07464039	1.31544E-44	17/1/2013	0.00263902	-0.143444001	0.000237673
8/7/1998	**0**	0.001148	1.99341E-05	11/30/2002	0	-0.01794465 1	6.97571E-07	14/6/2010	-0.00364885 2	-0.03622096 8	7.36329E-30	25/11/2011	0.01	-1.117504925	1.58497E-48	15/5/2012	0.02564298 6	1.10028702 4	1.43928E-44	18/1/2013	0.00721020 9	-0.136233792	0.000179653
8/8/1998	0	0.001148	1.86784E-05	12/1/2002	0	-0.01794465 1	4.84549E-07	15/6/2010	-0.00449101 8	-0.04071198 6	1.20989E-30	26/11/2011	0.00	-1.117504925	6.68913E-47	16/5/2012	0.03086101 5	1.13114804	3.37483E-44	19/1/2013	0	-0.136233792	0.000133795
8/9/1998	-0.1477	-0.14655	1.73534E-05	12/2/2002	0.05246433 9	0.03451968 8	3.22275E-07	16/6/2010	-0.00436448 8	-0.04507647 4	5.48526E-31	27/11/2011	0.00	-1.117504925	1.76473E-45	17/5/2012	0.01737220 3	1.14852024 2	2.03274E-43	20/1/2013	0	-0.136233792	9.87699E-05
8/10/1998	0.174168	0.027619	1.59633E-05	12/3/2002	-0.00647830 3	0.02800413 85	2.0304E-07	17/6/2010	-0.00042395 3	-0.04550042 8	1.46629E-30	28/11/2011	0.02	-1.101526478	4.3749E-44	18/5/2012	0.03820989 4	1.18673013 6	3.93206E-42	21/1/2013	0.00711026 1	-0.129123531	7.10683E-05
8/11/1998	0.012679	0.040298	3.38906E-12	12/4/2002	-0.00277656	0.02526482 8	2.07907E-07	18/6/2010	0.00074160 4	-0.04475882 4	1.59112E-29	29/11/2011	0.00	-1.099412336	1.00665E-42	19/5/2012	0	1.18673013 6	1.22928E-40	22/1/2013	0.00201323	-0.127110302	4.95696E-05
8/12/1998	-0.01783	0.02247	6.60342E-12	12/5/2002	0.02480843 6	0.05007326 4	1.96102E-07	19/6/2010	0	-0.04475882 4	1.84786E-28	30/11/2011	-0.01	-1.111782307	8.13606E-42	20/5/2012	0	1.18673013 6	6.23724E-39	23/1/2013	0.00682036 5	-0.120289937	3.38228E-05
8/13/1998	-0.01588	0.006593	2.19021E-11	12/6/2002	0	0.05007326 4	1.74618E-07	20/6/2010	0	-0.04475882 4	1.71123E-27	1/12/2011	-0.02	-1.127818391	3.58907E-41	21/5/2012	0.02752805 9	1.21425819 5	3.10451E-37	24/1/2013	0.00909178 8	-0.111198148	2.21538E-05
8/14/1998	0	0.006593	3.00008E-11	12/7/2002	0	0.0500732	1.93051E-	21/6/2010	0.00498 30	-0.03977757	1.50115E-26	2/12/2011	-0.03	-1.15542	2.57322E-40	22/5/2012	0.03721943	1.25147762	1.51468E-35	25/1/2013	-0.00566129	-0.116859 44	1.39425E-05

						64	07		36	87				3715			1	6			8	6	
8/15/1998	0	0.006593	8.49816E-12	12/8/2002	0	0.05007326 4	2.08414E-07	22/6/2010	-0.0010655 3	-0.0404841317	1.23439E-25	3/12/2011	0.00	-1.155423715	4.56211E-39	23/5/2012	0.020401534	1.27187916	5.91747E-34	26/1/2013	0	-0.1168594 46	8.37266E-06
8/16/1998	0.041469	0.048062	1.29699E-12	12/9/2002	0.0010795 25	0.05115278 9	2.18498E-07	23/6/2010	-0.0014901 54	-0.0423314 72	5.88745E-26	4/12/2011	0.00	-1.155423715	2.9341E-37	24/5/2012	-0.008497354	1.26338180 6	7.90039E-33	27/1/2013	0	-0.1168594 46	4.49098E-06
8/17/1998	-0.01799	0.03007	5.43933E-14	12/10/2002	-0.0109613 01	0.04019148 8	2.2075E-07	24/6/2010	-0.0053140 61	-0.0476455 33	1.36172E-26	5/12/2011	0.00	-1.159567784	1.83775E-35	25/5/2012	-0.092622778	1.17075902 8	2.48626E-32	28/1/2013	0.00077647 3	-0.1160829 73	2.09381E-06
8/18/1998	0.006418	0.036488	2.9548E-13	12/11/2002	-0.0271855 57	0.01300593 1	2.15261E-07	25/6/2010	-0.0014800 72	-0.0491256 04	1.14632E-27	6/12/2011	-0.01	-1.164672505	1.1189E-33	26/5/2012	0	1.17075902 8	5.20237E-32	29/1/2013	0.00301117	-0.1130718 03	7.88335E-07
8/19/1998	-0.0035	0.032991	2.94556E-13	12/12/2002	0	0.01300593 1	1.71211E-07	26/6/2010	0	-0.0491256 04	7.97867E-27	7/12/2011	-0.01	-1.170592042	7.37694E-32	27/5/2012	0	1.17075902 8	3.28184E-30	30/1/2013	0.00115638 2	-0.1119154 2	2.08611E-07
8/20/1998	0.012892	0.045883	5.54672E-13	12/13/2002	0.0778918 72	0.09089780 4	7.75995E-08	27/6/2010	0	-0.0491256 04	1.36077E-25	8/12/2011	-0.01	-1.182089902	5.2219E-30	28/5/2012	-0.101075414 2	1.07000488 6	2.01675E-28	31/1/2013	-0.0069072 87	-0.1188222 707	2.84054E-08
8/21/1998	0	0.045883	4.90366E-13	12/14/2002	0	0.09089780 4	2.41336E-08	28/6/2010	0.0009500 69	-0.0481755 36	2.0642E-24	9/12/2011	-0.01	-1.196835637	3.8414E-28	29/5/2012	0.079970375	1.14997526 1	1.20554E-26	1/2/2013	0.99477806 8	0.8759553 61	6.78778E-10
8/22/1998	0	0.045883	2.0216E-12	12/15/2002	0	0.09089780 4	2.34368E-08	29/6/2010	-0.0038038 88	-0.0519794 24	2.65368E-23	10/12/2011	0.00	-1.196835637	2.71495E-26	30/5/2012	0.024591482	1.17456674 3	2.89911E-28	2/2/2013	0	0.8759553 61	3.81374E-28
8/23/1998	0.008879	0.054762	7.82373E-12	12/16/2002	-0.0138912 68	0.07700653 6	1.86474E-08	30/6/2010	-0.0010526 32	-0.0530320 56	7.8593E-23	11/12/2011	0.00	-1.196835637	1.41317E-24	31/5/2012	0.013321211	1.18788795 4	8.00445E-27	3/2/2013	0	0.8759553 61	2.96381E-26
8/24/1998	-2.40E-05	0.054738	2.79078E-11	12/17/2002	0.0246618 61	0.10166683 97	1.03823E-08	1/7/2010	0.0007360 67	-0.0522959 89	3.81363E-21	12/12/2011	0.00	-1.196835637	7.01217E-23	1/6/2012	0	1.18788795 4	7.30517E-25	4/2/2013	0.00262467 2	0.8785800 33	2.13381E-24

8/25/1998	0.010419	0.065157	2.00906E-10	12/18/2002	0.07928437	0.18095273	1.39937E-09	2/7/2010	0.0003156	-0.05198029	1.90171E-19	13/12/2011	0.01	-1.1822138	3.29056E-21	2/6/2012	0	1.187887954	7.04916E-23	5/2/2013	-6.67627E-05	0.87851327	1.38897E-22
8/26/1998	-0.01007	0.055085	1.39279E-09	12/19/2002	0.06093948	0.24189272	1.91947E-11	3/7/2010	0	-0.05198029	9.13722E-18	14/12/2011	0.00	-1.184641353	1.44329E-19	3/6/2012	0	1.187887954	6.54779E-21	6/2/2013	-0.00774526 7	0.87076800 3	5.31384E-21
8/27/1998	0.012395	0.06748	1.17725E-08	12/20/2002	0.07393894 6	0.31583166 6	1.55045E-13	4/7/2010	0	-0.05198029	4.01274E-16	15/12/2011	0.00	-1.183279161	8.74405E-18	4/6/2012	0.03217599 9	1.220063953	5.83651E-19	7/2/2013	-0.00274846 4	0.86801954	1.2158E-19
8/28/1998	0	0.06748	7.86398E-08	12/21/2002	0	0.31583166 6	2.46972E-16	5/7/2010	0.00294736 8	-0.04903293	1.6855E-14	16/12/2011	-0.01	-1.192602396	4.81675E-16	5/6/2012	-0.01053388	1.209530073	4.97425E-17	8/2/2013	-0.00860470 6	0.85941483 4	7.02575E-18
8/29/1998	0	0.06748	6.05695E-07	12/22/2002	0	0.31583166 6	5.34305E-15	6/7/2010	-0.00232263 5	-0.05135556 5	6.74276E-13	17/12/2011	0.00	-1.192602396	2.58202E-14	6/6/2012	-0.02863241 6	1.180897657	9.88542E-16	9/2/2013	0	0.85941483 4	4.79719E-16
8/30/1998	-0.00421	0.063268	4.41368E-06	12/23/2002	-0.01517485 1	0.30065681 5	5.63372E-14	7/7/2010	0.00042131 9	-0.05093424 7	3.5659E-12	18/12/2011	0.00	-1.192602396	1.00439E-12	7/6/2012	0.01194243 6	1.192840093	2.59701E-14	10/2/2013	0	0.85941483 4	8.11661E-14
8/31/1998	-0.02661	0.036653	3.02166E-05	12/24/2002	-0.00027724 3	0.30037957 2	1.77208E-22	8/7/2010	-0.00358271 9	-0.05451696 5	9.01068E-11	19/12/2011	0.09	-1.098575046	3.36118E-11	8/6/2012	-0.01714285 7	1.175697236	2.58957E-12	12/2/2013	-0.01425907 5	0.84515575 8	1.28085E-11
9/1/1998	0.041285	0.077938	0.000201771	12/25/2002	0	0.30037957 2	1.39937E-09	9/7/2010	0.00157496 9	-0.05294199 7	8.67095E-10	20/12/2011	-0.06	-1.155798433	8.38211E-10	9/6/2012	0	1.175697236	1.55461E-10	13/2/2013	-0.00247184 8	0.84268391	1.86453E-09
9/2/1998	0.002109	0.080047	0.00036852	12/26/2002	0	0.30037957 2	1.91947E-11	10/7/2010	0	-0.05294199 7	5.93029E-08	21/12/2011	0.02	-1.138660734	4.22398E-09	10/6/2012	0	1.175697236	1.52248E-08	14/2/2013	0.011716399	0.85440030 9	1.92194E-07
9/3/1998	-0.02842	0.051623	0.001854362	12/27/2002	0	0.30037957 2	1.55045E-13	11/7/2010	0	-0.05294199 7	3.02714E-06	22/12/2011	-0.04	-1.181861314	5.45182E-07	11/6/2012	0.01985854 8	1.195555785	1.35867E-06	15/2/2013	0.00847926 3	0.86287957 2	5.3999E-06
9/4/1998	0	0.051623	0.000776889	12/28/2002	0	0.30037957	2.46972E-	12/7/2010	-0.00199981	-0.05494401	0.000133838	23/12/2011	0.03	-1.15190	3.6927E-05	12/6/2012	-0.03793	1.157624 59	0.000108553	16/2/2013	0	0.86287957	1.28085E-11

						72	16		07	04				4394			1185	9				2	
9/5/1998	0	0.051623	3.08305E-06	12/29/2002	0	0.30037957 2	5.34305E-15	13/7/2010	-0.00104953 8	-0.05598964 2	0.003011531	24/12/2011	0.00	-1.151904394		13/6/2012	-0.02061272	1.13701879	0.002859301	17/2/2013	0	0.86287957 2	1.86453E-09

Table 4.17: Longitudinal Analysis Safaricom Stock

SAFARICOM															
2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACKS				2012 BELLA VISTA ATTACK				2013 ALSHABAAB ATTACK			
DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
13/05/2010	0	0	0.003793	23/09/2011	0	0	2.32478E-16	14/04/2012	0	0	6.86801E-26	18/12/2012	0	0	0.00232
14/05/2010	0	0	0.003784	24/09/2011	0	0	1.49612E-16	15/04/2012	0	0	1.35241E-26	19/12/2012	0	-0.01	0.002312
15/05/2010	0	0	0.003775	25/09/2011	-0.01	-0.01	9.3059E-17	16/04/2012	0.02	0.02	2.11112E-27	20/12/2012	0	-0.01	0.002696
16/05/2010	-0.02	-0.02	0.003765	26/09/2011	-0.01	-0.01	5.57018E-17	17/04/2012	0	0.02	2.45566E-28	21/12/2012	0	-0.01	0.003136
17/05/2010	-0.01	-0.03	0.003755	27/09/2011	0.01	0	3.19193E-17	18/04/2012	0.02	0.03	1.29008E-28	22/12/2012	0	-0.01	0.003641
18/05/2010	0.01	-0.02	0.005229	28/09/2011	-0.04	-0.04	2.57277E-17	19/04/2012	0.02	0.05	2.42925E-29	23/12/2012	0	-0.01	0.004219
19/05/2010	-0.01	-0.03	0.008108	29/09/2011	-0.01	-0.06	1.34943E-17	20/04/2012	0	0.05	2.13982E-29	24/12/2012	0	-0.01	0.004878
20/05/2010	0	-0.03	0.011073	30/09/2011	0	-0.06	3.13845E-17	21/04/2012	0	0.05	5.86074E-29	25/12/2012	0	-0.01	0.005628
21/05/2010	0	-0.03	0.016771	1/10/2011	0	-0.06	8.43759E-17	22/04/2012	0	0.05	1.58837E-28	26/12/2012	0	-0.01	0.00648
22/05/2010	0	-0.03	0.025057	2/10/2011	0.02	-0.04	2.25011E-16	23/04/2012	0	0.05	4.25783E-28	27/12/2012	0	-0.01	0.007445
23/05/2010	0	-0.03	0.036908	3/10/2011	0.02	-0.02	5.95139E-16	24/04/2012	0.02	0.06	1.12836E-27	28/12/2012	-0.01	-0.02	0.008536
24/05/2010	-0.03	-0.06	0.053553	4/10/2011	-0.02	-0.04	1.10915E-15	25/04/2012	0.01	0.08	1.73247E-27	29/12/2012	0	-0.02	0.009766
25/05/2010	0.01	-0.05	0.076475	5/10/2011	0.01	-0.02	1.20751E-15	26/04/2012	-0.03	0.05	8.3078E-27	30/12/2012	0	-0.02	0.012527
26/05/2010	0	-0.05	0.134866	6/10/2011	0	-0.02	1.73996E-15	27/04/2012	0	0.05	4.28488E-26	31/12/2012	0	-0.02	0.01596
27/05/2010	0.03	-0.02	0.220475	7/10/2011	0	-0.02	1.84371E-15	28/04/2012	0	0.05	1.10423E-25	1/1/2013	0	-0.02	0.020194
28/05/2010	0	-0.02	0.352337	8/10/2011	0	-0.02	1.91681E-15	29/04/2012	0	0.05	2.80722E-25	2/1/2013	0	-0.02	0.025376
29/05/2010	0	-0.02	0.423504	9/10/2011	-0.01	-0.02	1.95075E-15	30/04/2012	0	0.05	7.03477E-25	3/1/2013	0	-0.01	0.031667
30/05/2010	0	-0.01	0.5	10/10/2011	0.02	-0.01	1.32708E-15	1/5/2012	0	0.05	1.73616E-24	4/1/2013	0.01	0	0.035474

31/05/2010	0	-0.01	0.460655	11/10/2011	0	-0.01	1.78036E-15	2/5/2012	0.02	0.06	4.21559E-24	5/1/2013	0	0	0.039652
1/6/2010	0.01	-0.01	0.421315	12/10/2011	-0.01	-0.02	1.11103E-15	3/5/2012	0.01	0.08	5.71297E-24	6/1/2013	0	0	0.039648
2/6/2010	-0.01	-0.01	0.342532	13/10/2011	0	-0.02	6.42213E-16	4/5/2012	0.01	0.09	2.67484E-23	7/1/2013	0.02	0.01	0.039644
3/6/2010	0.01	-0.01	0.342596	14/10/2011	0	-0.02	5.35529E-16	5/5/2012	0	0.09	1.40411E-22	8/1/2013	0.03	0.05	0.044228
4/6/2010	0	-0.01	0.266947	15/10/2011	0	-0.02	4.22263E-16	6/5/2012	0	0.09	7.14789E-22	9/1/2013	0.01	0.06	0.034262
5/6/2010	0	-0.01	0.232629	16/10/2011	0	-0.02	3.11324E-16	7/5/2012	0.01	0.11	3.59335E-21	10/1/2013	-0.03	0.03	0.014758
6/6/2010	-0.01	-0.02	0.200485	17/10/2011	0.01	-0.01	2.11491E-16	8/5/2012	-0.04	0.06	1.51369E-20	11/1/2013	-0.01	0.02	0.003561
7/6/2010	0	-0.02	0.170744	18/10/2011	-0.02	-0.03	1.29795E-16	9/5/2012	0	0.06	6.24184E-20	12/1/2013	0	0.02	0.00164
8/6/2010	-0.01	-0.02	0.116178	19/10/2011	0	-0.03	3.69149E-17	10/5/2012	0.03	0.09	2.25382E-19	13/1/2013	0	0.02	0.000946
9/6/2010	0	-0.03	0.09454	20/10/2011	0	-0.03	2.92749E-17	11/5/2012	-0.01	0.08	8.04164E-19	14/1/2013	0	0.02	0.000515
10/6/2010	0.01	-0.02	0.039408	21/10/2011	0	-0.03	2.06845E-17	12/5/2012	0	0.08	3.89622E-18	15/1/2013	-0.01	0	0.000262
11/6/2010	0	-0.02	0.010988	22/10/2011	0	-0.03	1.25825E-17	13/5/2012	0	0.08	1.91225E-17	16/1/2013	0	0	0.000183
12/6/2010	0	-0.02	0.003793	23/10/2011	0	-0.03	6.26153E-18	14/5/2012	0.01	0.09	9.24915E-17	17/1/2013	0	0	0.000176
13/6/2010	-0.01	-0.03	0.000948	24/10/2011	0	-0.03	2.35179E-18	15/5/2012	0	0.09	4.40682E-16	18/1/2013	0.01	0.01	0.000168
14/6/2010	0.01	-0.02	0.000144	25/10/2011	-0.01	-0.03	5.81238E-19	16/5/2012	0.01	0.11	2.02295E-15	19/1/2013	0	0.01	0.000159
15/6/2010	0.02	0	4.35E-07	26/10/2011	-0.02	-0.05	1.63555E-20	17/5/2012	0	0.11	7.92369E-15	20/1/2013	0	0.01	0.000105
16/6/2010	0.01	0.01	2.06E-10	27/10/2011	-0.04	-0.09	2.89482E-22	18/5/2012	0	0.11	2.28722E-14	21/1/2013	0	0.02	6.63E-05
17/6/2010	-0.01	0.01	7.67E-11	28/10/2011	0	-0.09	3.09883E-23	19/5/2012	0	0.11	6.12685E-14	22/1/2013	-0.02	0	2.35E-05
18/6/2010	0	0.01	1.5E-10	29/10/2011	0	-0.09	2.67889E-22	20/5/2012	0	0.11	1.49206E-13	23/1/2013	0	0	6.68E-06
19/6/2010	0	0.01	4.85E-10	30/10/2011	-0.02	-0.1	2.27075E-21	21/5/2012	0	0.11	3.20169E-13	24/1/2013	0.01	0.01	5.45E-06
20/6/2010	0	0	1.54E-09	31/10/2011	-0.01	-0.11	9.67234E-21	22/5/2012	0	0.11	5.75624E-13	25/1/2013	-0.01	0.01	4.29E-06
21/6/2010	0.01	0.01	4.77E-10	1/11/2011	-0.03	-0.15	1.04366E-19	23/5/2012	-0.03	0.08	7.94216E-13	26/1/2013	0	0.01	6.63E-07
22/6/2010	0	0.01	9.33E-11	2/11/2011	0.05	-0.1	5.69214E-19	24/5/2012	-0.01	0.07	7.08961E-13	27/1/2013	0	0.01	1.6E-07
23/6/2010	0	0.01	3.34E-10	3/11/2011	0	-0.1	4.16608E-21	25/5/2012	-0.03	0.04	3.00481E-12	28/1/2013	-0.03	-0.03	2.21E-08
24/6/2010	0	0.02	1.17E-09	4/11/2011	0	-0.1	6.09475E-20	26/5/2012	0	0.04	1.51726E-11	29/1/2013	-0.02	-0.05	5.84E-09
25/6/2010	0	0.02	2.1E-09	5/11/2011	0	-0.1	8.69524E-19	27/5/2012	0	0.04	3.82666E-11	30/1/2013	0	-0.05	1.93E-08
26/6/2010	0	0.02	2.62E-09	6/11/2011	0	-0.1	1.20816E-17	28/5/2012	0	0.04	9.32762E-11	31/1/2013	0.02	-0.03	6.94E-08
27/6/2010	-0.01	0	1.55E-09	7/11/2011	0.01	-0.09	1.63244E-16	29/5/2012	0	0.04	2.18439E-10	1/2/2013	0.02	-0.01	2.39E-07

28/6/2010	0	0.01	7.43E-09	8/11/2011	0	-0.09	2.14137E-15	30/5/2012	0	0.04	4.87333E-10	2/2/2013	0	-0.01	7.86E-07
29/6/2010	0	0.01	3.45E-08	9/11/2011	-0.03	-0.12	2.47079E-14	31/5/2012	0	0.04	1.02278E-09	3/2/2013	0	-0.01	6.42E-07
30/6/2010	0.01	0.01	1.55E-07	10/11/2011	0.01	-0.11	2.7597E-13	1/6/2012	0	0.04	1.97946E-09	4/2/2013	-0.02	-0.02	4.05E-07
1/7/2010	0	0.01	4.27E-09	11/11/2011	0	-0.11	5.46819E-13	2/6/2012	0	0.04	3.41492E-09	5/2/2013	-0.02	-0.04	7.95E-09
2/7/2010	0	0.01	2.54E-08	12/11/2011	0	-0.11	2.92346E-12	3/6/2012	0	0.04	4.92498E-09	6/2/2013	-0.01	-0.05	2.33E-09
3/7/2010	0	0.01	1.46E-07	13/11/2011	0.01	-0.1	1.06362E-11	4/6/2012	0	0.04	5.15016E-09	7/2/2013	-0.01	-0.06	2.06E-08
4/7/2010	-0.01	0	8.05E-07	14/11/2011	0	-0.1	1.45266E-11	5/6/2012	0.03	0.07	2.5702E-09	8/2/2013	0.02	-0.04	1.3E-07
5/7/2010	0	0.01	4.24E-06	15/11/2011	0.01	-0.09	9.27716E-11	6/6/2012	0	0.07	4.21787E-11	9/2/2013	0	-0.04	4.69E-09
6/7/2010	0	0.01	2.13E-05	16/11/2011	0.01	-0.08	2.52946E-10	7/6/2012	0	0.07	3.1014E-10	10/2/2013	0	-0.04	8.53E-08
7/7/2010	0	0.01	0.000102	17/11/2011	-0.01	-0.09	5.7367E-09	8/6/2012	0.01	0.08	1.70302E-09	12/2/2013	0.01	-0.03	1.45E-06
8/7/2010	0	0.01	0.000458	18/11/2011	0	-0.09	8.0317E-08	9/6/2012	0	0.08	4.07257E-09	13/2/2013	0	-0.04	2.26E-05
9/7/2010	0	0.01	0.001941	19/11/2011	0	-0.09	1.96374E-06	10/6/2012	0	0.08	9.76676E-08	14/2/2013	-0.01	-0.04	0.000322
10/7/2010	0	0.01	0.007696	20/11/2011	0	-0.09	4.30142E-05	11/6/2012	0	0.08	2.15699E-06	15/2/2013	0	-0.04	1.6E-07
11/7/2010	0	0.01	0.028595	21/11/2011	0	-0.09	0.000798085	12/6/2012	0.01	0.1	4.30142E-05	16/2/2013	0	-0.04	2.21E-08
12/7/2010	0	0.01	0.102416	22/11/2011	0	-0.08	2.31601E-10	13/6/2012	-0.01	0.08	0.000798085	17/2/2013	0	-0.04	5.84E-09

Table 4.18: Longitudinal Analysis Mumias Stock

MUMIAS SUGAR COMPANY															
2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2012 BELLA VISTA ATTACK					2013 ALSHABAAB ATTACK		
DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
10/30/2002	0.053095	0.053095	2.938	13/05/2010	0.01	0.01	2.693	14/04/2012	0	0	1.90294E-31	18/12/2012	0.04	0.04	8.47607E-15
10/31/2002	-0.02654	0.026557	2.512	14/05/2010	0	0.01	1.990	15/04/2012	0	0	8.83658E-33	19/12/2012	0.01	0.04	5.9919E-15
11/1/2002	0.022233	0.048791	3.004	15/05/2010	0	0.01	5.607	16/04/2012	0.02	0.02	2.07617E-34	20/12/2012	-0.01	0.03	1.38459E-15
11/2/2002	0	0.048791	3.043	16/05/2010	0	0.01	1.395	17/04/2012	0.04	0.06	1.79615E-36	21/12/2012	-0.03	0	1.66578E-16
11/3/2002	0	0.048791	3.527	17/05/2010	0	0.01	2.995	18/04/2012	0.02	0.08	1.65785E-38	22/12/2012	0	0	2.54777E-17
11/4/2002	-0.01435	0.03444	4.075	18/05/2010	-0.01	0	5.361	19/04/2012	0.09	0.17	8.62585E-40	23/12/2012	0	0	1.3357E-17
11/5/2002	-0.0132	0.021245	4.693	19/05/2010	-0.02	-0.02	7.653	20/04/2012	0.1	0.27	8.94409E-41	24/12/2012	-0.01	-0.01	6.56948E-18

11/6/2002	-0.01932	0.001923	4.924	20/05/2010	0	-0.01	3.657	21/04/2012	0	0.27	4.45996E-40	25/12/2012	0	-0.01	2.99877E-18
11/7/2002	0.028057	0.029979	4.707	21/05/2010	0	-0.01	4.791	22/04/2012	0	0.27	1.52489E-39	26/12/2012	0	-0.01	1.97485E-18
11/8/2002	-0.07182	-0.04185	3.883	22/05/2010	0	-0.01	6.206	23/04/2012	0.03	0.3	4.90342E-39	27/12/2012	-0.02	-0.03	1.23274E-18
11/9/2002	0	-0.04185	3.875	23/05/2010	0	-0.02	7.938	24/04/2012	-0.09	0.22	1.46958E-38	28/12/2012	0	-0.03	7.22985E-19
11/10/2002	0	-0.04185	2.157	24/05/2010	0	-0.02	2.000	25/04/2012	-0.09	0.13	5.08075E-39	29/12/2012	0	-0.03	9.15514E-19
11/11/2002	-0.01912	-0.06096	1.148	25/05/2010	-0.01	-0.03	5.003	26/04/2012	0	0.13	4.16862E-38	30/12/2012	0	-0.03	1.1378E-18
11/12/2002	-0.00817	-0.06913	5.806	26/05/2010	-0.03	-0.05	1.242	27/04/2012	-0.01	0.12	5.37009E-38	31/12/2012	0	-0.03	1.38507E-18
11/13/2002	-0.00336	-0.07249	2.238	27/05/2010	0.02	-0.03	3.061	28/04/2012	0	0.12	6.10747E-38	1/1/2013	0	-0.03	1.64766E-18
11/14/2002	-0.01164	-0.08414	7.040	28/05/2010	0	-0.03	5.699	29/04/2012	0	0.12	3.11575E-38	2/1/2013	0	-0.02	1.91008E-18
11/15/2002	0.007917	-0.07622	1.831	29/05/2010	0	-0.03	1.880	30/04/2012	0	0.12	1.13719E-38	3/1/2013	0	-0.02	1.38674E-18
11/16/2002	0	-0.07622	3.269	30/05/2010	0.02	-0.02	6.135	1/5/2012	0	0.12	2.61743E-39	4/1/2013	0.01	-0.01	9.36542E-19
11/17/2002	0	-0.07622	5.007	31/05/2010	0	-0.02	1.780	2/5/2012	0.02	0.14	3.07808E-40	5/1/2013	0	-0.01	5.79709E-19
11/18/2002	0.016121	-0.0601	5.331	1/6/2010	0.01	-0.01	4.419	3/5/2012	0.07	0.2	1.25266E-41	6/1/2013	0	-0.01	1.72982E-19
11/19/2002	0.016344	-0.04376	3.377	2/6/2010	-0.01	-0.01	1.087	4/5/2012	0.03	0.23	4.5806E-43	7/1/2013	-0.01	-0.02	3.9632E-20
11/20/2002	0.058189	0.014433	1.584	3/6/2010	0	-0.02	5.211	5/5/2012	0	0.23	5.81415E-42	8/1/2013	-0.01	-0.04	6.30321E-21
11/21/2002	0.102287	0.11672	4.886	4/6/2010	0	-0.02	1.290	6/5/2012	0	0.23	7.2837E-41	9/1/2013	-0.03	-0.07	3.44334E-21
11/22/2002	0.081496	0.198215	4.126	5/6/2010	0	-0.02	3.166	7/5/2012	-0.01	0.22	8.97872E-40	10/1/2013	0	-0.07	3.21298E-21
11/23/2002	0	0.198215	4.044	6/6/2010	0	-0.02	7.695	8/5/2012	-0.02	0.21	1.0883E-38	11/1/2013	-0.01	-0.08	1.19456E-20
11/24/2002	0	0.198215	1.451	7/6/2010	-0.01	-0.02	1.852	9/5/2012	-0.01	0.2	1.29595E-37	12/1/2013	0	-0.08	4.38519E-20
11/25/2002	0.010635	0.20885	5.141	8/6/2010	0.01	-0.01	2.347	10/5/2012	-0.01	0.19	1.93938E-36	13/1/2013	0	-0.08	2.03509E-19
11/26/2002	0.003415	0.212265	1.797	9/6/2010	0	-0.02	5.584	11/5/2012	0	0.19	2.46776E-35	14/1/2013	-0.02	-0.1	9.32071E-19
11/27/2002	0.016806	0.229071	6.914	10/6/2010	0	-0.02	1.315	12/5/2012	0	0.19	2.22927E-34	15/1/2013	0	-0.1	4.21147E-18
11/28/2002	0.032957	0.262029	2.710	11/6/2010	0	-0.02	3.067	13/5/2012	0	0.19	1.96843E-33	16/1/2013	0.04	-0.06	2.216E-17
11/29/2002	-0.01114	0.250891	1.200	12/6/2010	0	-0.02	7.078	14/5/2012	-0.01	0.18	1.69596E-32	17/1/2013	0.01	-0.05	1.14804E-16
11/30/2002	0	0.250891	6.155	13/6/2010	0	-0.02	1.616	15/5/2012	0	0.18	1.42285E-31	18/1/2013	0	-0.05	2.88891E-16
12/1/2002	0	0.250891	2.988	14/6/2010	0.01	-0.01	3.652	16/5/2012	0	0.18	6.62215E-31	19/1/2013	0	-0.05	4.54737E-16
12/2/2002	-0.06152	0.189372	1.427	15/6/2010	-0.01	-0.01	8.161	17/5/2012	0.01	0.19	2.81371E-30	20/1/2013	0	-0.05	6.71789E-16
12/3/2002	-0.0027	0.186674	6.709	16/6/2010	-0.01	-0.02	3.932	18/5/2012	0	0.19	1.0668E-29	21/1/2013	-0.01	-0.06	9.17109E-16

12/4/2002	-0.00278	0.183897	1.961	17/6/2010	0	-0.02	4.527	19/5/2012	0	0.19	7.22229E-29	22/1/2013	-0.01	-0.07	1.13162E-15
12/5/2002	0.016345	0.200243	5.458	18/6/2010	0	-0.02	1.006	20/5/2012	0	0.19	4.59469E-28	23/1/2013	-0.01	-0.08	2.23486E-15
12/6/2002	0	0.200243	1.439	19/6/2010	0	-0.02	2.210	21/5/2012	0.02	0.21	2.7117E-27	24/1/2013	0	-0.08	6.72844E-15
12/7/2002	0	0.200243	4.446	20/6/2010	0.01	-0.01	4.792	22/5/2012	0.01	0.21	1.45816E-26	25/1/2013	0	-0.08	2.82627E-14
12/8/2002	0	0.200243	1.345	21/6/2010	0.01	0	1.025	23/5/2012	0.01	0.22	1.36914E-25	26/1/2013	0	-0.08	1.16259E-13
12/9/2002	0.00108	0.201322	3.985	22/6/2010	0	0	1.099	24/5/2012	-0.01	0.21	1.91588E-24	27/1/2013	0	-0.08	4.67797E-13
12/10/2002	-0.01096	0.190361	1.152	23/6/2010	-0.02	-0.02	3.635	25/5/2012	0	0.21	3.25485E-23	28/1/2013	0.01	-0.07	1.83874E-12
12/11/2002	-0.01796	0.172401	3.286	24/6/2010	0	-0.01	7.492	26/5/2012	0	0.21	4.37171E-22	29/1/2013	0	-0.06	7.04893E-12
12/12/2002	0	0.172401	8.018	25/6/2010	0	-0.01	4.424	27/5/2012	0	0.21	5.7216E-21	30/1/2013	0	-0.06	1.07982E-11
12/13/2002	-0.02174	0.150665	1.462	26/6/2010	0	-0.01	1.817	28/5/2012	-0.01	0.21	7.28451E-20	31/1/2013	-0.01	-0.07	1.39567E-11
12/14/2002	0	0.150665	2.447	27/6/2010	-0.01	-0.02	3.697	29/5/2012	-0.01	0.2	1.14102E-18	1/2/2013	-0.01	-0.08	1.37459E-11
12/15/2002	0	0.150665	2.343	28/6/2010	-0.01	-0.03	1.180	30/5/2012	0	0.2	1.37958E-17	2/2/2013	0	-0.08	2.0698E-11
12/16/2002	-0.01389	0.136774	1.539	29/6/2010	0	-0.03	1.132	31/5/2012	0.02	0.21	1.04766E-16	3/2/2013	0	-0.08	5.05437E-11
12/17/2002	0.136158	0.272931	4.511	30/6/2010	0.01	-0.03	1.677	1/6/2012	0	0.21	3.54948E-16	4/2/2013	-0.01	-0.09	1.00555E-10
12/18/2002	0.031259	0.30419	1.292	1/7/2010	-0.01	-0.04	2.048	2/6/2012	0	0.21	3.66811E-15	5/2/2013	0	-0.09	1.37651E-10
12/19/2002	0.00022	0.304411	1.209	2/7/2010	0	-0.04	1.370	3/6/2012	0	0.21	3.54765E-14	6/2/2013	-0.02	-0.11	3.11496E-10
12/20/2002	0.034357	0.338768	4.021	3/7/2010	0	-0.04	1.772	4/6/2012	0.01	0.22	3.15172E-13	7/2/2013	0	-0.11	3.79371E-10
12/21/2002	0	0.338768	4.588	4/7/2010	0	-0.04	2.190	5/6/2012	-0.01	0.21	2.48927E-12	8/2/2013	-0.01	-0.12	2.66872E-09
12/22/2002	0	0.338768	5.088	5/7/2010	-0.01	-0.05	2.570	6/6/2012	0.01	0.22	3.03083E-11	9/2/2013	0	-0.12	1.59225E-08
12/23/2002	0.063565	0.402333	3.786	6/7/2010	0.01	-0.04	2.846	7/6/2012	0.01	0.23	1.73974E-10	10/2/2013	0	-0.12	1.82709E-07
12/24/2002	-0.02947	0.372859	6.525	7/7/2010	0	-0.04	2.082	8/6/2012	0	0.23	1.58616E-09	12/2/2013	-0.03	-0.15	1.93123E-06
12/25/2002	0	0.372859	4.115	8/7/2010	0	-0.04	2.522	9/6/2012	0	0.23	2.27444E-08	13/2/2013	0	-0.15	1.82522E-05
12/26/2002	0	0.372859	2.011	9/7/2010	0	-0.04	2.822	10/6/2012	0	0.23	2.90442E-07	14/2/2013	0.01	-0.14	0.00019769
12/27/2002	0	0.372859	8.974	10/7/2010	0	-0.04	0.002	11/6/2012	0.02	0.25	3.02231E-06	15/2/2013	0.02	-0.12	0.00137931
12/28/2002	0	0.372859	3.596	11/7/2010	-0.01	-0.05	0.002	12/6/2012	0.01	0.26	1.51504E-05	16/2/2013	0	-0.12	0.00019769
12/29/2002	0	0.372859	1.280	12/7/2010	0	-0.05		13/6/2012	0.01	0.27	0.0003122	17/2/2013	0	-0.12	0.00137931

Table 4.19: Longitudinal Analysis CIC Stock

CIC INSURANCE			
	2013 ALSHABAAB ATTACK		
DATE	MAAR	CAR	T-VALUES
18/12/2012	0.01	0.01	8.13231E-15
19/12/2012	0.01	0.02	5.74213E-15
20/12/2012	0.03	0.05	5.26221E-15
21/12/2012	-0.03	0.02	6.14431E-15
22/12/2012	0	0.02	1.25982E-14
23/12/2012	0	0.02	1.4601E-14
24/12/2012	0.03	0.05	1.67973E-14
25/12/2012	0	0.05	1.91702E-14
26/12/2012	0	0.05	3.90055E-14
27/12/2012	-0.03	0.02	7.8889E-14
28/12/2012	0.03	0.04	1.58589E-13
29/12/2012	0	0.04	1.38733E-13
30/12/2012	0	0.04	2.35937E-13
31/12/2012	0.01	0.06	3.99207E-13
1/1/2013	0	0.06	7.91142E-13
2/1/2013	-0.02	0.04	1.77846E-12
3/1/2013	-0.02	0.02	3.96506E-12
4/1/2013	-0.01	0	6.57373E-12
5/1/2013	0	0	5.66413E-12
6/1/2013	0	0	3.57114E-12
7/1/2013	-0.02	-0.01	2.13221E-12
8/1/2013	0	-0.01	1.64529E-12
9/1/2013	-0.02	-0.03	5.94379E-13
10/1/2013	0.06	0.02	1.8226E-13
11/1/2013	-0.01	0.02	7.3696E-15
12/1/2013	0	0.02	7.67744E-15
13/1/2013	0	0.02	4.98752E-15
14/1/2013	-0.01	0.01	2.88546E-15
15/1/2013	0	0.01	1.43523E-15
16/1/2013	0.01	0.02	2.986E-16
17/1/2013	0.04	0.06	3.60881E-17
18/1/2013	0	0.05	5.05729E-18
19/1/2013	0	0.05	5.05493E-18
20/1/2013	0	0.05	4.24186E-18
21/1/2013	0.02	0.07	2.78332E-18
22/1/2013	0.01	0.09	1.26281E-18
23/1/2013	0.01	0.09	4.63909E-18
24/1/2013	0.02	0.12	1.63635E-17
25/1/2013	0.02	0.13	1.17219E-16

26/1/2013	0	0.13	9.06775E-16
27/1/2013	0	0.13	4.94409E-15
28/1/2013	-0.01	0.12	2.56086E-14
29/1/2013	0	0.13	1.24701E-13
30/1/2013	0	0.12	5.62208E-13
31/1/2013	-0.01	0.12	3.40316E-12
1/2/2013	0.01	0.13	1.29768E-11
2/2/2013	0	0.13	6.91689E-11
3/2/2013	0	0.13	1.94528E-10
4/2/2013	-0.03	0.1	3.65221E-10
5/2/2013	0.01	0.11	2.60349E-10
6/2/2013	-0.01	0.1	1.96312E-09
7/2/2013	-0.01	0.09	5.36677E-09
8/2/2013	0	0.09	2.84056E-08
9/2/2013	0	0.09	2.66859E-07
10/2/2013	0	0.09	2.3216E-06
12/2/2013	-0.02	0.08	1.82899E-05
13/2/2013	-0.01	0.06	2.14916E-05
14/2/2013	0.01	0.07	0.000312521
15/2/2013	0.01	0.08	0.000942508

Table 4.20: Longitudinal Analysis Equity Stock

				EQUITY BANK											
2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACKS				2012 BELLA VISTA ATTACK				2013 ALSHABAAB ATTACK			
DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
14/05/2010	-0.008186746	-0.01	1.07742E-28	23/09/2011	0	0	2.56464E-05	14/04/2012	0	0	8.45114E-19	18/12/2012	-0.002038845	0	2.61416E-05
15/05/2010	0	-0.01	9.18431E-30	24/09/2011	0	0	1.42776E-05	15/04/2012	0	0	4.63228E-19	19/12/2012	-0.004497751	-0.004497751	2.57378E-05
16/05/2010	0	-0.01	3.09032E-31	25/09/2011	0	0	1.39875E-05	16/04/2012	-0.01	-0.01	2.41343E-19	20/12/2012	0.008506102	0.004008351	2.52539E-05
17/05/2010	0.008225958	-0.001774042	4.56276E-33	26/09/2011	0	0	1.36918E-05	17/04/2012	0.01	0	1.18659E-19	21/12/2012	-0.011909295	-0.007900944	2.46118E-05

18/05/2010	0.016123419	0.014349377	1.90131E-35	27/09/2011	-0.01	0	1.33902E-05	18/04/2012	0	0	1.82412E-20	22/12/2012	0	-0.007900944	2.42369E-05
19/05/2010	0.068380293	0.08272967	2.36623E-38	28/09/2011	0	0	1.50344E-05	19/04/2012	0	0	7.30211E-21	23/12/2012	0	-0.007900944	2.34693E-05
20/05/2010	0.035171339	0.117901009	1.18262E-41	29/09/2011	-0.01	-0.01	1.46861E-05	20/04/2012	0	0	2.64329E-21	24/12/2012	-0.001168597	-0.009069541	2.27007E-05
21/05/2010	0.009974826	0.127875835	1.77902E-42	30/09/2011	0	-0.01	1.43308E-05	21/04/2012	0	0	8.48643E-22	25/12/2012	0	-0.009069541	2.19311E-05
22/05/2010	0	0.127875835	2.83366E-42	1/10/2011	0	-0.01	1.19333E-05	22/04/2012	0	0	2.35652E-22	26/12/2012	0	-0.009069541	2.11266E-05
23/05/2010	0	0.127875835	7.37913E-42	2/10/2011	-0.02	-0.03	9.88382E-06	23/04/2012	0	0	5.4739E-23	27/12/2012	0.005332695	-0.003736845	2.03231E-05
24/05/2010	0.041661741	0.169537576	1.82161E-41	3/10/2011	0	-0.03	8.1392E-06	24/04/2012	0.01	0.02	1.01635E-23	28/12/2012	0.010104108	0.006367262	1.95209E-05
25/05/2010	0.044018043	0.213555619	4.23152E-41	4/10/2011	0.02	-0.01	4.48506E-06	25/04/2012	0.05	0.06	6.26548E-24	29/12/2012	0	0.006367262	1.88614E-05
26/05/2010	-0.054830957	0.158724662	3.98008E-40	5/10/2011	-0.04	-0.04	2.37397E-06	26/04/2012	-0.02	0.04	3.52565E-24	30/12/2012	0	0.006367262	1.84558E-05
27/05/2010	-0.053931282	0.104793382	2.06906E-39	6/10/2011	0	-0.04	2.26412E-06	27/04/2012	-0.01	0.03	8.03579E-24	31/12/2012	-0.011260727	-0.004893464	1.80315E-05
28/05/2010	-0.000884654	0.103908728	1.63157E-38	7/10/2011	0	-0.04	8.69426E-07	28/04/2012	0	0.03	3.59511E-23	1/1/2013	0	-0.004893464	1.75879E-05
29/05/2010	0	0.103908728	6.47406E-39	8/10/2011	0	-0.04	3.01892E-07	29/04/2012	0	0.03	1.2074E-22	2/1/2013	-0.007273877	-0.012167342	1.68482E-05
30/05/2010	0	0.103908728	1.50459E-39	9/10/2011	-0.01	-0.05	9.29067E-08	30/04/2012	0.01	0.04	4.02012E-22	3/1/2013	-0.005442177	-0.017609519	1.61031E-05
31/05/2010	0.053707048	0.157615776	1.78237E-40	10/10/2011	0	-0.05	2.46731E-08	1/5/2012	0	0.04	1.32681E-21	4/1/2013	-0.002276849	-0.019886367	1.51875E-05

1/6/2010	0	0.157615776	7.27385E-42	11/10/2011	0	-0.05	3.41949E-09	2/5/2012	0.01	0.05	5.77637E-21	5/1/2013	0	-0.019886367	1.4164E-05
2/6/2010	0.011977568	0.169593344	5.05511E-41	12/10/2011	0	-0.05	3.16485E-10	3/5/2012	-0.01	0.04	2.48775E-20	6/1/2013	0	-0.019886367	1.31172E-05
3/6/2010	0.017641979	0.187235323	3.41992E-40	13/10/2011	0.04	-0.01	1.64351E-11	4/5/2012	0	0.04	9.5917E-20	7/1/2013	-0.01298604	-0.032872407	1.21E-05
4/6/2010	0.007730562	0.194965885	3.82559E-39	14/10/2011	0	-0.01	3.50033E-13	5/5/2012	0	0.04	4.05859E-19	8/1/2013	-0.003415253	-0.036287659	1.11129E-05
5/6/2010	0	0.194965885	5.30443E-38	15/10/2011	0	-0.01	9.51374E-14	6/5/2012	0	0.04	1.69761E-18	9/1/2013	0.030649707	-0.005637953	9.94311E-06
6/6/2010	0	0.194965885	6.54991E-37	16/10/2011	-0.01	-0.02	2.07428E-14	7/5/2012	0	0.04	7.01719E-18	10/1/2013	0.019900961	0.014263008	8.79024E-06
7/6/2010	0.011499161	0.206465046	7.97425E-36	17/10/2011	0.01	0	3.35443E-15	8/5/2012	-0.01	0.03	2.8657E-17	11/1/2013	-0.006038408	0.0082246	8.12667E-06
8/6/2010	0.010310915	0.21677596	9.56745E-35	18/10/2011	0.04	0.03	3.548E-16	9/5/2012	0	0.03	1.15587E-16	12/1/2013	0	0.0082246	7.72235E-06
9/6/2010	-0.026619872	0.190156088	7.66501E-34	19/10/2011	0	0.03	1.97031E-17	10/5/2012	-0.02	0	3.61361E-16	13/1/2013	0	0.0082246	7.22326E-06
10/6/2010	-0.003461705	0.186694384	3.19538E-33	20/10/2011	0.03	0.06	3.38749E-17	11/5/2012	0.01	0.02	6.34446E-16	14/1/2013	-0.011118764	-0.002894164	6.71158E-06
11/6/2010	0.016977563	0.203671946	4.05981E-32	21/10/2011	0	0.06	5.66637E-17	12/5/2012	0	0.02	4.30483E-16	15/1/2013	0.004625728	0.001731564	6.18897E-06
12/6/2010	0	0.203671946	5.33182E-31	22/10/2011	0	0.06	2.56799E-16	13/5/2012	0	0.02	7.14064E-16	16/1/2013	0.020642227	0.022373791	5.54377E-06
13/6/2010	0	0.203671946	4.30545E-30	23/10/2011	0	0.06	1.14695E-15	14/5/2012	0.01	0.03	1.15488E-15	17/1/2013	-0.024883916	-0.002510125	4.95371E-06
14/6/2010	0.006877464	0.210549441	3.33266E-29	24/10/2011	0	0.06	5.04622E-15	15/5/2012	0.01	0.04	1.81499E-15	18/1/2013	-0.018473877	-0.020984002	4.54745E-06
15/6/2010	0.0059256	0.2164750	2.45774E-28	25/10/201	0	0.05	2.18605E-14	16/5/2012	-0.01	0.03	5.51175E-15	19/1/2013	0	-0.0209840	3.92598E-06

	49	59		1										02	
16/6/2010	-0.004364488	0.212110571	1.11555E-27	26/10/2011	-0.01	0.04	8.14592E-14	17/5/2012	0	0.03	2.30677E-14	20/1/2013	0	-0.020984002	3.20247E-06
17/6/2010	-0.010733232	0.201377339	2.57253E-27	27/10/2011	0	0.04	2.98999E-13	18/5/2012	0	0.03	6.85562E-14	21/1/2013	-0.005223149	-0.026207151	2.54759E-06
18/6/2010	-0.020091729	0.18128561	6.48736E-27	28/10/2011	0	0.04	8.05579E-13	19/5/2012	0	0.03	2.01038E-13	22/1/2013	0.021621073	-0.004586078	1.96512E-06
19/6/2010	0	0.18128561	3.34898E-26	29/10/2011	0	0.04	2.13958E-12	20/5/2012	0	0.03	5.81467E-13	23/1/2013	-0.00279502	-0.007381098	1.43972E-06
20/6/2010	0	0.18128561	4.64834E-25	30/10/2011	0	0.04	5.59855E-12	21/5/2012	0.01	0.04	1.65804E-12	24/1/2013	0.009091788	0.00171069	1.06138E-06
21/6/2010	0.004983036	0.186268646	6.31351E-24	31/10/2011	-0.01	0.03	1.44232E-11	22/5/2012	-0.01	0.03	4.65882E-12	25/1/2013	0.00404744	0.00575813	7.33032E-07
22/6/2010	-0.001065533	0.185203116	8.38199E-23	1/11/2011	0	0.04	3.65558E-11	23/5/2012	0	0.03	1.82617E-11	26/1/2013	0	0.00575813	4.81489E-07
23/6/2010	-0.001490154	0.183712962	9.20752E-22	2/11/2011	-0.03	0	9.10685E-11	24/5/2012	0.01	0.04	4.99874E-11	27/1/2013	0	0.00575813	2.89555E-07
24/6/2010	-0.005314061	0.178398901	1.01837E-20	3/11/2011	0.01	0.02	1.39965E-10	25/5/2012	0.01	0.05	1.34632E-10	28/1/2013	0.010391857	0.016149988	1.5085E-07
25/6/2010	-0.001480072	0.176918829	1.15002E-19	4/11/2011	0	0.02	4.32036E-11	26/5/2012	0	0.05	5.05732E-10	29/1/2013	0.00301117	0.019161158	6.30409E-08
26/6/2010	0	0.176918829	1.47502E-18	5/11/2011	0	0.02	2.22184E-11	27/5/2012	0	0.05	2.0459E-09	30/1/2013	-0.001461419	0.017699739	1.92793E-08
27/6/2010	0	0.176918829	1.89966E-17	6/11/2011	0.02	0.03	7.16843E-12	28/5/2012	0.01	0.07	8.08488E-09	31/1/2013	-0.006907287	0.010792453	3.05344E-09
28/6/2010	0.011588366	0.188507196	2.3762E-16	7/11/2011	0.02	0.05	8.29235E-14	29/5/2012	-0.01	0.05	2.68803E-08	1/2/2013	1.00952381	1.020316262	8.34481E-11
29/6/2010	-0.003803807	0.184703307	2.88112E-15	8/11/2011	0.01	0.06	2.75778E-15	30/5/2012	0	0.05	8.54556E-08	2/2/2013	0	1.020316262	7.99629E-31

	88														
30/6/2010	0.009473684	0.194176991	2.23698E-14	9/11/2011	0.01	0.07	2.38347E-15	31/5/2012	0	0.05	3.15013E-07	3/2/2013	0	1.020316262	1.16347E-28
1/7/2010	-0.009680599	0.184496392	1.90921E-13	10/11/2011	0	0.07	1.03271E-14	1/6/2012	0	0.05	1.12765E-06	4/2/2013	0.009433962	1.029750225	1.61455E-26
2/7/2010	-0.010210626	0.174285766	7.88045E-13	11/11/2011	0	0.07	1.26868E-13	2/6/2012	0	0.05	3.91253E-06	5/2/2013	-0.002684564	1.027065661	2.12093E-24
3/7/2010	0	0.174285766	5.02322E-12	12/11/2011	0	0.07	1.50551E-12	3/6/2012	0	0.05	1.31284E-05	6/2/2013	0.001600528	1.028666188	3.98087E-22
4/7/2010	0	0.174285766	5.01728E-11	13/11/2011	0.02	0.09	1.72143E-11	4/6/2012	-0.01	0.04	4.24913E-05	7/2/2013	0.001288864	1.029955052	7.10353E-20
5/7/2010	0.013585666	0.187871432	4.58132E-10	14/11/2011	0	0.09	1.89108E-10	5/6/2012	-0.02	0.02	0.00013223	8/2/2013	-0.002027797	1.027927255	1.22318E-17
6/7/2010	-0.012848951	0.175022481	3.68386E-09	15/11/2011	-0.01	0.08	8.00243E-10	6/6/2012	0	0.02	0.000400152	9/2/2013	0	1.027927255	1.98162E-15
7/7/2010	-0.020855277	0.154167204	3.2248E-09	16/11/2011	-0.01	0.07	1.75183E-09	7/6/2012	0	0.02	0.000749187	10/2/2013	0	1.027927255	3.03388E-13
8/7/2010	-0.014452284	0.139714922	2.99575E-10	17/11/2011	0	0.07	1.51319E-08	8/6/2012	0	0.02	0.001373193	12/2/2013	-0.016849749	1.011077507	4.33035E-11
9/7/2010	0.001574969	0.141289889	7.3912E-12	18/11/2011	0	0.07	2.4038E-07	9/6/2012	0	0.02		13/2/2013	0.006619061	1.017696567	5.69852E-09
10/7/2010	0	0.141289889	1.29847E-09	19/11/2011	0	0.07	3.56083E-06	10/6/2012	0	0.02		14/2/2013	0.009132422	1.026828987	2.91751E-07
11/7/2010	0	0.141289889	1.75681E-07	20/11/2011	0	0.07	4.86478E-05	11/6/2012	-0.01	0.01		15/2/2013	0.017488272	1.044317259	1.57543E-05
12/7/2010	-0.001998107	0.139291782	2.04962E-05	21/11/2011	0	0.08	0.000603851	12/6/2012	0.01	0.02		16/2/2013	0	1.044317259	1.34
13/7/2010	-0.001049538	0.138242244	0.001203733	22/11/2011	-0.02	0.06	0.004926229	13/6/2012	0.02	0.04		17/2/2013	0	1.044317259	1.565454

Table 4.21: Longitudinal Analysis KCB Stock

KCB																							
1998 BOMBLAST				2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACKS				2012 BELLA VISTA ATTACK					2013 ALSHABAAB ATTACK		
DATE	MAAR	CAR	T-VALUE	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
7/7/1998	0.004	0.004	5.2E-16	10/30/2002	0.08	0.08	0.0001	13/05/2010	0.02	0.02	0.155	23/09/2011	0	0	5.14E-11	14/04/2012	0	0	2.6E-08	18/12/2012	0	0	9.67E-12
7/8/1998	-0.01	-0.006	3.4E-16	10/31/2002	-0.03	0.06	0.0001	14/05/2010	0	0.02	0.155	24/09/2011	0	0	4.44E-11	15/04/2012	0	0	2.5E-08	19/12/2012	0	0	8.06E-12
7/9/1998	9E-04	-0.005	3.7E-16	11/1/2002	0.03	0.09	0.0001	15/05/2010	0	0.02	0.145	25/09/2011	0	0	3.8E-11	16/04/2012	0	0	2.3E-08	20/12/2012	0	0	6.64E-12
7/10/1998	0	-0.005	9E-17	11/2/2002	0	0.09	0.0002	16/05/2010	0.03	0.04	0.135	26/09/2011	-0.03	-0.03	3.22E-11	17/04/2012	0	0	2.2E-08	21/12/2012	0.01	0.01	5.41E-12
7/11/1998	0	-0.005	2.2E-17	11/3/2002	0	0.09	0.0002	17/05/2010	0.03	0.08	0.131	27/09/2011	0	-0.03	2.71E-11	18/04/2012	-0.01	-0.01	2E-08	22/12/2012	0	0.01	4.34E-12
7/12/1998	0.009	0.004	4.8E-18	11/4/2002	-0.01	0.08	0.0003	18/05/2010	0	0.08	0.109	28/09/2011	-0.02	-0.04	3.78E-11	19/04/2012	0.01	0	1.9E-08	23/12/2012	0	0.01	4.85E-12
7/13/1998	0.005	0.01	8.4E-19	11/5/2002	0.04	0.11	0.0004	19/05/2010	-0.05	0.03	0.077	29/09/2011	0	-0.04	4.52E-11	20/04/2012	0	0	2.3E-08	24/12/2012	0.01	0.01	5.39E-12
7/14/1998	5E-04	0.01	7.8E-19	11/6/2002	0.08	0.19	0.0006	20/05/2010	-0.01	0.02	0.052	30/09/2011	0	-0.04	7.19E-11	21/04/2012	0	0	2.1E-08	25/12/2012	0	0.01	4.2E-12
7/15/1998	0.002	0.013	1.4E-18	11/7/2002	0.03	0.22	0.0008	21/05/2010	0	0.02	0.045	1/10/2011	0	-0.04	1.14E-10	22/04/2012	0	0	2E-08	26/12/2012	0	0.01	4.6E-12
7/16/1998	-0	0.011	2.6E-18	11/8/2002	-0.02	0.2	0.0013	22/05/2010	0	0.02	0.041	2/10/2011	-0.01	-0.05	1.79E-10	23/04/2012	0	0	1.8E-08	27/12/2012	-0.01	0.01	5.01E-12
7/17/1998	0	0.011	6E-18	11/9/2002	0	0.2	0.0022	23/05/2010	0.01	0.03	0.037	3/10/2011	-0.01	-0.06	2.82E-10	24/04/2012	0	0	1.6E-08	28/12/2012	0	0.01	7.3E-12
7/18/1998	0	0.011	1.2E-17	11/10/2002	0	0.2	0.0037	24/05/2010	0	0.03	0.033	4/10/2011	0	-0.06	4.93E-10	25/04/2012	0	0	1.5E-08	29/12/2012	0	0.01	7.87E-12
7/19/1998	-0	0.006	2.3E-17	11/11/2002	-0.02	0.18	0.0061	25/05/2010	0.03	0.05	0.028	5/10/2011	-0.01	-0.07	9.46E-10	26/04/2012	-0.03	-0.03	1.3E-08	30/12/2012	0	0.01	8.42E-12
7/20/1998	0.013	0.019	4.5E-17	11/12/2002	-0.03	0.15	0.0097	26/05/2010	0.01	0.07	0.025	6/10/2011	0	-0.07	1.8E-09	27/04/2012	-0.02	-0.05	1.2E-08	31/12/2012	0	0.01	8.92E-12
7/21/1998	-0.01	0.013	5E-17	11/13/2002	-0.02	0.13	0.015	27/05/2010	0	0.06	0.017	7/10/2011	0	-0.07	3.67E-09	28/04/2012	0	-0.05	2.3E-08	1/1/2013	0	0.01	9.38E-12
7/22/1998	6E-04	0.014	1.6E-16	11/14/2002	-0.01	0.12	0.0216	28/05/2010	0	0.06	0.011	8/10/2011	0	-0.07	7.41E-09	29/04/2012	0	-0.05	5.2E-08	2/1/2013	0.01	0.02	9.75E-12
7/23/1998	0.013	0.027	3.8E-16	11/15/2002	-0.09	0.02	0.0294	29/05/2010	0	0.06	0.007	9/10/2011	-0.01	-0.08	1.48E-08	30/04/2012	0	-0.05	1.2E-07	3/1/2013	0.02	0.04	1E-11
7/24/1998	0	0.027	9.2E-16	11/16/2002	0	0.02	0.0386	30/05/2010	-0.03	0.03	0.004	10/10/2011	-0.01	-0.09	2.94E-08	1/5/2012	0	-0.05	2.6E-07	4/1/2013	-0.01	0.02	1.42E-11
7/25/1998	0	0.027	2.9E-15	11/17/2002	0	0.02	0.0408	31/05/2010	0	0.03	0.003	11/10/2011	-0.02	-0.11	6.14E-08	2/5/2012	0.01	-0.04	5.6E-07	5/1/2013	0	0.02	2.59E-11
7/26/1998	0.004	0.031	9.3E-15	11/18/2002	0.02	0.04	0.0432	1/6/2010	0.01	0.04	0.002	12/10/2011	-0.01	-0.11	1.33E-07	3/5/2012	0.03	-0.01	1.2E-06	6/1/2013	0	0.02	3.62E-11
7/27/1998	-0.01	0.022	2.9E-14	11/19/2002	0.02	0.06	0.0457	2/6/2010	-0.01	0.03	0.001	13/10/2011	-0.02	-0.13	2.94E-07	4/5/2012	0.02	0.01	2.5E-06	7/1/2013	0	0.02	5.03E-11
7/28/1998	0.007	0.029	7.2E-14	11/20/2002	-0.11	-0.06	0.0502	3/6/2010	0.01	0.04	1E-03	14/10/2011	0	-0.13	6.57E-07	5/5/2012	0	0.01	3E-06	8/1/2013	-0.01	0.01	6.94E-11
7/29/1998	-0	0.025	2.4E-13	11/21/2002	0.02	-0.04	0.057	4/6/2010	0	0.04	7E-04	15/10/2011	0	-0.13	1.46E-06	6/5/2012	0	0.01	2E-06	9/1/2013	-0.01	-0.01	9.52E-11

7/30/1998	-0.01	0.02	6.3E-13	11/22/2002	0.01	-0.03	0.0493	5/6/2010	0	0.04	4E-04	16/10/2011	-0.02	-0.15	3.22E-06	7/5/2012	-0.01	0	1.3E-06	10/1/2013	0.02	0.01	6.19E-11
7/31/1998	0	0.02	2E-12	11/23/2002	0	-0.03	0.0448	6/6/2010	0	0.04	3E-04	17/10/2011	0	-0.15	7.01E-06	8/5/2012	-0.01	-0.01	8.3E-07	11/1/2013	0.03	0.04	2.28E-11
8/1/1998	0	0.02	6.1E-12	11/24/2002	0	-0.03	0.0414	7/6/2010	0	0.04	2E-04	18/10/2011	0	-0.15	1.44E-05	9/5/2012	0	-0.01	7.5E-07	12/1/2013	0	0.04	2.03E-11
8/2/1998	0.006	0.025	1.9E-11	11/25/2002	0.06	0.03	0.0383	8/6/2010	0	0.04	8E-05	19/10/2011	0	-0.15	2.9E-05	10/5/2012	0	-0.01	9.2E-07	13/1/2013	0	0.04	4.63E-11
8/3/1998	-0.01	0.014	5.7E-11	11/26/2002	-0.01	0.01	0.0353	9/6/2010	0.01	0.05	4E-05	20/10/2011	0	-0.15	5.69E-05	11/5/2012	0.01	0	1.1E-06	14/1/2013	0	0.04	1.05E-10
8/4/1998	0.015	0.029	1.7E-10	11/27/2002	0.02	0.04	0.0379	10/6/2010	0	0.05	2E-05	21/10/2011	0	-0.15	0.000108	12/5/2012	0	0	1.4E-06	15/1/2013	0.02	0.06	2.34E-10
8/5/1998	0.002	0.031	4E-10	11/28/2002	-0.01	0.03	0.0392	11/6/2010	0	0.05	7E-06	22/10/2011	0	-0.15	0.000196	13/5/2012	0	0	1.2E-06	16/1/2013	-0.01	0.04	5.18E-10
8/6/1998	-0.01	0.025	1E-09	11/29/2002	-0.01	0.02	0.0431	12/6/2010	0	0.05	2E-06	23/10/2011	0.01	-0.15	0.000333	14/5/2012	0.02	0.02	1.1E-06	17/1/2013	-0.05	0	1.35E-09
8/7/1998	**0**	0.025	2.3E-09	11/30/2002	0	0.02	0.0467	13/6/2010	-0.01	0.04	5E-07	24/10/2011	0.01	-0.14	0.00043	15/5/2012	0	0.02	9.5E-07	18/1/2013	0.01	0.01	3.45E-09
8/8/1998	0	0.025	6.5E-09	12/1/2002	0	0.02	0.0492	14/6/2010	0	0.04	8E-08	25/10/2011	0.05	-0.09	0.000429	16/5/2012	0.01	0.03	3E-07	19/1/2013	0	0.01	2.02E-09
8/9/1998	0.01	0.035	1.8E-08	12/2/2002	-0.01	0.01	0.0518	15/6/2010	-0.01	0.03	1E-08	26/10/2011	0	-0.08	0.000194	17/5/2012	0	0.03	8E-08	20/1/2013	0	0.01	1.7E-09
8/10/1998	0.004	0.039	4.9E-08	12/3/2002	-0.07	-0.06	0.0545	16/6/2010	-0.02	0.01	1E-09	27/10/2011	0.05	-0.03	0.000266	18/5/2012	-0.03	0	6.4E-09	21/1/2013	0	0.01	1.36E-09
8/11/1998	-0.01	0.034	6E-08	12/4/2002	-0	-0.06	0.0555	17/6/2010	-0.01	0	1E-10	28/10/2011	0	-0.03	0.000234	19/5/2012	0	0	1.8E-10	22/1/2013	0.01	0.02	1.01E-09
8/12/1998	-0.01	0.022	1.9E-08	12/5/2002	-0	-0.06	0.0476	18/6/2010	0	0	2E-11	29/10/2011	0	-0.03	0.000489	20/5/2012	0	0	7.3E-11	23/1/2013	0.01	0.03	6.86E-10
8/13/1998	-0.01	0.015	5.2E-09	12/6/2002	0	-0.06	0.0402	19/6/2010	0	0	3E-12	30/10/2011	0.03	0	0.001007	21/5/2012	-0.01	-0.01	2.4E-11	24/1/2013	0	0.03	6.98E-10
8/14/1998	0	0.015	9.5E-09	12/7/2002	0	-0.06	0.0332	20/6/2010	-0.05	-0.05	2E-13	31/10/2011	-0.01	-0.01	0.002034	22/5/2012	-0.07	-0.08	5.3E-12	25/1/2013	0.01	0.04	1.05E-09
8/15/1998	0	0.015	3.1E-08	12/8/2002	0	-0.06	0.0271	21/6/2010	0	-0.05	2E-15	1/11/2011	0.02	0.01	0.001977	23/5/2012	0.01	-0.07	2.9E-12	26/1/2013	0	0.04	1.53E-09
8/16/1998	-0	0.013	9.6E-08	12/9/2002	0	-0.06	0.0219	22/6/2010	0	-0.06	3E-15	2/11/2011	-0.04	-0.03	0.00273	24/5/2012	0	-0.07	1.2E-12	27/1/2013	0	0.04	3.14E-09
8/17/1998	-0	0.012	3E-07	12/10/2002	-0.01	-0.07	0.0174	23/6/2010	-0.02	-0.07	9E-15	3/11/2011	0	-0.03	0.001636	25/5/2012	0.01	-0.06	8.7E-13	28/1/2013	0.01	0.05	6.34E-09
8/18/1998	-0.01	0.007	9.2E-07	12/11/2002	-0.02	-0.09	0.0136	24/6/2010	0	-0.07	1E-14	4/11/2011	0	-0.03	0.003366	26/5/2012	0	-0.06	2.1E-13	29/1/2013	0	0.05	1.25E-08
8/19/1998	-0	0.003	2.7E-06	12/12/2002	0	-0.09	0.01	25/6/2010	0	-0.07	5E-14	5/11/2011	0	-0.03	0.006778	27/5/2012	0	-0.06	1.2E-13	30/1/2013	0	0.05	3.28E-08
8/20/1998	8E-04	0.004	5.6E-06	12/13/2002	-0.02	-0.11	0.0064	26/6/2010	0	-0.07	2E-13	6/11/2011	0.01	-0.02	0.013346	28/5/2012	0.02	-0.04	1.4E-14	31/1/2013	-0.01	0.04	8.43E-08
8/21/1998	0	0.004	6.8E-06	12/14/2002	0	-0.11	0.0038	27/6/2010	0	-0.08	8E-13	7/11/2011	0.02	0	0.025695	29/5/2012	0	-0.04	1.1E-18	1/2/2013	0	0.04	2.12E-07
8/22/1998	0	0.004	9.4E-06	12/15/2002	0	-0.11	0.0018	28/6/2010	0	-0.08	5E-12	8/11/2011	0	0.01	0.042275	30/5/2012	0	-0.04	1E-18	2/2/2013	0	0.04	3.83E-07
8/23/1998	0.001	0.006	1.2E-05	12/16/2002	-0.01	-0.13	0.0007	29/6/2010	0	-0.07	3E-11	9/11/2011	0	0.01	0.029023	31/5/2012	0.01	-0.03	1.4E-19	3/2/2013	0	0.04	6.63E-07
8/24/1998	0.008	0.013	1.6E-05	12/17/2002	0.08	-0.04	0.0002	30/6/2010	0.01	-0.07	1E-10	10/11/2011	0	0.01	0.01874	1/6/2012	0	-0.03	1E-231	4/2/2013	0	0.04	1.09E-06
8/25/1998	-0.01	0.004	2.5E-05	12/18/2002	0.08	0.04	1E-05	1/7/2010	0	-0.07	8E-10	11/11/2011	0	0.01	0.0111	2/6/2012	0	-0.03	2E-216	5/2/2013	0.01	0.05	1.65E-06
8/26/1998	0.001	0.006	8.2E-05	12/19/2002	0.06	0.1	9E-07	2/7/2010	0	-0.07	3E-09	12/11/2011	0	0.01	0.005758	3/6/2012	0	-0.03	1E-202	6/2/2013	0.01	0.06	2.23E-06

8/27/1998	8E-04	0.007	0.0001	12/20/2002	0.07	0.17	1E-07	3/7/2010	0	-0.07	8E-09	13/11/2011	0	0.01	0.002366	4/6/2012	0	-0.03	3E-187	7/2/2013	0	0.06	4.18E-06
8/28/1998	0	0.007	0.00016	12/21/2002	0	0.17	5E-08	4/7/2010	-0.02	-0.08	2E-08	14/11/2011	-0.03	-0.02	0.000585	5/6/2012	0	-0.03	1E-171	8/2/2013	0	0.06	1.08E-05
8/29/1998	0	0.007	0.00027	12/22/2002	0	0.17	1E-07	5/7/2010	0	-0.09	6E-09	15/11/2011	0.01	-0.01	2.18E-05	6/6/2012	0	-0.03	5E-158	9/2/2013	0	0.06	2.56E-05
8/30/1998	0.002	0.008	0.00044	12/23/2002	0.08	0.25	1E-07	6/7/2010	0	-0.09	4E-08	16/11/2011	-0.01	-0.02	9.03E-05	7/6/2012	0	-0.03	2E-142	10/2/2013	0	0.06	5.31E-05
8/31/1998	0.003	0.011	0.00065	12/24/2002	0.03	0.28	7E-10	7/7/2010	0	-0.09	2E-07	17/11/2011	0	-0.02	9.07E-05	8/6/2012	0	-0.03	4E-129	12/2/2013	0.06	0.12	8.07E-05
9/1/1998	0.019	0.03	0.00113	12/25/2002	0	0.28	2E-29	8/7/2010	-0.02	-0.11	1E-06	18/11/2011	0	-0.02	0.000373	9/6/2012	0	-0.03		13/2/2013	0	0.13	2.11E-05
9/2/1998	-0.01	0.018	0.00274	12/26/2002	0	0.28	1E-23	9/7/2010	0	-0.11	6E-07	19/11/2011	0	-0.02	0.001445	10/6/2012	0	-0.03		14/2/2013	-0.03	0.1	0.000191
9/3/1998	-0.01	0.013	0.00078	12/27/2002	0	0.28	6E-18	10/7/2010	0	-0.11	2E-05	20/11/2011	0	-0.02	0.005239	11/6/2012	0	-0.03		15/2/2013	0.01	0.11	0.000488
9/4/1998	0	0.013	0.00078	12/28/2002	0	0.28	3E-12	11/7/2010	0	-0.12	4E-04	21/11/2011	-0.01	-0.03	0.017549	12/6/2012	0	-0.03		16/2/2013	0	0.11	
9/5/1998	0	0.013	5.6E-09	12/29/2002	0	0.28	1E-06	12/7/2010	0.01	-0.11	0.014	22/11/2011	-0.01	-0.04	0.045167	13/6/2012	0	-0.03		17/2/2013	0	0.11	

Table 4.22: Longitudinal Analysis Kenya Airways Stock

KQ																							
1998 BOMBLAST				2002 KIKAMBALA ATTACK				2010 UHURU PARK ATTACK				2011 ALSHABAAB ATTACK				2012 BELLA VISTA ATTACK				2013 ALSHABAAB ATTACK			
DATE	MAAR	CAR	T-VALUE	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES	DATE	MAAR	CAR	T-VALUES
7/7/1998	0.010432	0.010432	0.04496244	10/30/2002	-0.011007196	-0.01	2.56708E-28	14/05/2010	-0.026535337	-0.03	2.2705E-14	25/10/2011	-0.035095003	-0.04	3.83067E-30	14/04/2012	0	0	1.44949E-15	18/12/2012	0.021216969	0.02	0.0002183933
7/8/1998	-0.00872	0.00171	0.04496351 2	10/31/2002	-0.026537931	-0.036537931	2.51614E-29	15/05/2010	0	-0.03	1.75812E-14	26/10/2011	-0.028894448	-0.068894448	2.4232E-31	15/04/2012	0	0	1.01733E-15	19/12/2012	-0.004497751	0.015502249	0.0002159971
7/9/1998	0.000865	0.002575	0.04285947 9	11/1/2002	-0.001863198	-0.038401129	2.84154E-30	16/05/2010	0	-0.03	1.92424E-14	27/10/2011	0.003079115	-0.065815334	1.20831E-32	16/04/2012	-0.003023387	-0.003023387	6.96772E-16	20/12/2012	0.006958713	0.022460962	0.0002193232
7/10/1998	0	0.002575	0.04252661 9	11/2/2002	0	-0.038401	8.05026E-	17/05/2010	-0.006382 9	-0.036382 9	2.0919E-14	28/10/2011	0.016867755	-0.048947 5	4.12781E-34	17/04/2012	-0.003347 6	-0.006371 0	4.64411E-16	21/12/2012	-0.005887 4	0.016573479	0.0002214 05

						29	31		94	94				79			16	03			83		
7/11/1998	0	0.002575	0.04202817	11/3/2002	0	-0.03840112 9	1.99744E-31	18/05/2010	-0.00220118 9	-0.03858418 3	2.25773E-14	29/10/2011	0	-0.04894757 9	5.55762E-36	18/04/2012	-0.00747364 2	-0.01384464 6	2.97545E-16	22/12/2012	0	0.01657347 9	0.0002254 07
7/12/1998	0.009458	0.012033	0.04153388	11/4/2002	-0.01435034 5	-0.05275147 4	3.80759E-32	19/05/2010	0.02642462 6	-0.01215955 7	2.62061E-14	30/10/2011	0	-0.04894757 9	1.3533E-38	19/04/2012	0.02710387 4	0.01325928	1.82191E-16	23/12/2012	0	0.01657347 9	0.0002277 14
7/13/1998	0.005253	0.017286	0.04104349 4	11/5/2002	-0.01319535 7	-0.06594683 1	5.15796E-33	20/05/2010	0.01763887 1	0.00547931 4	3.10507E-14	31/10/2011	-0.00460829 5	-0.05355587 4	2.00835E-42	20/04/2012	-0.00072095	0.01253823 3	1.04574E-16	24/12/2012	-0.00116851 97	0.01540488 2	0.0002299 67
7/14/1998	0.013018	0.030304	0.03877652 7	11/6/2002	-0.01932211 6	-0.08526894 7	1.09748E-33	21/05/2010	-0.00151941 27	0.00395987	2.55019E-14	1/11/2011	-1.01045248 2	-1.06400835 6	3.53E-49	21/04/2012	0	0.01253823 3	6.27086E-17	25/12/2012	0	0.01540488 2	0.0002321 57
7/15/1998	-0.01007	0.020238	0.03566113	11/7/2002	-0.00723753 3	-0.09250648	3.67125E-34	22/05/2010	0	0.00395987	1.54209E-14	2/11/2011	0.0013611	-1.06264725 6	2.97462E-77	22/04/2012	0	0.01253823 3	3.57981E-17	26/12/2012	0	0.01540488 2	0.0002339 29
7/16/1998	-0.00167	0.018564	0.03055559 2	11/8/2002	-0.00667323 4	-0.09917971 4	2.79001E-34	23/05/2010	0	0.00395987	9.1796E-15	3/11/2011	0.02255993 2	-1.04008732 4	8.50142E-76	23/04/2012	-0.00968117 5	0.00285705 9	1.93633E-17	27/12/2012	0.00374417 1	0.01914905 3	0.0002356 16
7/17/1998	0	0.018564	0.02752626 2	11/9/2002	0	-0.09917971 4	2.67008E-34	24/05/2010	0.00513576 7	0.00909565 4	5.21485E-15	4/11/2011	-0.02252951 8	-1.06261684 2	2.32177E-74	24/04/2012	0.00111231 87	0.00396946	9.8393E-18	28/12/2012	0.00854640 2	0.02769545 5	0.0002372 09
7/18/1998	0	0.018564	0.02496390 2	11/10/2002	0	-0.09917971 4	3.16798E-34	25/05/2010	-0.00830976	0.00078587 8	2.80642E-15	5/11/2011	0	-1.06261684 2	3.17434E-73	25/04/2012	0.00872802	0.01269746 5	4.46845E-18	29/12/2012	0	0.02769545 5	0.0002398 5
7/19/1998	0.002908	0.021472	0.02259096 8	11/11/2002	-0.01911742 6	-0.11829714	3.40716E-34	26/05/2010	-0.03697381 4	-0.03618793 6	1.2738E-15	6/11/2011	0	-1.06261684 2	8.29422E-72	26/04/2012	0.01494443 7	0.02764190 3	1.86113E-18	30/12/2012	0	0.02769545 5	0.0002450 66
7/20/1	0.0174	0.038	0.0203977	11/12/2	-0.04	-0.167	3.25777	27/05/2	-0.005	-0.042	6.35482	7/11/	0.0130273	-1.049	2.12561	27/04/20	-0.001	0.0262468	7.23657	31/12	0.0124892	0.0401847	0.000

998	65	937	5	002	9489358	786497	E-34	010	956202	144137	E-16	2011	29	589513	E-70	12	395019	83	E-19	/2012	73	28	25028
7/21/1998	0.006742	0.045678	0.018061743	11/13/2002	-0.00336385 7	-0.17115035 5	7.05226E-34	28/05/2010	0.034829632	-0.00731450 6	6.1278E-16	8/11/2011	-0.01097306 6	-1.06056256 79	5.33637E-69	28/04/2012	0	0.026246883	2.6676E-19	1/1/2013	0	0.040184728	0.00025548
7/22/1998	0.000604	0.046282	0.014255262	11/14/2002	0.022837808	-0.14831254 6	5.24743E-33	29/05/2010	0	-0.00731450 6	6.39298E-16	9/11/2011	-0.00124257 9	-1.06180515 8	8.85389E-68	29/04/2012	0	0.026246883	8.45303E-20	2/1/2013	-0.01604580 7	0.024138921	0.0002648 23
7/23/1998	-0.00038	0.045898	0.010587235	11/15/2002	-0.03374991 7	-0.18206246 3	3.96037E-32	30/05/2010	0	-0.00731450 6	3.23597E-16	10/11/2011	-0.02178244 5	-1.08358760 3	1.98817E-66	30/04/2012	0.000771156	0.027018 04	2.23345E-20	3/1/2013	-0.00101737 98	0.023121523	0.0002743 69
7/24/1998	0	0.045898	0.007678758	11/16/2002	0	-0.18206246 3	2.16001E-31	31/05/2010	0.003974427	-0.00334007 8	1.49137E-16	11/11/2011	-0.01121827 7	-1.09480588	4.49401E-65	1/5/2012	0	0.027018 04	4.67269E-21	4/1/2013	-0.02161373 7	0.001507786	0.0002783 46
7/25/1998	0	0.045898	0.005469209	11/17/2002	0	-0.18206246 3	1.65461E-30	1/6/2010	0	-0.00334007 8	6.12648E-17	12/11/2011	0	-1.09480588	1.61583E-63	2/5/2012	-0.001950332	0.025067708	7.21721E-22	5/1/2013	0	0.001507786	0.0002818 23
7/26/1998	-0.01439	0.031511	0.003807299	11/18/2002	-0.00996573 3	-0.19202811 96	1.25318E-29	2/6/2010	0.018884475	0.015544397	1.9425E-17	13/11/2011	0	-1.09480588	6.62283E-62	3/5/2012	-0.014656907	0.010410801	7.2957E-23	6/1/2013	0	0.001507786	0.0002771 47
7/27/1998	0.028101	0.059612	0.002584364	11/19/2002	0.016344372	-0.17568382 4	9.38198E-29	3/6/2010	-0.00433604 3	0.011208354	4.9981E-18	14/11/2011	-0.01525029 3	-1.11005617 3	2.68285E-60	4/5/2012	-0.011590877	-0.001180076	3.90618E-24	7/1/2013	-0.00701381 8	-0.005506032	0.0002722 46
7/28/1998	-0.02881	0.030806	0.001965328	11/20/2002	-0.04357518	-0.21925900 4	6.69526E-28	4/6/2010	-0.04726991 4	-0.036061 56	4.58539E-19	15/11/2011	-0.03070524 2	-1.14076141 4	1.07382E-58	5/5/2012	0	-0.001180076	6.49837E-26	8/1/2013	-0.00054871 1	-0.006054743	0.0002671 07
7/29/1998	0.001761	0.032568	0.0010878	11/21/2002	0.000899017	-0.21835998 7	4.86094E-27	5/6/2010	0	-0.036061 56	2.65174E-20	16/11/2011	-0.01024807	-1.15100948 5	4.61288E-57	6/5/2012	0	-0.001180076	1.30034E-28	9/1/2013	-0.03464948 6	-0.040704229	0.0002592 2
7/30/1998	0.013208	0.045776	0.0007972	11/22/2002	0.00781150	-0.21054 84	2.27187E-	6/6/2010	0	-0.0360615	7.22149E-21	17/11/2011	-0.02586632	-1.17687 27	1.58431E-55	7/5/2012	0.9898305	0.9886504	2.10971E-33	10/1/2013	0.0134918	-0.027212 3	0.0002509 6

			88		3	84	26			6			29	13			08	32			38	91	2
7/31/1998	0	0.045776	0.00056295	11/23/2002	0	-0.21054884	1.04583E-25	7/6/2010	-0.01765756	-0.05371916	1.35826E-21	18/11/2011	-0.02022460 7	-1.19709732	4.44637E-54	8/5/2012	-0.01712328 8	0.971527145	1.94535E-53	11/1/2013	-0.03687541 3	-0.06408780 4	0.00023082 5
8/1/1998	0	0.045776	0.00033288	11/24/2002	0	-0.21054884	5.51191E-25	8/6/2010	-0.02851728 8	-0.08223650 3	1.47735E-22	19/11/2011	0	-1.19709732	5.73581E-53	9/5/2012	0.006968641	0.978495786	5.87157E-52	12/1/2013	0	-0.06408780 4	0.00021581 3
8/2/1998	-0.05495	-0.00918	0.00018282 3	11/25/2002	0.00111074 8	-0.20943773 6	2.82551E-24	9/6/2010	-0.00507861	-0.08731511 3	2.29737E-23	20/11/2011	0	-1.19709732	2.54743E-52	10/5/2012	2.65863E-06	0.978498444	1.37628E-50	13/1/2013	0	-0.06408780 4	0.00019025 3
8/3/1998	0.000694	-0.00848	9.59529E-05	11/26/2002	0.02264613 5	-0.18679160 2	1.40486E-23	10/6/2010	0.00634221 7	-0.08097289 7	1.11838E-23	21/11/2011	0.006776218	-1.19032110 2	7.5997E-52	11/5/2012	0.012516942	0.991015387	3.55E-49	14/1/2013	-0.00657331	-0.07066113	0.00016676 1
8/4/1998	0.001757	-0.00673	0.00010212 8	11/27/2002	0.00700200 9	-0.17978959 2	6.91979E-23	11/6/2010	-0.01423652	-0.09520948	5.20142E-24	22/11/2011	0.031231735	-1.15908936 6	1.2436E-51	12/5/2012	0	0.991015387	9.00817E-48	15/1/2013	-0.01479174 8	-0.08545286 1	0.00014522 7
8/5/1998	0.002102	-0.00462	0.00010769 6	11/28/2002	0.00355635	-0.17623324 3	4.65497E-22	12/6/2010	0	-0.09520948	9.80074E-25	23/11/2011	0.0321489	-1.12694046 6	1.47777E-51	13/5/2012	0	0.991015387	2.63823E-46	16/1/2013	-0.01745301 1	-0.10290587 2	0.00012418 2
8/6/1998	-0.0063	-0.01092	0.00011119	11/29/2002	-0.02048370 8	-0.19671695	3.21601E-21	13/6/2010	0	-0.09520948	2.7112E-25	24/11/2011	0.0411173	-1.08582316 7	1.06208E-50	14/5/2012	-0.00662758 1	0.984387806	7.61328E-45	17/1/2013	-0.00188586 7	-0.10479173 9	0.00010256 3
8/7/1998	**0**	-0.01092	0.00011162 9	11/30/2002	0	-0.19671695	2.21053E-20	14/6/2010	-0.01345272 7	-0.10866222 1	3.30378E-26	25/11/2011	0.044395838	-1.04142732 8	3.64625E-49	15/5/2012	0.000742 46	0.985130265	2.16376E-43	18/1/2013	0.005282555	-0.09950918 4	8.10491E-05
8/8/1998	0	-0.01092	0.00012018 4	12/1/2002	0	-0.19671695	1.27464E-19	15/6/2010	-0.01934250 3	-0.12800472 4	8.32724E-28	26/11/2011	0	-1.04142732 8	2.15997E-47	16/5/2012	0.004001532	0.989131798	5.60088E-42	19/1/2013	0	-0.09950918 4	6.27489E-05
8/9/1998	0.002987	-0.00794	0.00012909 9	12/2/2002	-0.02440048 1	-0.22111743 1	7.18425E-19	16/6/2010	-0.02446499	-0.15246971 5	1.05067E-29	27/11/2011	0	-1.04142732 8	2.50117E-46	17/5/2012	0.077878648	1.067010446	1.43815E-40	20/1/2013	0	-0.09950918 4	4.81162E-05

8/10/1998	0.02239	0.014453	0.00013833	12/3/2002	0.007011153	-0.21410627	3.95141E-18	17/6/2010	-0.01068036	-0.16315007	2.08796E-31	28/11/2011	0.00264511	-1.03878221	2.28008E-45	18/5/2012	0.035014547	1.102024992	3.80846E-39	21/1/2013	-0.00464683	-0.10415601	3.60494E-05
8/11/1998	-0.01796	-0.00351	0.00014281	12/4/2002	0.035684982	-0.17842129	1.21106E-17	18/6/2010	-0.01480237	-0.17795251	7.25293E-32	29/11/2011	-0.05013044	-1.08891265	1.46944E-44	19/5/2012	0	1.102024992	8.52142E-38	22/1/2013	0.011229822	-0.09292619	2.62579E-05
8/12/1998	0.001012	-0.0025	0.00010957	12/5/2002	-0.022173081	-0.20059437	4.10617E-17	19/6/2010	0	-0.17795251	7.53875E-32	30/11/2011	0.01412009	-1.07479259	4.01584E-44	20/5/2012	0	1.102024992	8.24571E-37	23/1/2013	0.006820365	-0.08610583	1.82671E-05
8/13/1998	0.007906	0.005409	0.00010561	12/6/2002	0	-0.20059437	2.58822E-16	20/6/2010	0	-0.17795251	5.82471E-31	1/12/2011	-0.01562792	-1.09042048	2.71298E-42	21/5/2012	-0.02120780	1.080817189	6.84129E-36	24/1/2013	0.004525578	-0.08158025	1.24964E-05
8/14/1998	0	0.005409	9.95943E-05	12/7/2002	0	-0.20059437	1.12769E-15	21/6/2010	-0.01080637	-0.18875895	3.90678E-30	2/12/2011	-0.01329126	-1.10371174	1.01128E-40	22/5/2012	0.004431598	1.085248787	4.60617E-35	25/1/2013	-0.00566129	-0.08724155	8.25224E-06
8/15/1998	0	0.005409	8.29733E-05	12/8/2002	0	-0.20059437	4.62338E-15	22/6/2010	-0.01710831	-0.20586726	2.1582E-29	3/12/2011	0	-1.10371174	6.80544E-39	23/5/2012	-0.00148146	1.083767632	5.31819E-34	26/1/2013	0	-0.08724155	5.16103E-06
8/16/1998	0.004738	0.010146	6.75627E-05	12/9/2002	-0.008354437	-0.20894881	1.75841E-14	23/6/2010	0.014814193	-0.19105307	4.00984E-28	4/12/2011	0	-1.10371174	5.38427E-37	24/5/2012	-0.02335523	1.060412085	4.42842E-33	27/1/2013	0	-0.08724155	2.89647E-06
8/17/1998	-0.00028	0.009869	5.34411E-05	12/10/2002	0.036657747	-0.17229106	6.07394E-14	24/6/2010	0.016076313	-0.17497676	1.02618E-26	5/12/2011	-0.02559565	-1.12930740	4.16433E-35	25/5/2012	-0.00584475	1.054567334	3.00502E-32	28/1/2013	-0.00381068	-0.09105223	1.42379E-06
8/18/1998	0.019228	0.029149	3.73576E-05	12/11/2002	0.091130444	-0.08116062	1.32117E-13	25/6/2010	-0.00671567	-0.18169243	2.2311E-25	6/12/2011	0.00214165	-1.12716574	3.14517E-33	26/5/2012	0	1.054567334	4.11715E-31	29/1/2013	0.003011177	-0.08804106	5.72581E-07
8/19/1998	0.014908	0.044057	2.45827E-05	12/12/2002	0	-0.08116062	7.46833E-13	26/6/2010	0	-0.18169243	4.73731E-25	7/12/2011	0.00406098	-1.12310504	1.41289E-31	27/5/2012	0	1.054567334	6.04958E-30	30/1/2013	-0.00146141	-0.08950248	1.61727E-07
8/20/1998	-0.0353	0.00873	9.06048E-	12/13/2002	-0.02173	-0.1028963	8.48604E-	27/6/2010	0	-0.1816924	2.24482E-24	8/12/2011	-0.00147115	-1.12457615	6.55514E-30	28/5/2012	-0.03728675	1.017 2806	7.56487E-29	31/1/2013	-0.03455570	-0.12405595	2.44722E-

	3		06		5688	12	13			31			22	7			08	26			56	38	08
8/21/1998	0	0.00873	1.30343E-06	12/14/2002	0	-0.10289631 2	6.8111E-13	28/6/2010	-0.00957624 7	-0.19126867 8	5.9195E-24	9/12/2011	-0.01000499 4	-1.13458116 5	3.3655E-28	29/5/2012	-0.00744898	1.00983163 47	7.48033E-28	1/2/2013	1.00947867 3	0.88541913 5	7.29898E-10
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