EFFECTS OF SHARE SPLIT IN A LISTED COMPANY
A STUDY OF THE NAIROBI STOCK EXCHANGE

BY

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A PROJECT SUBMITTED TO THE UNIVERSITY OF NAIROBI, SCHOOL OF MATHEMATICS, IN PARTIAL FULFILMENT OF THE REQUIRMENT FOR THE AWARD OF POSTGRADUATE DIPLOMA IN ACTUARIAL SCIENCE.
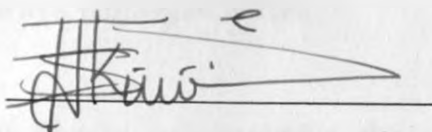
STUDENT'S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the University of Nairobi for academic credit.
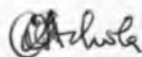
Signed: _____   Date: ___14/08/09.___

Nthiga Jackson Kariuki

SUPERVISOR DECLARATION.

This project has been presented for examination with my approval as the appointed supervisor.

Signed: ___Achola_____   Date: ___14/08/09___

Mr. C. Achola

ACKNOWLEDGEMENT

DEDICATION

I dedicate this work to my late Dad for his endless passion to see me go through my studies, to my Dear wife and daughter for their understanding and sacrifice they gave to see me through this study, and for their continued support, encouragement, throughout the period of my studies. Without them, I would not have made it.

ABSTRACT

The general objective of this study was to determine whether share split made by firms listed on the NSE during the period 2004 to 2007 had any valuation effect on the splitting firm. The specific objectives of the study were:

(i)   To determine whether there is a significant relationship between share split announcement and the splitting firms share price;

(ii)   To determine the effect of share split announcement on the splitting firm's liquidity;

(iii)   To determine the effect of a share split announcement on share risk by examining the trend in the share returns following a share split announcement.

The standard event methodology was adopted in this study. The methodology involved measuring trading trends during the events window using a prior estimation period for comparison. The study used the entire population of eight firms listed at the NSE and have made stock split announcement during the period 2004 to 2007. The data collection instrument was based on market model. Data on stock prices and market indices was collected using the observation guide for a 61-day event window (pre-event window) .The collected data was analyzed using regression analysis as well as the two tailed t-test to measure the statistical significance of the cumulative abnormal returns (CARs).

The research findings of the study were threefold. First, sharesplits by the splitting firms do not result to any significant changes in the valuation of their shares at the Nairobi Stock Exchange. Secondly, share splits of the splitting firms experience liquidity effects around the respective ex-dates. This is because the number of

trades seems to increase, lending some support to the hypothesis that the trading by small investors increases post-split. Thirdly, share splits result to significant changes in shares betas of the respective firms. This implies that share splits are associated with changes in the shares' systematic risks, measured by the share's market model Beta. This is due to a significant shift in investor clientele, which further fuels share volatility.

The study recommended that due to the liquidity effects around the ex-dates, the management of listed firms should propose share splits as a measure of making their shares more attractive and affordable to small investors. In line with "the neglected-firm hypothesis", the listed firms may use the split to both draw attention and ensure that information about the company is going to be spread wider than before. This will enhance both the image and the reputation of the firm. To cushion investors against the after-effects of share prices volatility, the management of the NSE should formulate guidelines of trading around the ex-dates. The study relied on data from secondary sources. Therefore, it was proposed that further research should incorporate a survey of the conditions and the strategic objectives that drive the management of listed firms into announcing share splits.

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LIST OF ABBREVIATIONS AND ACRONYMS

ATS : Automated Trading System

CAPM : Capital Asset Pricing Model

CAR : Cumulative Abnormal Returns

CDS : Central Depository System

CMA : Capital Markets Authority

EMH : Efficient Market Hypothesis

ICDCI : Industrial and Commercial Development Corporation

Investments

IFC : International Finance Corporation

MAAR : Market-Adjusted Abnormal Return

NSE : Nairobi Stock Exchange

NSELM : NSE Listing Manual

SPSS : Statistical Package for Social Sciences

CHAPTER ONE

1.0. INTRODUCTION

1.1. Background to the Study Problem

According to Sharpe, Alexander, Bailey,1995), stock split is an accounting transaction that increases the number of shares of stock held by existing shareholders in proportion to the number of shares currently owned by these shareholders. A stock split entails a reduction in the par value of the corporation's stock and the simultaneous exchange of a multiple number of new shares for each existing share.

Stock splits have long been a puzzling phenomenon to market practitioners and researchers. Taken at face value, such distributions are just a finer slicing of the total market value of the firm, and as such should have no effect on firms and investors (Lakonishok and Lev,1987).

Since (Fama, Fisher, Jensen and Roll, 1969), published their seminal paper on stock splits, a large body of research has investigated this particular corporate decision. The interest in stock splits is motivated by the fact that this event is not directly related to changes in the operating or financial structure of the firm and, therefore, should cause no change in stock price other than the adjustment warranted by the split factor.

The Nairobi Stock Exchange has recently witnessed a "wave" of stock splits after the market became fully automated following the introduction of the Central Depository System (CDS) and the Automated Trading System (ATS) in year 2004 and year 2007 respectively. The automation was in line with the recommended international best practice for the operation of stock

exchanges. Among the firms listed at the NSE, eight of the firms namely Kenol-Kobil, East-African Breweries, East-African Cables, ICDC-Investments (Centum), Barclays Bank of Kenya, Sasini-Tea, CMC-Holdings and Kenya Commercial Bank have had their authorized shares split in a predetermined ratio.

Empirical studies conducted mainly in developed markets have shown that one of the main reasons why listed firms split their stock is to spur liquidity. A study by (Alves and Alves, 2001), shed some light over the consequences of the 13 stock splits on the Portuguese market that were executed from September 1999 to October 2000. Their approach was to analyze potential liquidity effects of stock splits and the abnormal returns observed around the relevant dates. They assumed liquidity to be the only rational reason for managers to justify their decision. In simple terms, it is argued that the splitting of the stock allows more investors to buy the stock, therefore creating a more liquid environment and leading to an observable abnormal return around the announcement and ex-dates.

(Harper, 2000) found that in the US, where most practices in the derivative markets are borrowed, the New York Institute of Finance has delved in the subject considerably and concluded that the split is a mechanism to reduce the price level to encourage continued support by investors.

In Kenya calls for share splits reached a crescendo at the height of the stock boom in the year 2004, when stock prices rose by over 100%, (Nairobi Stock Exchange [NSE], 2004). Among the leading lights pushing for the adoption of the concept in the Kenyan market was the NSE Chairman. His argument then was stock splits would allow more investors to enter the market in the midst of price exuberance.

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The motivation for this study was to contribute to the existing empirical evidence on the impact of stock split announcement on stock prices with specific reference to the Kenyan market. Since it is a relatively new concept in the Kenyan capital market, the researcher was of the view that the research was timely and would go a long way in helping the Kenyan capital market as it embraces the new concept.

The study was based on the hypothesis that stock split announcements made by firms quoted on the NSE had no valuation effect on the splitting firm. The study was further based on the knowledge that the NSE is weak form efficient as concluded in the study carried out by (Nganga University of Nairobi, 2003).

1.2. Statement of the Problem

According to (Lindahl and Wachowicz, 2001), Stock splits are another corporate event self-selected by managers as to if and when they occur. Among all the possible events one might focus on, the stock split is appealing because it is one of the few corporate decisions that does not directly affect future cash flows or firm risk characteristics.

Debate continues as to why managers choose to split their stock, most studies theorize that managers are conveying positive signals to the market. One line of reasoning is that managers are intentionally trying to convey news through the transaction (Brennan and Copeland, 1988). However an alternative literature has suggested that these signals may be unintentional and instead splits occur as a consequence of management's desire to solve some other problem. Specifically, managers may split their stock in order to

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preserve a trading range (Dravid, Grinblatt, Masulis, Nicholas and Titman, 1990).

Previous studies which had mainly focused on developed capital markets for example (Ikenberry, Rankine and Stice,1996 and Desai and Jain,1997, had produced evidence of positive long-horizon drifts following split announcements. However a study carried out by (Isil Sevilay Yilmaz, 2003) on the impact of stock split announcement on Istanbul Stock Exchange - an emerging market - produced conflicting findings suggesting that split announcements may produce negative results in the splitting firm's returns and liquidity, making further research on an emerging stock market in this case the Nairobi Stock Exchange potentially useful.

Despite the previous empirical studies carried out on market reaction to stock split announcements in various stock exchanges, (Ikenberry, Rankine and Stice, 1996 and Desai and Jain, 1997), little study had been carried out on the NSE with regard to the valuation effect or signaling effect of stock split announcements. The gap this study aimed to fulfill was to determine whether stock split announcements send positive or negative signals to market players specifically, the investors, stock brokers and financial analysts. If such announcements have positive or negative impacts then the said NSE market players would react accordingly resulting to adjustment of the splitting firm's market value accordingly.

1.3. Objectives of the study

1.3.1. General objective

The general objective of this study was to determine whether stock split announcements made by firms quoted at the NSE during the period 2004 to

2006 had any valuation effect on the announcing firm's stock price as listed on the NSE.

1.3.2. Specific Objectives

The study sought to achieve the following specific objectives:

i) To determine whether there is a relationship between a stock split announcement and the valuation of announcing firm's share price.

ii) To establish whether stock split announcements have an effect on stock liquidity.

iii) To ascertain whether stock split announcements affect the risk levels of the splitting firm's listed security.

1.4. Importance of the Study

The study will be of utmost importance to the following categories of people;

1.4.1. Listed Company's Management

The study provides management of listed firms with information on the market reaction to a stock split announcement. As no prior research had been done with specific reference to the Kenyan market, the information gathered from the study would enable the listed firm's management to determine whether such announcements have a positive, negative or no effect on the firm's market value.

1.4.2. Market Regulators (NSE and CMA)

The study provides the regulators with necessary information that they require prior to the approval a stock split. They would be able to gauge whether a firm is ready for a stock spit after receiving the firm's proposal of its intention to announce a share split.

1.4.3. Investors

The study is of paramount importance to the investors who after reviewing the findings of this research would be aware of the signaling effect of a split announcement at the NSE, thus would be able to make an informed decision. This means that investors would be able to decide whether its time to buy, sell, or hold a security following a stock split announcement based on the study.

1.4.4. Academicians

As no previous study had been carried out regarding stock splits in the Kenyan context, the study provides a baseline, for academicians and researchers who want to carry further studies on stock split announcement.

1.5. Scope of the Study

The aim of the study was to determine whether a stock split announcement has an impact on the related stock price with specific reference to the Kenyan market. The study was therefore limited to companies that are listed on the NSE and had split their authorized and listed shares during the period 2004 to 2007. The period was chosen as the concept is relatively new and was introduced in the year 2004 at the NSE, a market that is considered as a fairly small emerging market, characterized by thin trading.

1.6. Definition of Terms

1.6.1. Announcement effect

This is defined as the stock market reaction to price sensitive information released to the public. Muradoglu and Agogan (2001).

1.6.2. Stock Liquidity

This is defined as the ability in a listed stock to be converted in cash without being any price discount. Stock liquidity in a stock exchange is gauged by

the number of shares that trade for the respective firm at any given trading session. Muscarella and Vetsuypen (1996).

1.6.3. Share holders value

This is the ownership interest on common and preferred stock holders in a corporation Ross 2002.

1.6.4. Normal returns

The normal or expected return is defined as the return that might have been expected given a stock's sensitivity to the market, and the performance of the market itself. Freud and Pagano (2000).

1.6.5. Abnormal Returns

This is defined as the stocks return over and above what one would predict (residual returns) based on broad market movements at a given period and the stocks sensitivity to the market Scholes (1972).

1.6.6. Cumulative Abnormal Returns (CAR)

This is defined as the sum of the differences between expected return on a stock and the actual return that comes from the release of news to the market Ross (2001).

1.6.7. Event Window

This is defined as the period over which the security prices of the firms involved in the event will be explained Mackinlay (2001).

1.6.8. Cum-split

This is the period within which all shareholders are entitled to the impending split that's before the books closure date. NSE listing manual [NSELM](2002).

1.6.9. Ex-split

This defined as stocks selling without the recently declared split. It is the period between the books closure date and the posting date when the additional share are available for trading at the stock Exchange (NSELM, 2002).

1.7. Chapter Summary

This chapter covered the background of the problem by highlighting some findings about stock split that have been carried out before. The purpose of the study and the knowledge gap to be filled was given in the problem statement. In addition the study was justified and the scope of the study set. The next chapter reviews the literature related to the purpose of the study.

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. Introduction

This chapter examines the valuation effect of stock spit announcement on firms quoted at the Nairobi Stock Exchange. The chapter has three major parts based on the specific objectives of the study that seek to answer the following questions: Is there a significant relationship between stock split announcement and splitting firm's stock price? Do stock splits have an impact on stock liquidity? Do stock split announcements affect the riskness of splitting firm listed shares? According to (Brennan and Copeland, 1988), stock splits are informative to the market in two ways. First, they can be used to signal the firm's private information about future prospects. Second, they can help attract the interest of more analysts and investors and thus lead to a positive revaluation of the stock.

2.2. Relationship between Stock Split Announcements and Stock Prices.

2.2.1. Determinants of movement in stock prices

According to (Madsen,1995), several fundamental factors including expectations, external events, fiscal and tax policies, government spending, monetary policy, inflation, and business cycles as well as technical factors like the condition of securities markets, price movements, trading volume, and supply and demand determine share prices. (Madsen, 1995) explains the effect the fundamental factors have on stock prices to include everything outside the security markets themselves, which might influence price.

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Since market security prices are negotiated between buyer and seller, future expectations help determine price. Present information helps determine future expectations but, because people have different access to information and interpret information differently, buyers and sellers are usually able to strike a deal. External events such as wars, earthquakes, and crop failures can have major impacts on equity prices because most equities, unlike bonds, have no fixed terms or returns (Dennis and Strickland, 2003).

Government fiscal policies may influence stock prices. At its simplest, government spending is usually simulative, and will support the stock prices of certain industrial or social sectors, as long as it are not too inflationary. Tax increases tend to dampen consumer spending and business profitability while tax cuts may spur the economy and boost profits and common share prices (Alves and Alves, 2001).

The levels and targets of government spending can affect business profitability and share prices. Governments can direct spending to assist specific economic sectors. Import policies may help or hurt particular industries, and policies such as the dividend tax credit may encourage share ownership. Monetary policy may be directed toward restraining the growth of money and credit during excessive economic expansions, and vice versa during contractions. This has an effect on the activities and expectations of businesses, and their share prices. Market participants may change their interpretations of government policy, thus altering their expectations and the price they are willing to pay for common shares (Dubofsky, 1991).

Inflation tends to create uncertainty, increase inventories, and drive up labor costs, all of which usually depresses common stock prices. Since depreciation allowances are pegged to the original cost, not replacement

cost, true costs of doing business in inflationary times are usually understated (Madsen, 1995). The tax burden of corporations increases because pre-tax profits become overstated. This will serve to reduce share prices. Inflation also drives up interest rates, either as a matter of government policy or as an "inflation premium" demanded by lenders to compensate them for a future decrease in purchasing power. This increases the cost of loans, decreases business profitability, and decreases share prices (Ikenberry, Rankine and Stice, 1996).

Business cycles, irregular increases and decreases in economic activity, also have an influence on stock prices. There are many theories about what causes business cycles. Some say technological innovations or political events create expansions and contractions in business activity. Others (Dubofsky, 1991; Ikenberry, Rankine and Stice, 1996) argued that imbalances between production and consumption create the cycles; growth is caused by consumer demand, which causes manufacturers to expand their production. Eventually, production exceeds demand; businesses cut back, unemployment increases, and demand falls until consumers can no longer postpone new purchases, at which point growth begins again. Broad changes in common stock prices generally coincide with business cycles, but it is very difficult to predict when cycles will begin and end, and which stocks will be affected (Desai and Jain (1997).

2.2.2. Announcement effects of stock split on prices

One of the most compelling and intriguing research questions of our time is how information is reflected in the price of stocks. Early foundations of modern finance presumed that the valuation impact of news was transmitted to the market through buyers and sellers revising their expectations about future firm performance. This, in turn, changed the risk-

adjusted value of the firm which eventually became reflected in market prices. This transmission mechanism was argued to operate in both a rapid and unbiased manner and motivated the term "efficiency". The notion of stock market efficiency, first introduced by (Fama, 1965), has played a central role in both theoretical and empirical work on the topic.

Freud and Pagano (2000) defined market efficiency as both operational and informational. Operational efficiency pertains to a market's ability to provide liquidity, rapid execution, and low trading costs. One way to examine this type of efficiency is a study of bids and offers, or the spread between them and adjusts for the trading characteristics of specific stocks issues. A stock market is efficient if prices always fully reflect available information (Fama, 1965).

Information is divided into three subsets, distinguishing between weak, semi-strong and strong form efficiency with respect to historical prices, publicly available information, and private information, respectively. Capital markets efficiency is implicit in many of the models involved in financial decision making; hence the concept is central to building a conceptual framework required for making rational financial policies and choices (Weston and Copeland, 1988).

Eugene Fama in his 1970 review of the efficient market hypothesis (EMH) stated that "the primary role of the capital markets is the allocation of ownership of the economy's capital stocks, in general terms the ideal is a market in which prices provide accurate signals for resource allocation: that is, a market in which firms can make production-investment decisions and investors can choose among the securities that represent ownership of the

firms' activities under the assumption that securities prices at any time reflect all available information (Fama, 1970).

A weaker but economically more realistic version of the market efficiency is that prices reflect information up to the point where the marginal benefits of acting on the information (the expected profit to be made) do not exceed the marginal costs of collecting it (Ikenberry et al, 1996). The implication of the EMH is that since prices fully reflect all available information immediately, investors should only expect to obtain a normal rate of return, and there are no arbitrage opportunities. Awareness of information when it is released does an investor no good, as the price adjusts before the investor has time to trade of it (Ross, 2001).

This also means that prices respond only to new information, which must be unpredictable. This is the essence of the argument that stock prices should follow a random walk, that is; the price changes should be random and unpredictable (Scholes, 1972). Firms would therefore expect to receive the fair value for securities that they sell, where 'fair' means the price they receive for the securities they issue at the present value. Thus valuable financing opportunities that arise from fooling investors are unavailable in efficient capital markets. This is part of greater fool theory (Ross, 2001).

A related strand of literature, reviewed in Verrecchia (2001) has dealt with the theoretical modeling of how the disclosure of information affects investors as reflected in stock prices and trading volume. One interesting insight from this literature is the revelation in Grossman and Stiglitz (1980), that prices can only fully reflect costless information, since there must be a return to acquiring information at a cost, otherwise there will be no information acquisition.

Stock splits are generally stated to be a puzzling phenomenon for researchers where theory and practice contradict. On one hand, theoretically, a stock split means no more than a cosmetic accounting change and it simply increases the number of shares outstanding without any change in shareholders' proportional ownership of shares (Conroy and Harris, 1999). Thus, shareholders are expected to receive no tangible benefits from a stock split while there are some costs associated with it such as administrative costs for issuing companies and increased transaction costs for investors.

The most common explanations for these unexpected effects are provided by the signaling hypothesis, the substitution hypothesis and the trading range hypothesis which are not mutually exclusive. The signaling hypothesis (Fama, Fisher, Jensen and Roll, 1969), argues that the market realizes split information as a signal to re-evaluate expected income from substantial dividend increases. A study by (McNichols and David, 1990) also provided evidence for this hypothesis by reporting subsequent unanticipated increases in earnings per share and the positive correlation between price changes and the split factor.

The substitution hypothesis (Scholes, 1972) assumes that the demand for a particular company's shares is perfectly elastic, so any increase due to stock splits will not lead to a fall in share price. This high demand elasticity is alleged to the existence of alternative risky assets as close substitutes. Tests of the competing Price Pressure Hypothesis assume market inefficiency in the sense that stock splits-rights issues will have a depressing effect on share prices in the case of downward sloping demand curves. In mature

markets, however, this hypothesis is rejected and markets appear to be highly liquid (Marsh and smith, 1989).

The trading range hypothesis by Woodridge and Chambers (1983), assumes a popular trading range for stock prices and concluded that management, using its private information about company prospects, sets a split factor so that stock price is brought back to that trading range.

(Maloney and Mulherin, 1997), presented evidence of wealth increase effect around the announcement and execution dates, for their sample of NASDAQ stock splits that occurred between the beginning of 1985 and the end of 1989. Around the announcement date, they found an important price run-up in the ten days leading to this date. The authors also found price increases around the execution date, though of smaller magnitude than those recorded for the announcement date. The price increase was also significant for the three days starting on the execution date. They argued that this positive reaction on the ex-date could not be connected to informational content, since the split date was known well in advance. They tried to find support for this price reaction in microstructure components of the stock market.

Price reactions following split announcement were further explained by the changing composition of stock investors as a result of the split decision. The hypothesis of changing mix of investors by (Lamoureux and Poon ,1987) was based on the fact that the number of shareholders in a firm tends to increase after a split; i.e. split would increase the demand for stock among small investors which would in turn increase liquidity and hence price.

Stock splits can be also informative to the market in two ways. First, they can be used to signal the firm's private information about future prospects. Second, they can help attract the interest of more analysts and investors and thus lead to a positive revaluation of the stock. Stock splits can have signaling value because they have costly consequences, including execution costs, higher listing fees, and greater trading costs associated with price drops (Brennan and Copeland, 1988). Therefore, only firms with positive private information can afford to signal through a stock split.

2.3. Liquidity Effect of Stock Split Announcement.

Market liquidity is difficult to define, given its multifaceted nature. Broadly speaking, there are mainly three possible dimensions of market liquidity: tightness, depth and resiliency. Teall, Gargalas and Wu (2005) defined a liquid market as a market where prospective purchasers and sellers can transact on a timely basis with little cost or adverse price impact. It is important to market players as it measures the costs incurred. Of the various indicators, the bid-ask spread is one of the most frequently used. Depth refers to the volume of trades possible without moving prevailing market prices.

Liquidity plays a crucial role in stock exchange markets. Without the availability of counter-offers, stock markets experience thin trading or are replaced by individualized bilateral contracts. Thus, some liquidity is necessary even for the existence of a stock exchange market. Further, high liquidity expands the set of potential counter-offers and enhances the probability of a favorable match. Thus, higher liquidity increases the expected level of satisfaction (utility) of market participants. (Conroy,1990).

Companies might pursue a disclosure strategy in response to perceived illiquidity for their shares in a stock market. Consequently, corporate disclosures aim to improve stock market liquidity. Disclosure literature has shown that high quality public disclosures (e.g., annual reports, press releases,) reduce information asymmetry and increase stock market liquidity (Bushee and Noe, 2000).

Leuz and Verrecchia (2000) argued that market liquidity could be measured by both trade-based and order-based measures i.e. transaction volumes and bid-ask spreads. Theoretically, the trading volume of a given security is an increasing function of its liquidity, other things being equal. Thus, an increase in trading volume of a stock reflects an increase in its liquidity. However, the automated trading system and absence of direct negotiations between participants could reduce market liquidity (Sioud and Hmaied, 2000). Liquidity and transparency are desirable because they reduce the required return by investors and therefore increase security values. Increased liquidity improves the ability of stock markets to perform their information processing and signaling functions (Green, 2003).

Although liquidity is a popular argument among practitioners for the rationale of stock splits, the available empirical evidence is not conclusive on the effects of stock splits on liquidity. First, one must consider that liquidity can be measured in many different ways. For instance, (Wulff, 2002) uses the following measures; volume, calculated as the adjusted daily number of shares traded; volume turnover which is calculated as the volume divided by the shares outstanding; and, percentage of days with trades.

Another way of thinking about liquidity is by considering the cost of trading. In this issue most studies considered variations of the relative bid-ask spread. The literature shows that there is an increase in the relative bid-ask spread (Copeland, 1979; Conroy, 1990; Desai, 1998; and Alves and Alves, 2001).

Researchers have attempted to explain the market's positive reaction to stock splits on the basis of valuation effects generated by changes in liquidity and trading costs, the adjustment of price to an optimal trading range, and signaling. The liquidity-improvement hypothesis is based on the proposition that lower-priced stocks draw more investors and generate greater trading volume, thus enhancing marketability and reducing the bid-ask spread. (Ikenberry, 1996).

Muscarella and Vetsuypens (2000) uncovered significant evidence lending support to the argument that splits improve liquidity. They used a sample of American Depositary Receipts (ADR) solo splits, i.e., splits of ADRs without a corresponding split in the home country. The study concluded that the market reaction to simultaneous splits was a positive 1.13% mean return. For solo splits the results showed higher returns. For the total sample the mean return was 2.11% and 2.56% for the "clean" sub-sample (both statistically significant).This statistically significant result is also characterized by an increase in the number of institutional shareholders and the percentage of the capital held by these investors. The authors argued that the split allowed current small shareholders to diversify their wealth by allowing them to sell the split shares in round lots.

A study by Schultz (2000) also concluded that an increase in small trades occurs subsequent to a split. He reported a strong increase in trades that are

smaller than the previous round lot trade. His conclusion was that a large number of small shareholders are added to the shareholder base after the split. This happened even though an increase in the effective spread occurs for all trade sizes considered The author claims that the increased spreads are a powerful incentive for market makers to promote the stock resulting to improved liquidity.

In their study of Canadian stock splits, Kryzanowski and Zhang (2006) found evidence of an increase in trades conducted by small investors. Since the identity of the traders themselves could not be determined, their proxy was trade size. They tried to find evidence of an increase in small board lot trading compared to odd lot trading after the split. They classified each trade as a buy (sell) if the trade was at the ask (bid). For trades that occurred between the bid and ask, the algorithm proposed by Lee and Ready (1991) was used to classify them as buy or sell orders. For odd-lot trading, all the liquidity measures (e.g., trading volume, trading value, trading frequency and transaction size) reported a significant decrease. On the opposite side of small board-lot, these variables showed increases in mean values that are significant, with the exception of trading volume.

Lakonishok and Lev (1988) also addressed the issue of liquidity by analyzing the monthly turnover for the splitting stocks and a control group. They reported that the splitting stocks showed a rapid increase in trade volume from around sixty months prior to the split announcement up to the announcement date itself. After this the decrease is rapid and even more impressive than the increase.

Dennis and Strickland (2003) analyzed the issue of liquidity by decomposing the shareholder ownership composition. Since some authors have found an increase in the relative bid-ask spread following the splits, one would expect that institutions would dislike splits, since the relative bid-ask spread is an important cost they incur. Nonetheless the authors found evidence contradicting this assertion. They concluded that the proportion of institutional ownership following a split, conditional on the level of prior institutional ownership increased significantly. In terms of abnormal returns, the authors found that higher returns were associated with larger increases in institutional ownership. Lamoureux and Poon (1987) reported an increase in the number of shareholders, but they did not explore this increase in order to analyze who the new "entrants" were (small investors or institutions).

Wulff (2002) analyzed 276 stock splits in the Official Market of the Frankfurt Stock   Exchange (FSE) from 1960 to 1996. One striking feature he documented was that the splits were highly clustered in the years 1967-1970 and 1995-1996. The author reasoned that the main reason behind this clustering was connected with minimum par value rules that were applicable at the time to German companies. This restriction lead the author to claim that signaling could not be the main reason behind splits as companies did not seem to split when they found this operation to be appropriate, but only when the law changed. His analysis concerning liquidity is supportive of enhanced liquidity brought about by the split.

Conroy (1999) also addressed the issue of bid-ask spreads. Their sample comprised splits from NYSE shares from the January 1981 to April 1983 period. An important feature of their study is that the comparisons made were between the two months prior to the announcement and the two

months following the ex-date. They found that the mean absolute spreads presented a decrease from 2.53 to 2.316. However, in relative terms their sample witnessed a statistically significant increase from 0.951% to 1.229%. These changes in absolute and relative spreads were more intense in the case of large splits.

Guirao and Sala (2002) studied liquidity effects in Spanish stock splits that took place between 1997 and 1999. For their full sample they did not find evidence of liquidity improvements. Their conclusions changed somewhat when the orders were divided according to transaction size Small transactions and medium transactions especially on the "buy" side demonstrated a clear liquidity increase in terms of trade frequency and volume. The picture was different concerning large transactions. For the three sub- samples partitioned by size there was a common feature: the increase of the Effective Spread. The study concluded that, much in line with prior literature, small investors were drawn in by smaller prices, even though they were charged higher post-split cost.

Wu and Chan (2000) studied stock splits and reverse stock splits in Hong Kong. They found positive abnormal returns at the announcement of stock splits that can be explained well by an "optimal price range" or liquidity variable.

In the United States of America, (USA) evidence suggests that in event of a stock split announcement, the response can partly explained by information and, to a lesser extent, by liquidity considerations. Ex-day returns are partly explained by liquidity considerations. Studies abstracting from other parts other than the US setting generally document similar results. For example, (Wulff, 1999) focuses on splits in Germany and documents small, positive

returns around split announcement and execution. He argued that his results are unlikely to be explained by information signaling or liquidity effects. Instead, they are more consistent with a neglected firm explanation according to which firms split their stock to elicit public attention.

2.4. Risk Changes Induced by Stock Splits

Risk is one of the main factors that determine return. In countries with high inflation, return should be higher in order to compensate the risk evolved in the system and encourage capital inflow to the country. Whereas, return constitutes all the information implicitly through its interaction with volume, interbank rate and other instruments in the financial markets (Muradolu, Berument and Metin, (1998).

Risk is one of the main factors that determine return. In countries with high inflation, return should be higher in order to compensate the risk evolved in the system and encourage capital inflow to the country. Whereas, return constitutes all the information implicitly through its interaction with volume, inter bank rate and other instruments in the financial markets (Muradou, Berument and Metin, 1998).

One of the most popular indicators of risk is a statistical measure called beta. Beta is a measure of a stock's volatility in relation to the market (Reilly, 2004). By definition, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns.

If the beta of a stock is higher than one, this means that the stock has greater variability and greater risk than the overall market. This means that it will change at a greater rate than the market does. So if the market goes down, chances are that this stock will go down also, at it will fall more relative to the fall of the market. However, if the market swings up, then so will the stock (or at least, that's the prediction), and it will go up at a greater rate than the overall market. Stocks with a beta of more than 1 have greater risk, but they also have a greater potential for increasing the return on the investment in this particular stock.

Systematic risk of a stock is the variation of stock returns attributable to the variation in market portfolio returns. The effect of systematic risk is to cause the prices of nearly all individual securities to move together in the same manner. Systematic risks are external to the firm, are uncontrollable and cannot be diversified and affect a large number of securities in the market (Elton and Gruber, 1999).

Beta is a measure of systematic, market unavoidable and non diversifiable risk of a security. Beta measures the sensitivity of a securities return to movements the market portfolio that is normally represented by a suitable stock market index. The beta value of an individual security can be positive or negative and can lie between the values of 0 and 2.Betas of stocks can be useful in predicting the impact of an event, in this case stock split announcements to the underlying security. The higher the beta of a security the higher the expected change in stock price due to a corporate announcement affecting the security. The market index gives a beta of I and the stock with a beta of 1.8 gives a return of 18% for every 10% change in market return and the vice versa (Fisher and Jordan, 2002).

The Capital Asset Pricing Model (CAPM) is important as it quantifies and prices systematic risk and expresses it relative to the market portfolio. Thus CAPM provides us with the expected return of any asset or portfolio based on its risk as measures by beta, the risk premium of the market and the risk free rate. The security market line (SML) gives the classic risk return relationship, which says that investors will always demand higher levels of return for increased risks (Copeland and Weston, 1988).

Although most work surrounding stock splits focus on the effects on prices and its relation with liquidity changes, some work has also been developed concerning changes in risk. Risk is the uncertainty that the expected return of an asset or a portfolio of assets will be realized. Fisher and Jordan, (2002).Risk is manifested as failure of dividend payout and or price appreciation of the security to materialize as expected. The volatility of a stock is basically its risk. Does the stock change a lot when compared to the overall market? Do the changes in the value of the stock basically mirror the changes in the overall market? Is a stock particularly stable and change less in value than the overall market.

Sheikh (1989) addressed this issue in the context of a study that tested the efficiency of the Chicago Board Options Exchange (CBOE), following previous authors that identified a significant increase in volatility subsequent to stock splits with a split factor larger than 25%. Even if the causes concerning this increase may not be clear, an increase in the price of calls should occur as a consequence of that increase in volatility. On the ex-date, Sheikh (1989) observed a significant increase for the splitting group, with the control group showing an insignificant decrease. This resulted in a statistically significant difference between the two groups. The author

concluded that the CBOE captured the ex-date variance increase as it occurred.

Dubofsky (2001) conducted a study that was basically an extension of a previous study by Ohlson and Penman (1985). In contrast to these authors, Dubofsky focused on both NYSE stocks and AMEX stocks and used a large time period from July 2, 1962 to December 31, 1987. The results obtained for the two exchanges lead the author to conclude there was a more pronounced increase in variance connected to NYSE stocks.

Desai et al (1998) conducted a more in-depth study of risk/volatility changes following stock split announcements. These authors reported a significant increase in volatility following the split. Their conclusions were stronger than those of Dubofski (1991) since their calculations took into account the effects of price discreteness in the bid-ask bounce. They reported an increase in the relative bid-ask spread, which in turn lead to the need to estimate volatility with more complex procedures.

As Lamoureux and Poon (1987) stated in their analysis of stock splits (and reverse splits) for the period between July 1962 and December 1985, "the market impact of splits is expected to be greatly diminished". They were referring to the introduction of a new tax bill in the U.S., which would eliminate distinctions between short-term and long-term capital gains. These authors argued that stock splits lead to an in- crease in variance and this variance was desirable, due to the way capital gains were then taxed in the U.S.. Since preferential treatment was given to long-term gains, then short-term losses could be used to offset short-term gains. To the authors, this justified the desirability of an increase in a stock volatility.

Lamoureux and Poon (1987) found evidence that the market reacted favourably to this increase in diversifiable risk. The authors computed the abnormal returns associated with the operation (around the relevant dates: execution date, announcement date and the date of the general shareholders meeting that approved the stock split), and confronted these results with those obtained for liquidity. In general terms, the abnormal returns were positive when liquidity improved and negative when it decreased. Lamoureux and Poon concluded that the market was efficient in translating to prices the effect of splits on liquidity.

While the efficiency hypothesis avoids the issue of how individuals process information and implicitly assumes homogeneous information, the disclosure literature has provided additional insight by more explicitly modeling this process and allowing for heterogeneous information. Kim and Verrecchia (1997) showed that empirical observations regarding the behavior of trading volume and price around announcements can only be supported by a theoretical model that allows for both heterogeneous private information about the value of the firm (pre-announcement information) and diverse investor interpretation of the disclosure due to heterogeneous event-period information. Their results show that the change in stock price depends on the average pre-announcement and event- period information. (Liang, 2003) found a significant positive relationship between the post-earnings announcement drift and heterogeneous information. These theoretical and empirical studies therefore indicate that the information environment plays a central role in the stock market's reaction to information disclosures thus may result to variation in the risk/ beta of a stock.

It is important for investors to make the distinction between short-term risk where beta and price volatility are useful and longer-term, fundamental risk, where big-picture risk factors are more telling. High betas may mean price volatility over the near term triggered by a corporate announcement like stock split announcement, but they don't always rule out long-term opportunities.

2.5. Chapter Summary

In this chapter, a literature review of the various empirical studies that were carried out on stock splits, as well as market reactions to such announcements has been discussed. The next chapter discusses the research methodology that was adapted in the study including the research design, population, sampling design as well as data collection and analysis methods

CHAPTER THREE

3.0. RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents the research methodology adopted in this study. The chapter highlights the research design, the population and sampling technique and sample size, as well as the data collection and analysis techniques.

3.2. Research Design

The descriptive research design was used to carry out this study. Accoring to Cooper and Schindler (2001) a descriptive study is typically structured with a clearly stated hypothesis and an objective of discovering associations among different variables. The rationale for using this design was that it would enable the study to establish the relationship between stock split announcement (independent varuable) and stock price, liquidity and risk (dependent variables).

A standard event study methodology was used to measure the impact of the stock split announcement on the price liquidity and risk of the related share. Event studies are a principal research tool in testing market efficiency (Dimson and Mussavian, 2000), and have been successfully used to examine the behavior of firm's stock prices around corporate events over the past several decades (Kothari and Warner, 2004).

Similar methodology had been used to test the information content of corporate announcements made by firms quoted on the NSE. These include: a study by Ng'ang'a, University of Nairobi (2003) to determine the information content of annual financial reports; and, a study carried by

Orwalla Beldina, university of Nairobi, (2005) to determine the effect of right issue announcement on the issuing firm's price.

3.3. Population and Sampling design

3.3.1. Population

The population of interest in this study comprised of all the firms that were quoted at the NSE, and that have made stock split announcements through the NSE. This excluded the firm that did there share split in 2008 and 2009. A total of eight firms had made stock split announcements through NSE since its inception in 1954 up to 2007, and these firms formed the sample population of the study.

3.3.2. Sampling Design

3.3.2.1   Sampling frame

The sampling frame was obtained from the NSE list of quoted companies, and comprised of all stock split announcements made by firms that met the following study's criteria : the firm was one of the companies listed on the NSE during the period 1954-2007; the stock split announcement made by the firm had been issued through the NSE during the period 1954 to 2007 and was not on private placement; the day of the split announcement was recorded at the NSE; and the firm's daily return data (opening and closing stock prices) were available from the NSE daily trade sheets or daily newspapers for both the event and estimation windows.

3.3.2.2   Sampling Technique

The sampling technique used in the study was convenient non-probability technique. This technique was chosen, as it enables the researcher to ensure that only the firms that met the study's objectives were selected. As the aim of the study was to determine the impact of stock split announcement on the issuing firm's stock price, only data obtained from firms that had split their shares was analyzed.

3.3.2.3   Sample Size

The sample was made up of firms that had split shares at the NSE and met the sample criteria. The study therefore sampled and tested eight firms that had carried out stock splits through the NSE during the period under study (1954-2007). The eight firms were Kenya Oil Company Ltd, East African breweries, East African Cables ltd, ICDC investments, Barclays Bank of Kenya, Kenya Commercial Bank, Sasini Tea, and CMC Holdings.

3.4. Data Collection Methods

Secondary data was obtained from the daily price lists and the corporate announcements bulletin, both available to the public from the NSE library. A data observation sheet (See Appendix III) was used to collect the following data for each firm: the date of the split announcement; the firm's daily stock prices for the 200 day estimation period (a pre-event period) and 61 day event window; and the related NSE 20-share indices for the same period.

The data observation sheet enabled the researcher to collect data relevant in addressing the specific objectives of the study. The study was able to determine the abnormal returns and cumulative abnormal returns for the

splitting firm's stock using the stock and market index prices obtained over the estimation and event window periods.

3.5. Research Procedures

The data observation sheet was designed comprising six columns. The first column captured the day of trade over the 61-day trading period applied to study the effect of stock splits. The second column captured information on the volume of shares traded on the respective trading days over the sample period. The third column captured information on the number of trade deals made on the respective trading days over the sample period. The fourth column captured information on the trading prices of shares on the respective trading days over the sample period. The fifth column captured information on the daily turnover of the market during the respective trading days over the sample period. Finally, the sixth column captured information on the values of the NSE (20) Market Index during the respective trading days over the sample period. To test for reliability, the data for one firm was captured using a template of the observation. The values were then captured on an MS-EXCEL® spreadsheet and the significant statistics computed based on the analytical models for the test. The process was repeated until the researcher was satisfied that the data conformed to the algebraic fundamentals of the applied models. The revised data sheet was then used to capture information from the eight firms.

3.6. Data Analysis Methods

3.6.1. Analytical Models

The NSE 20-share Index was used as a proxy for the market return. This is a market-weighted index of the 20 best companies listed at the bourse. Daily returns for each stock (or index) were calculated according to equation (1) below:

$$R_{it} = Ln\left(\frac{P_{it}}{P_{it-1}}\right) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (1)$$

Where Ln is the natural logarithm and Pit the price of stock or index i at day t.

To estimate price effects two methods were used. First, the return of each share around the relevant date was compared with that of the market. This was performed using equation (2).

$$NAR_{it} = R_{it} - R_{mt} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (2)$$

Where NAR_{it} is the Non-adjusted Abnormal Return on Stock i at day t; R_{it} is the return on Stock i at day t; and R_{mt} is return on the Market Index at day t.

Secondly, the stock's return was compared with the return expected for that day according to the market model. The market model was estimated using the algebraic expression of equation (3) below:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (3)$$

Where R_{it} is the return on Stock i at day t; R_{mt} is the return on the Market Index at day t; and ε_{it} is the disturbance term with zero mean. The abnormal return estimated through this model is given by equation (4) below:

$$AR_{it} = R_{it} - \left(\hat{\alpha}_i + \hat{\beta}_i R_{mt}\right) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (4)$$

The market model was estimated using daily returns for each stock and the NSE 20-share Index.

To analyze the price effects, the Cumulative Abnormal Returns (CAR) was computed for all days centered in the announcement and ex-dates. The use of CAR is common in event-study methodology. CAR for firm i were obtained using equation (5) below:

$$CAR_i = \sum_{t=T-30}^{T+30} AR_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (5)$$

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3.6.2. Diagnostic Tests.

Finally, parametric t-test was used at 5% and 1% levels of significance to determine the statistical significance of market adjusted average abnormal return of dividend paying stocks over the window period (-30 day to +30 day relative to split date). The t-statistics were calculated cross-sectionally by using the standard deviation of abnormal returns of the portfolio of the dividend-paying stocks. These were computed using SPSS to ascertain the significance of each value of CAR_t that was obtained. Moreover, t-test suggested in Brown and Warner (1980) was also applied to test the statistical significance of the cumulative abnormal returns.

3.7. Chapter Summary

In this chapter, the population of interest, the research and sampling design as well as data collection and analysis methods have been described. A descriptive research design was used to enable the researcher determine whether a relationship exists between a stock split announcement and the stock price. The event study method was used to evaluate any abnormal returns that may be experienced by stock splitting firms over a 61-day event window. The size of the sample comprised of 8 firms. The market model was used to analyze the secondary data collected in the study. The next chapter presents the findings of the study.

CHAPTER FOUR

4.0. RESULTS AND FINDINGS

4.1. Introduction

This chapter presents the data analysis, interpretation, and discussion of the research findings. The chapter examines, categorizes, and tabulates the evidence so as to address the study's research questions. The study sought to achieve the following specific objectives: to determine whether there is a relationship between a stock split announcement and the valuation of announcing firm's share price; to establish whether stock split announcements have an effect on stock liquidity; and, to ascertain whether stock split announcements affect the risk levels of the splitting firm's listed security. The chapter is guided by the specific objectives.

4.2. Sample Characteristics

Table 4.1 shows the stock splits considered in the sample and their respective ex-dates and split factors (defined as the new number of shares for each old share)

Table 4.1: Stock Splits, Ex-dates and Split Factors

Firm	Ex-dates	Split Factor
Barclays Bank (BBK)	30th November, 2006	5
East African Cables (EA-CABLE)	13th September, 2006	10
CMC Group (CMC)	27th February, 2007	10
ICDC Investments (ICDCI)	5th January, 2007	10
Kenya Commercial Bank (KCB)	3rd April, 2007	10
Sasini Limited (SASINI)	15th February, 2007	5
East African Breweries (EABL)	29th November, 2004	5
Kenol/Kobil Petroleum (KENOL)	5th July, 2004	10

Source: NSE (2008)

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It evident that the most commonly used split factor was ten. The share splits also resulted in similar adjustments to the par value of the respective shares, since the intentions of most splits at NSE are focused to enhancing the level of liquidity of a particular share rather than making adjustments to the value of the firm's share capital.

4.3. Effect of Share Split on the Valuation of Shares

4.3.1. Effect of Split on the Announcing Firm Stock Price

The first specific objective had sought to determine whether there is a relationship between a stock split announcement and the valuation of announcing firm's share price. In order to study the impact of split on market value of shares, the daily market-adjusted abnormal return was used (Uddin, 2003). The market adjusted abnormal return (MAAR) shows the change in individual stock's value due to the split. They were computed from equation (4). As the percentage change in market index (average market price) is deducted, the remainder gives the unsystematic portion of the value change, which is specific to that particular stock resulting from its split. MAAR was calculated over a period starting to −30 days to +30 days relative to the split ex-date (day -0). Parametric T-test was applied to establish whether there was significance difference in the mean values of MAAR between the cum-split to ex-split dates. The findings are presented in Table 4.2 below.

The findings of Table 4.2 indicate that the null hypothesis H0 was rejected for all the seven firms at both 95% and 99% levels of confidence which indicates that there was no significance difference between the mean values of MAAR (cum-split) and the mean value of MAAR (ex-split). This implies therefore that the stock splits by the splitting firms did not result do any

significant changes in the valuation of their shares at the Nairobi Stock Exchange.

Table 4.2: T-test for difference in stock returns between cum-split and ex-split dates

Firm	Mean Difference (cum split MAAR and Ex-split MAAR)	T-statistics	P-values	Decision
BBK	0.06451	$t_{(59)} = 1.094$	0.278	Accept H_0
CMC	0.06678	$t_{(59)} = 0.962$	0.339	Accept H_0
ICDCI	0.08530	$t_{(59)} = 1.1504$	0.255	Accept H_0
KCB	0.065247	$t_{(59)} = 0.882$	0.381	Accept H_0
SASINI	0.043312	$t_{(59)} = 0.612$	0.542	Accept H_0
EABL	0.043593	$t_{(59)} = 1.247$	0.217	Accept H_0
KENOL	0.076505	$t_{(59)} = 1.142$	0.258	Accept H_0

Source: NSE (2008)

H0: There is no significance difference between the mean values of MAAR (cum-split) and
The mean value of MAAR (ex-split)

H1: There is a significance difference between the mean values of MAAR (cum-split) and
The mean value of MAAR (ex-split)

Critical values = 1.96 (at 5% level) and 2.57 (at 1% level of significance)
Decision Rule: Reject H0 if t-statistics are greater than the critical values

4.4. Effect of Share Split on Stocks Liquidity

The second research objective had sought to establish whether stock split announcements have an effect on stock liquidity. At the NSE, improved liquidity has been cited as one of the main reasons put forward to explain the reason why companies split their shares. One of the main arguments in favour of an increased liquidity hypothesis after stock splits is the allegation

that small investors may have a preference for lower priced stocks. This type of investor typically faces considerable restrictions in terms of the amount available to invest in each share. This section seeks to measure possible liquidity effects by observing changes in the number of trades/deals and the number of shares traded around the split dates.

The null hypothesis on liquidity effects of stock splits was that stock splits have no liquidity effects around the respective ex-date. For the whole sample the results are first presented for the mean (the simple average of the 61 observations recorded for each period) of each variable. The resulting values were used to calculate the sample mean values. To test for differences between the pre and post-split periods, t-tests were conducted. Three firms (EABL, KENOL, and EA-CABLE) were excluded from the analysis due to lack of data on the number of trades/deals and the number of shares traded around the split dates around the split dates. A parametric t-test was used for differences in the means.

4.4.1. Effect of Split on the Number of Trades

Table 4.3 below presents the findings on parametric t-test for differences in the mean number of trades before and after the stock splits. The trades were captured for a 61-day period, comprising of 30 days before split and 30 days after split. The null hypothesis was that there is no significance difference between the mean number of trades (cum-split) and the mean number of trades (ex-split). The findings indicate that the null hypotheses were rejected for all firms at both 95% and 99% levels of confidence. This implies that the stock splits resulted to improved trading activities on the respective stocks' counters.

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Table 4.3: T-tests on the effects of split on the number of trades

	Mean number of trades		Mean Difference	T-statistic for the difference	Decision
Firm	Before	After			
BBK	175.07	417.52	242.45	$t_{(59)} = -4.171**$	Reject H_0
CMC	63.87	117.32	53.45	$t_{(59)} = -3.775**$	Reject H_0
ICDCI	109	462.58	353.58	$t_{(59)} = -10.016**$	Reject H_0
KCB	197.20	356.61	159.41	$t_{(59)} = -4.295**$	Reject H_0
SASINI	53.70	77.65	23.95	$t_{(59)} = -2.107*$	Reject H_0

Source: NSE (2008)

* Denotes Significance at 5% level (P-values < 0.05); Critical values = 1.96 (at 5%)
** Denotes Significance at 1% level (P-values < 0.01); Critical values = 2.57 (at 1%)

H0: There is no significance difference in the mean number of trades (cum-split) and the
Mean number of trades (ex-split)

H1: There is a significance in between the mean number of trades (cum-split) and the
Mean number of trades (ex-split)

4.4.2. Effect of Split on the Number of Shares Traded

Table 4.4 below presents the findings on parametric t-test for differences in the mean number of shares traded before and after the stock splits. The observations were made for a 61-day period, comprising of 30 days before split and 30 days after split. The null hypothesis was that there is no significance difference between the mean number of shares traded (cum-split) and the mean number of shares traded (ex-split). The findings indicate that the null hypotheses were rejected for all firms at both 95% and 99% levels of confidence, (except Sasini Limited). Being a stock of company

thriving in the agricultural sector, investors might have developed low interest in the stock (post-split) due to poor performance of the agricultural sector as compared to other sectors such as financial services and manufacturing. The findings therefore imply that the stock splits resulted to improved trading in terms of the volume of the shares traded on the respective stocks' counters.

Table 4.4: T-tests on the effects of split on the number of shares traded

	Mean number of shares		Mean Difference	T-statistic for the difference	Decision
Firm	Before	After			
BBK	18,6881.80	45,4554.58	267,672.78	$t_{(59)} = -4.306**$	Reject H_0
CMC	89,662.00	434,442.20	344,780.29	$t_{(59)} = -3.556**$	Reject H_0
ICDCI	71,416.73	629,093.84	557,677.11	$t_{(59)} = -7.194**$	Reject H_0
KCB	252,356.43	646,577.23	394,220.79	$t_{(59)} = -4.181**$	Reject H_0
SASINI	68,684.83	75,543.71	6,858.88	$t_{(59)} = -0.353$	Accept H_0

Source: NSE (2008)

* Denotes Significance at 5% level (P-values < 0.05); Critical values = 1.96 (at 5%)

** Denotes Significance at 1% level (P-values < 0.01); Critical values = 2.57 (at 1%)

H0:   There is no significance difference in the mean number of shares traded (cum-split)
     and the mean number of shares traded (ex-split)

H1:   There is a significance difference in the mean number of shares traded (cum-split)
     and the mean number of shares traded (ex-split)

The findings in Tables 4.3 and Table 4.4 therefore lead to the conclusion that stock splits had liquidity effects around the respective ex-date. This is

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evidenced by improved trading in terms of the number of trade deals and the number of shares traded.

4.5. Effect of Share Split on Changes in Systematic Risk

The third objective of the study had sought to ascertain whether stock split announcements affect the risk levels of the splitting firm's listed stock. If systematic risk changes, in other words, if the stock Beta (estimated according to a market model) changes, then the stock price should adjust to take into account this new risk. In a different setting (long-term abnormal returns), Boehme (2001) found that the positive abnormal returns associated to part of his sample of stock splits could be explained by ex-post reductions in systematic risk. To evaluate the post-split changes in systematic risk, the stock's beta was used using the closing price of each day. The time frame used was similar to the one presented earlier, that is, the 61-day trading period. The findings are presented in Table 4.5 below.

Table 4.5: T-tests on the changes of beta (pre-split and post-split)

Firm	Beta Changes		Mean Difference	T-statistic for the difference	Decision
	Before	**After**			
BBK	1.098	9.118	8.020	$t_{(59)} = -62.64**$	Reject H_0
CMC	0.512	5.514	5.002	$t_{(59)} = -39.07**$	Reject H_0
EABL	0.212	9.447	9.235	$t_{(59)} = -72.13**$	Reject H_0
ICDCI	0.682	-11.611	12.293	$t_{(59)} = 96.01**$	Reject H_0
KCB	1.673	-7.263	8.936	$t_{(59)} = 69.79**$	Reject H_0
KENOL	0.428	4.965	4.537	$t_{(59)} = -38.77**$	Reject H_0
SASINI	0.290	3.513	3.223	$t_{(59)} = -25.17**$	Reject H_0

Source: NSE (2008)

* Denotes Significance at 5% level (P-values < 0.05); Critical values = 1.96 (at 5%)

** Denotes Significance at 1% level (P-values < 0.01); Critical values = 2.57 (at 1%)

H0: There is no significant change in stock betas between the cum-split and ex-split Dates

H1: There is a significant change in stock betas between the cum-split and ex-split Dates

The null hypothesis on systematic risk changes was that stock splits are not associated with changes in the stock's systematic risk, measured by the stock's market model's Beta. Equation (3) was applied in estimation of stock beta. The hypothesis was tested by comparing the pre-split and post-split betas. Parametric T-test was used to establish if the mean betas (pre-split and post-split) were significantly different at 95% and 99% levels of confidence. The findings in Table 4.5 indicate that the null hypotheses were rejected for all firms at both 95% and 99% levels of confidence. This implies that the stock splits resulted to significant changes in stock betas of the respective firms. This leads to the conclusion that stock splits are associated with changes in the stocks' systematic risks, measured by the stock's market model Beta.

4.6. Chapter Summary

The chapter has captured three areas. First, the chapter has revealed the effects of stock splits on valuation of shares of the splitting firms. Secondly, the chapter has revealed the effects of stock splits on the liquidity of shares of the splitting firms. Finally, the chapter has presented findings on the relationship between stock splits and changes in stocks' systematic risks. The next chapter provides a detailed discussion of the findings, besides the conclusions derived thereof.

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CHAPTER FIVE

5.0. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary and discussion of findings derived from the study. The chapter also details the conclusions and recommendations to the management of the listed firms, the Nairobi Stock Exchange and other stakeholders in financial services sectors regarding the effects of stock splits by listed firms.

5.2. Summary

5.2.1 General and Specific Objectives

The general objective of this study was to determine whether stock split announcements made by firms quoted at the NSE during the period 2004 to 2006 had any valuation effect on the announcing firm's stock price as listed on the NSE.

The specific objectives of the study were:-

- To determine whether there is a relationship between a stock split announcement and the valuation of announcing firm's share price.
- To establish whether stock split announcements have an effect on stock liquidity.
- To ascertain whether stock split announcements affect the risk levels of the splitting firm's listed security.

5.2.2 Methodology

In order to achieve the objectives of the study, a standard event study methodology was used to measure the impact of the stock split announcement on the price, liquidity, and risk of the related share. The method involved measuring abnormal trading during the event window

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using the prior period (estimation window) comparison. The standard market model was used in computing statistics that were used in testing three hypotheses that were designed to test the three aspects. Parametric T-tests were applied in testing of hypotheses.

5.2.3 Findings

The major findings of the study established that stock splits by the splitting firms do not result do any significant changes in the valuation of their shares at the Nairobi Stock Exchange. Secondly, the findings revealed that stock splits had liquidity effects around the respective ex-date. Finally, the study established that stock splits resulted to significant changes in stock betas of the respective firms.

5.3. Discussion of Findings

5.3.1. Effect of Stock Split Announcement on Valuation of Firm's Shares

As mentioned in section two, some evidence is consistent with splitting firms enjoying a period of rapid (relative and absolute) stock price appreciation in the pre-announcement period. For instance, Ikenberry et al. (1996) present evidence consistent with this assertion, although claiming that managers' decision is conditional on their expectations regarding the firms' future performance.

The analysis of the firm's price performance was made in relative terms by comparing it with the performance of the NSE 20 share index. The comparison period was comprised of thirty days leading to the announcement. The findings of the study established that stock splits announcements by the splitting firms do not result do any significant changes in the valuation of their shares at the Nairobi Stock Exchange. This

means that stock splits did not induce positive abnormal returns either in the short run (around the announcement dates and ex-dates).

In theory a stock split is merely an accounting change, which leaves investors no better or worse off than they were before the split. One condition for approval for a stock split at the NSE is that the event should not affect the market capitalization of the firm. As a result, the stocks of the splitting firms continue trading ex-split without any significant changes in pricing after adjustments based on the split factor. This explains why there are no significant changes in abnormal returns around the cum-split dates and ex-dates). This is in line with the "Self selection hypothesis" of Ikenberry et al. (1996) which states that managers use stock splits to move share prices into a trading range, but condition their decision to split based on expectations about the future performance of the firm.

5.3.2. Effect of Stock Split Announcement on Stock Liquidity

The findings revealed that stock splits had liquidity effects around the respective ex-date. This was evidenced by improved trading in terms of the number of trade deals and the number of shares traded around the ex-dates. Proponents of the stock split liquidity hypothesis conjecture that the split-induced reduction in a firm's stock price provides an expanded trading base for the firm. The improved trading base results in greater volume and, therefore, improved liquidity. In addition, stock splits results in an increase in the number of shareholders of the splitting firms because the low pricing of the stocks during ex-dates attracts more of small and institutional investors. This agrees with Lamoureux and Poon (1987) who reported a substantial increase in the number of shareholders for splitting firms. This

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suggests that any increase in liquidity is potentially a function of the ownership structure of the firm.

The findings also agree with empirical findings by Dennis and Stickland (2002) that there exist liquidity gains for firms that split their stock. Schultz (2000) also concludes that an increase in small trades occurs subsequent to the split. Besides, the findings are in agreement with the "liquidity hypothesis" of Copeland (1979) which asserts that the most common rationale behind stock splits is that there is an optimal price range for securities. This optimal price range is a relatively lower price for the underlying security. The hypothesis assumes that the liquidity/marketability of the security will improve after the split, as the lower price of the stock will attract more small investors.

5.3.3. Effect of Stock Split Announcement on Risk Levels of Listed Shares

The study established that stock splits resulted to significant changes in stock betas of the respective firms. This implies that stock splits are associated with changes in the stocks' systematic risks, measured by the stock's market model Beta. This is because stock splits bring about a significant shift in investor clientele, which further fuels stock volatility. The low pricing of stock ex-split implies that a higher fraction of post-split trades are made by less sophisticated investors, as individual investors increase and professional investors reduce their aggregate buying activity following stock splits. This behavior supports the common practitioners' belief that stock splits help attract new investors and improve stock liquidity. The shift in clientele also influences return properties, price discovery, and asset prices: stocks exhibit stronger serial correlation after splits; stocks co-move more with the market index; and the introduction of

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new investors explains part of the positive post-split drift puzzle. The findings are in agreement with empirical findings of Niini (2000) who found ex-date volatility shift in about half of the splitting stocks on both Helsinki and Stockholm stock markets. Other explanations fronted to justify changes in systematic risks include the higher number of trades following the split ex-date and increased price discreteness.

5.4. Conclusions

The discussions above therefore lead to the following conclusions.

5.4.1. Effect of Stock Split Announcement on Valuation of Firm's Shares

Stock splits do not result to any significant changes in the valuation of their shares at the Nairobi Stock Exchange. This is because for a share split to be approved by the board of the NSE, the NSE rules require that the management of the splitting firm should prove that the share split will not result to changes in the market capitalization of the firm post split. As a result, share splits of the listed firms therefore result into adjustments in price and volumes based on the split factor. The pre-split valuation of the firm is therefore retained post-split.

5.4.2. Effect of Stock Split Announcement on Stock Liquidity

Stock splits of the splitting firms experience liquidity effects around the respective ex-dates. This is because the number of trades seems to increase, lending some support to the hypothesis that the trading by small investors increases post-split.

5.4.3. Effect of Stock Split Announcement on Risk Levels of Listed Shares

Stock splits result to significant changes in stock betas of the respective firms. This implies that stock splits are associated with changes in the

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stocks' systematic risks, measured by the stock's market model Beta. This is due to a significant shift in investor clientele, which further fuels stock volatility.

5.5. Recommendations

5.5.1. Recommendations for Improvement

5.5.1.1. Stock Split Announcements and Valuation of Splitting Firms' Shares

Stock splits by the splitting firms do not result do any significant changes in the valuation of their shares at the Nairobi Stock Exchange. Therefore, the board of the NSE can apply these findings to allow over-valued stocks to undergo splits since it was found to have no significant effect on the changes in market capitalization or the shareholding structure of the splitting firms.

5.5.1.2. Stock Split Announcements and Stock Liquidity

The study established that share splits enhance liquidity of shares in the market as well as expanding the trading base for the firm. The improved trading base results in greater volume and, therefore, improved liquidity. Therefore, the management of listed firms should propose stock splits as a measure of making their stocks more attractive and affordable to small investors. This should take place when the stock begins to record low number of trade deals and low number of traded shares as a result of their high value in the market. Secondly, the listed firms may opt to split their shares in regard to "the neglected-firm hypothesis". It states that if there is little known about a firm its shares trade at a discount. Thus, firms use the split to both draw attention and ensure that information about the company is going to be spread wider than before. This will enhance both the image and the reputation of the firm.

5.5.1.3. Stock Split Announcements and Risk Levels of Listed Shares

The study established that stock splits result to significant changes in stock betas of the respective firms. This can be regulated by revocation of the "free-trading/ open market rule" at the NSE which allows the shares to trade at the best bid offers on the first day of trading ex-split. This will cushion the ex-split stock and the entire market to the effects of stock volatility such as those witnessed when dealers execute trades based on best bids and offers on the first day of trade.

5.5.2. Recommendations for Further Research

The study had sought to determine whether stock split announcements made by firms quoted at the NSE during the period 2004 to 2008 had any valuation effect on the announcing firm's stock price as listed on the NSE. The study relied on data from secondary sources. Therefore, further research should incorporate a survey of the conditions and the strategic objectives that drive the management of listed firms into announcing stock splits.

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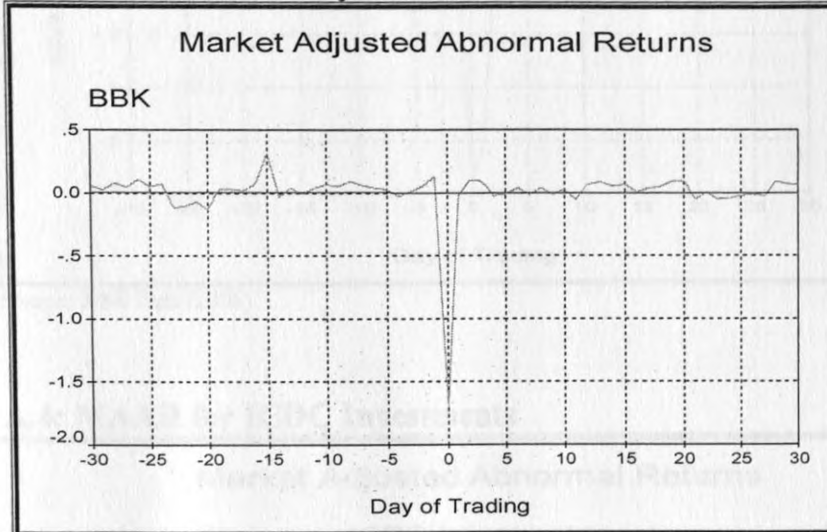
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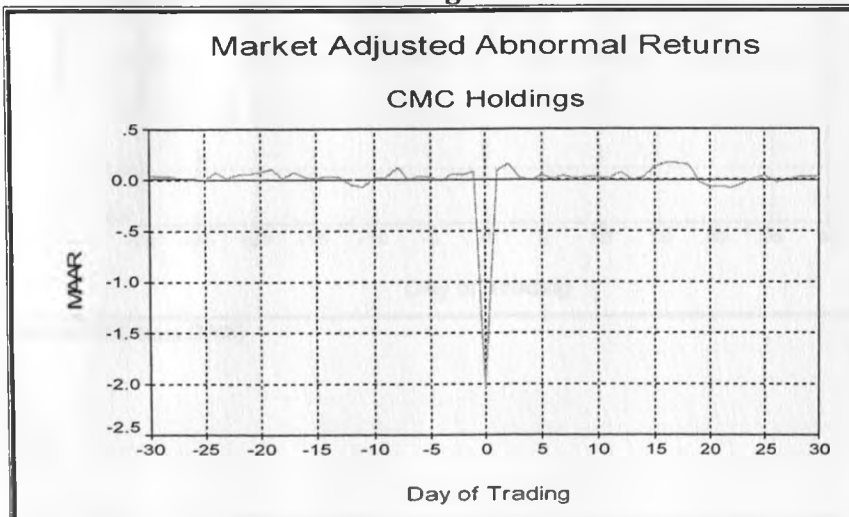
Appendix I: MAAR Trend Charts

Figure A.1: MAAR for Barclays Bank

Figure A.2: MAAR for CMC Holdings

Figure A.3: MAAR for EABL

Market Adjusted Abnormal Returns

EABL
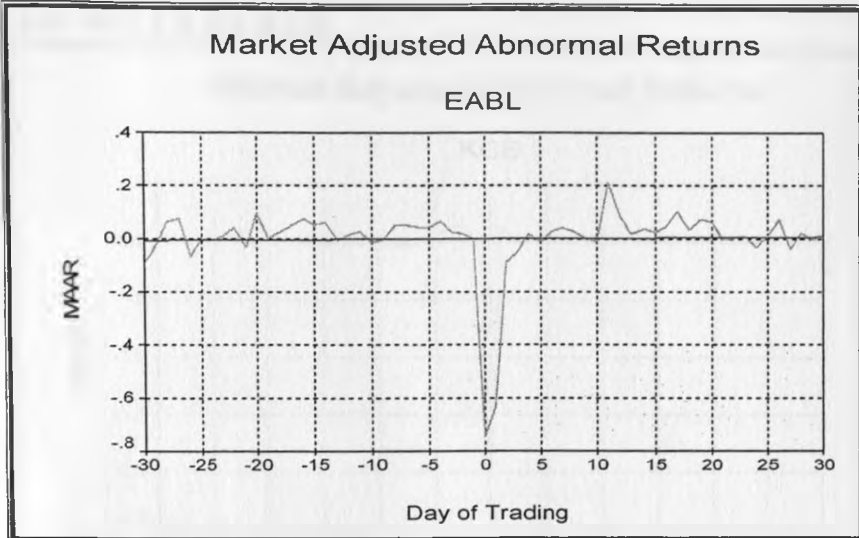
Figure A.4: MAAR for ICDC Investments

Market Adjusted Abnormal Returns

ICDC Investments
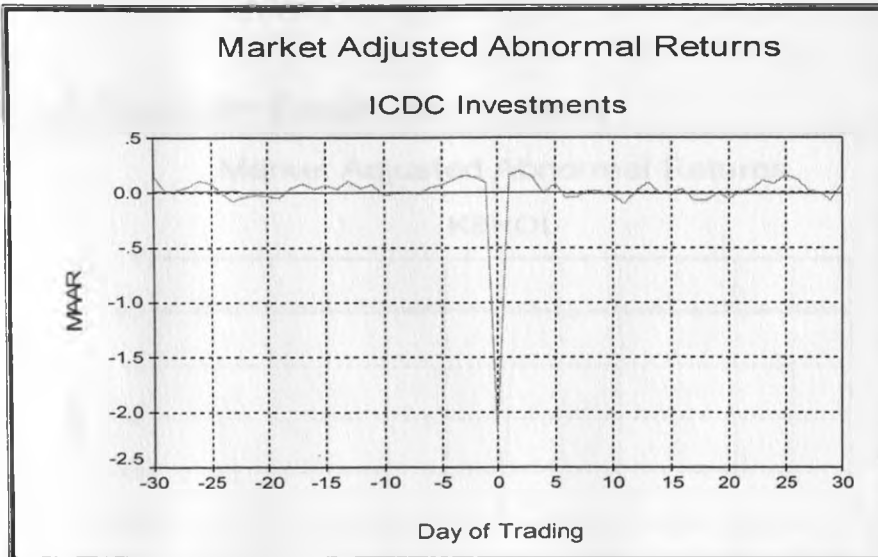
Figure A.5: MAAR for KCB

Market Adjusted Abnormal Returns

KCB
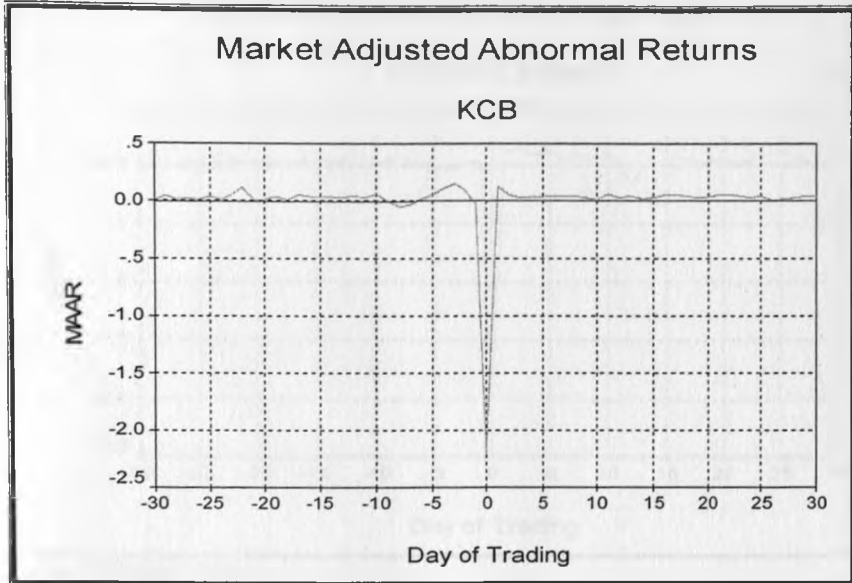
Figure A.6: MAAR for Kenol/Kobil Petroleum

Market Adjusted Abnormal Returns

KENOL
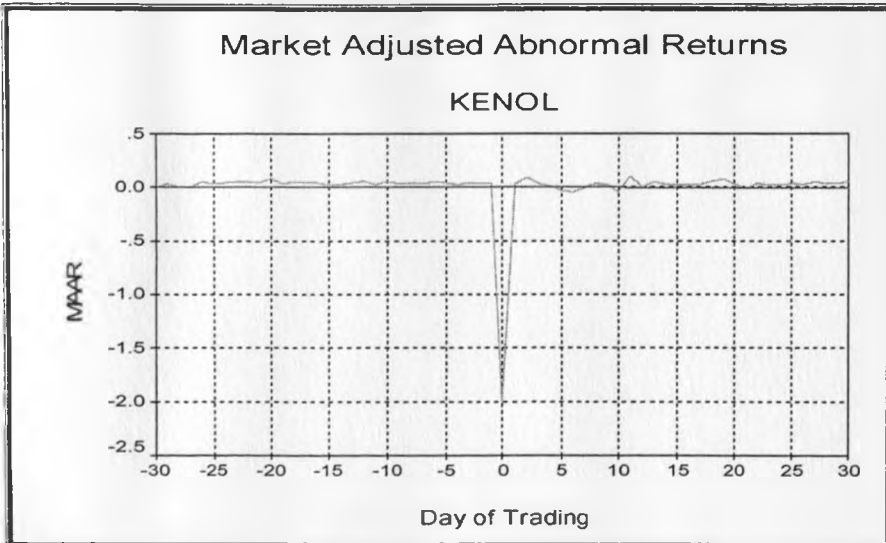
Figure A.7: MAAR for Sasini limited

Market Adjusted Abnormal Returns
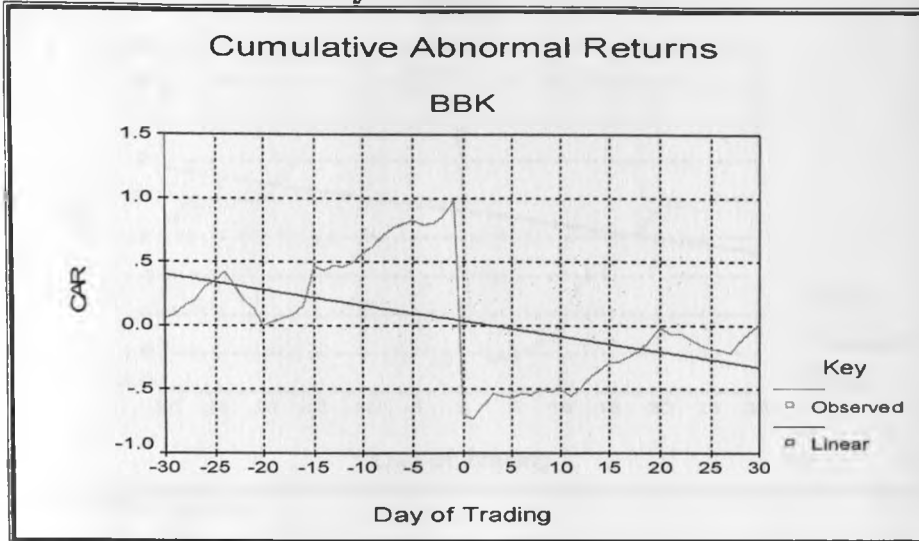
SASINI Limited

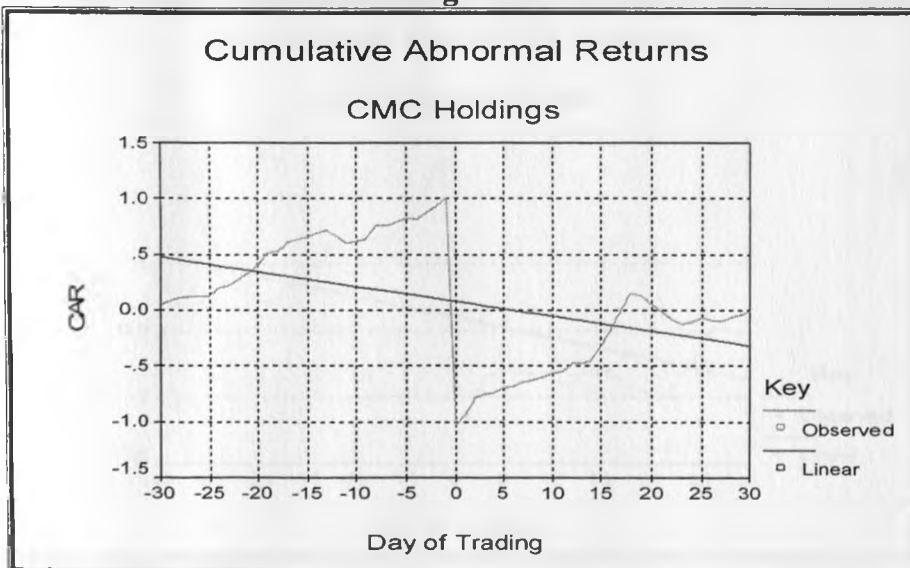Source: NSE Data (2008)

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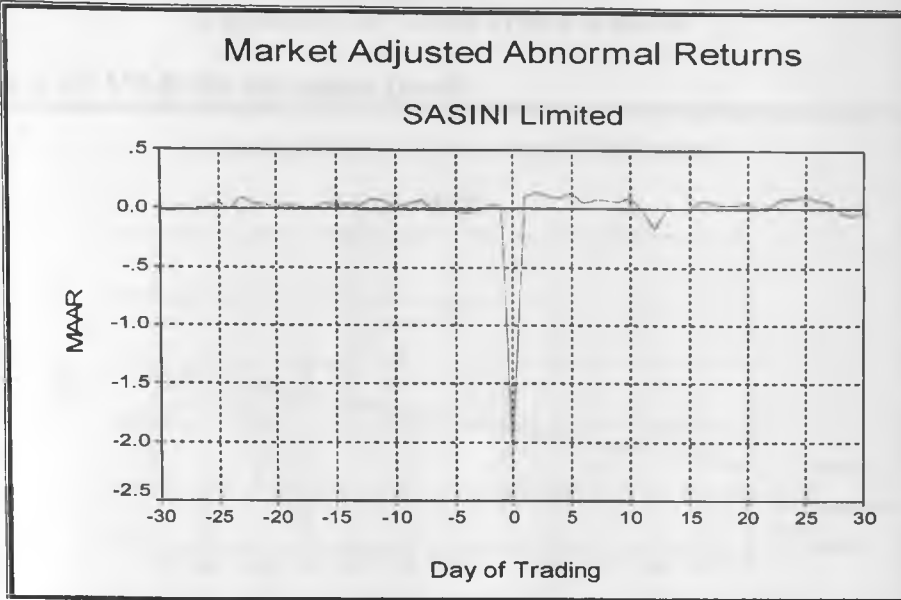
Appendix II: CAR Trend Charts

Figure A.8: CAR for Barclays Bank
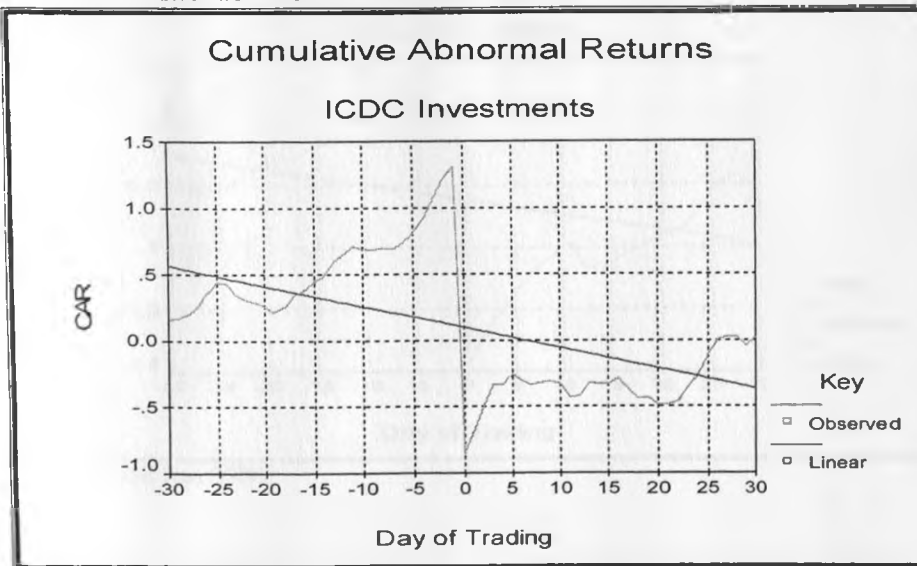

Source: NSE Data (2008)

Figure A.9: CAR for CMC Holdings

Source: NSE Data (2008)

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Figure A.10: CAR for EABL

Cumulative Abnormal Returns

EABL
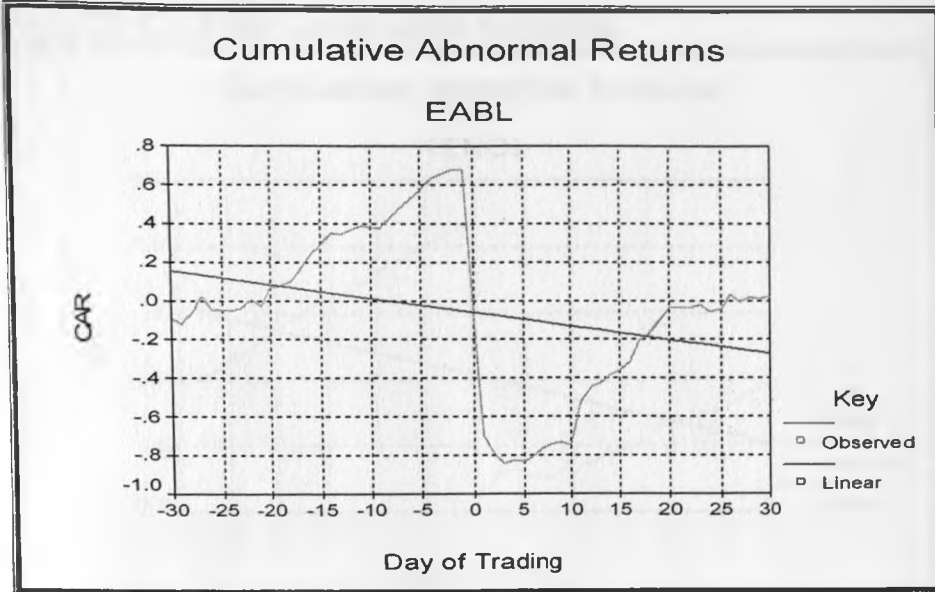
Figure A.11: CAR for ICDC Investments
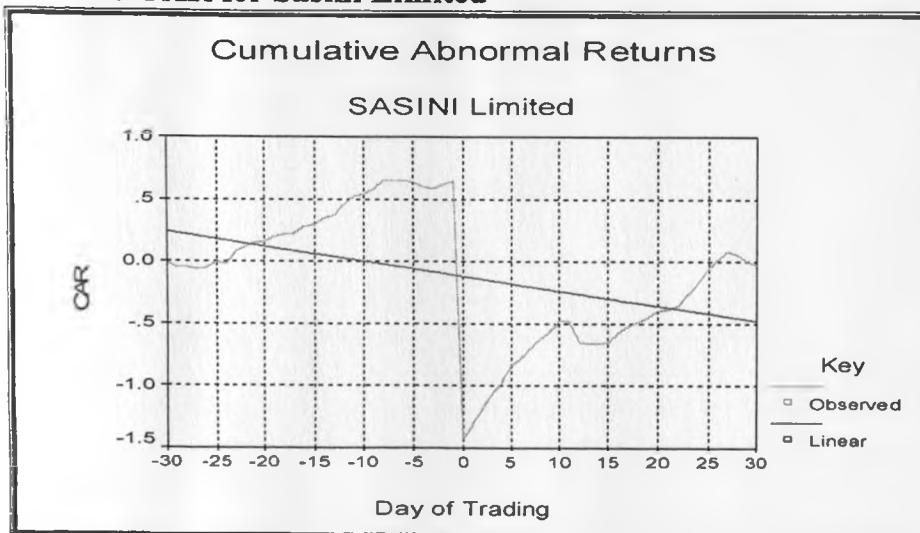

Cumulative Abnormal Returns
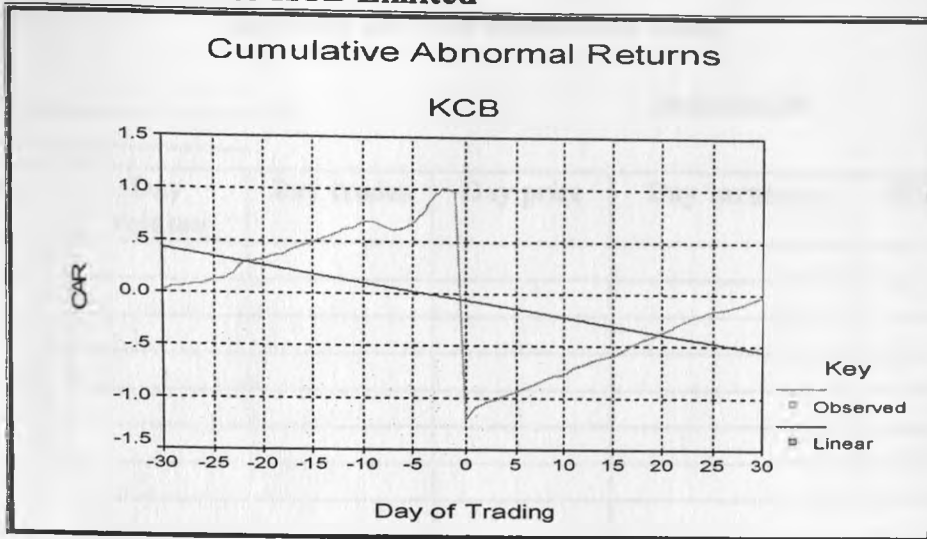
ICDC Investments

Figure A.12: CAR for Kenol/Kobil Petroleum
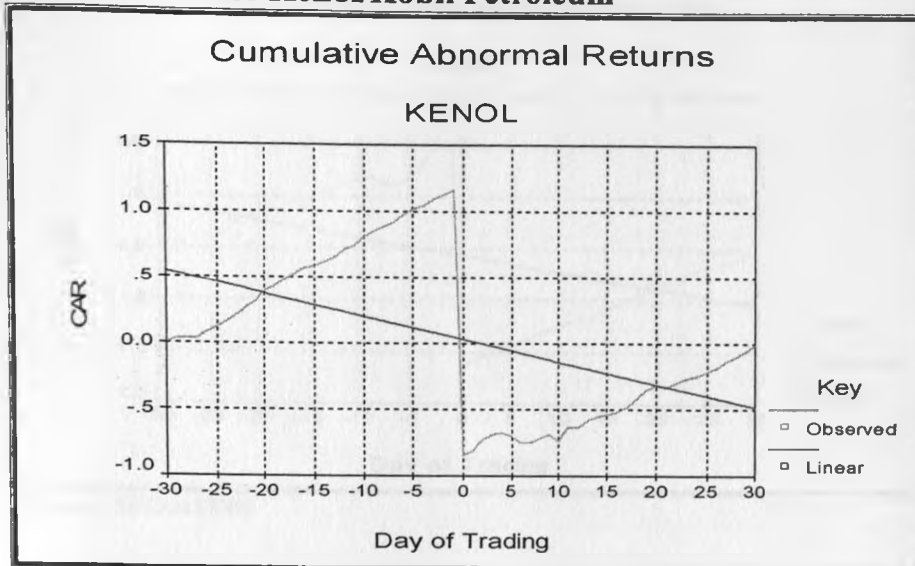
Source: NSE Data (2008)

Figure A.13: CAR for Sasini Limited

Source: NSE Data (2008)

Figure A.14: CAR for KCB Limited

Cumulative Abnormal Returns

KCB

Day of Trading

Appendix III: Data Observation Sheet

Firm _____   **Date of Split**

_____

Day	Day volume	Day trades	Day price	Day turnover	NSE Index
-30					
-29					
-28					
-27					
-26					
-25					
-24					
-23					
-22					
-21					
-20					
-19					
-18					
-17					
-16					
-15					
-14					
-13					
-12					
-11					
-10					
-9					
-8					
-7					
-6					
-5					
-4					
-3					
-2					
-1					
Split Date					
1					
2					
3					
4					
5					
6					
7					
8					
9					

61

10					
11					
12					
13					
14					
15					
16					
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21					
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30					