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FULFILLMENT OF DEGREE OF MASTER OF
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FACULTY OF COMMERCE
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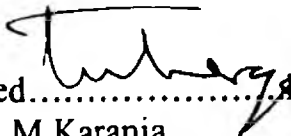
Declaration

This project is my original work and has never been presented for a degree in any other university.

Signed..........Date..26/03/2003

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

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Dedication

To my late mum, May God Rest Her Soul in Eternal Peace.

Acknowledgment.

It is difficult and perhaps impossible for a single mind to accomplish work as hard as this management project and a masters degree alone. There are people who helped me financially, physically, mentally and even spiritually and I cannot forget to thank them for their support. First and foremost I wish to thank the University of Nairobi for awarding me a scholarship that assisted me to carry on with my studies uninterrupted.

Special and heartfelt thank you goes to Mr. J.M Karanja as my supervisor for his guidance throughout the research. I cannot forget the entire staff of the faculty of commerce who guided me throughout my course work and even supported me in the scholarship saga.

To my classmates and group members whom we enriched one anothers' life and shared common experiences during the entire MBA programme, I say "Thank You All".

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Abbreviations

EMH -	Efficient Market Hypothesis
ECM -	Efficient Capital Markets
FIFO -	First In First Out
LIFO -	Last In First Out
CAPM-	Capital Assets Pricing Model
SUE -	Standardized Unexpected Earnings
P/E -	Price Earning ratio
IPO -	Initial Public Offering
NYSE -	New York Stock Exchange
EPS -	Earnings Per Share
FFJR -	Fama, Fisher Jensen and Roll
CMA -	Capital Markets Authority
CP-	Commercial Paper
NSE -	Nairobi Stock Exchange
GDP -	Gross Domestic Product
NPV	Net Present Value

Abstract

The focus of this study was to determine the price impact of commercial paper issue announcement on stock prices in NSE. This was achieved by examining whether the average abnormal returns surrounding the commercial paper issue announcement was statistically different from zero.

The research designed to achieve this is presented in chapter three where market model was used to derive the expected returns and a t-test statistic used to test the hypothesis.

Data analysed for eleven (11) companies showed significant price adjustment for companies, which issued the commercial papers. The results concluded that NSE is in the Semi-strong form of efficiency and commercial paper issue is good news to investors.

It's hoped that this study will be a valuable addition to the scanty body of knowledge concerning market efficiency in NSE and will serve as a basis for future research.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Market efficiency is clearly the dominant micro-economic goal, because an efficient market provides the correct resource allocation decisions and economists are concerned with how correctly and timely new information is captured and transmitted into the resource allocation mechanism.

When economists speak of capital markets as being efficient, they usually mean that they view asset prices and returns as being determined as the outcome of supply and demand in a competitive market, peopled by rational traders. These rational traders rapidly assimilate any information that is relevant to the determination of asset prices or returns and adjust prices accordingly. Hence individuals do not have different comparative advantages in the acquisition of information. It follows that in such a world there should be no opportunities for making a return on a stock that is in excess of a fair payment for the riskiness of that stock. In short, abnormal profits from trading should be zero. Thus agents process information efficiently and immediately incorporate this information into stock prices. If current and past information is immediately incorporated into current prices then only new information or "news" should cause changes in prices. Since news is by definition unforecastable then price changes (or returns) should be unforecastable.

Market efficiency is a description of how prices in competitive markets respond to new information. The arrival of new information to a competitive market can be likened to the arrival of a lambchop to a school of fresh eating piranna, as the instant lambchop hits the water, there is turmoil as the fish devour the meat. Very soon the meat is gone leaving only the worthless bone behind and the water returns to normal.

Similarly when new information reaches a competitive market, there is much turmoil as investors buy and sell securities in response to the news causing prices to change. Once

prices adjust all that is left of information is the worthless bone. No amount of gnawing on the bone will yield any meat and therefore, no further study of old information will yield anything.

The greatest amount of research in finance has been devoted to testing the semi strong efficiency; others have tested share price sensitivity to other events. Examples of these studies include stock split studies, initial public offering, exchange listing, announcement of accounting changes, dividend announcements, world events etc.

Fama et al (1969) in their FFJR studies asserts that stock splits alone does not cause higher rates of return because they add nothing to the value of the firm. They discovered that prices of shares increased due to increased dividends associated with split of stocks. Also they found out that stock that split but did not increase their dividend rate experienced abnormal price decline and their study supported efficient market hypothesis (EMH).

Frank and Kenneth (1969) assert that underwriters under-price initial public offering because of the uncertainty about price surrounding them. Miller and Frank (1987) found that price adjustments takes place within one day after the offering. Hence it is only a few investors who received allocation of the original issue who will benefit. Ritter (1991) shows that investors who acquire stock after initial adjustments do not experience abnormal returns.

Listing in the stock exchange is expected to increase market liquidity of the stock and add to its prestige. William and Roger (1993) asserts that listing does not cause a permanent change in long run value of the firm. Dharan and Ikenberry (1995) indicated that profit opportunity exist immediately after announcement that a firm is applying for listing but declines after listing.

Accounting changes that affect the value of the firm should cause a rapid change in stock prices while those which causes changes to reported earning has no effect, a change from First in First Out (FIFO) to Last In First Out (LIFO) during periods of high inflation causes a

decline in reported earnings hence reduced tax expenses. This result in increased stock price due to tax savings.

Pettit (1972), Watts (1973), Charest (1978), Aharony and Swary (1980) and Agrawal and Mullins (1983) carried out tests on examination of dividend announcements. Their findings were similar to other event studies in that they found that market seems to adjust rapidly to new information.

Reilly and Drzycimski (1973) examined the adjustment of stock prices to significant world events. The results consistently indicated that the major adjustment in stock prices took place during the time interval between the close before the announcement and the open after the announcement.

Ball and Brown (1968) examined the differential stock price movement for companies that had experienced "good" earnings report and stock price movements for companies that had experienced "poor" earnings report. The results generally confirmed expectations that companies with abnormally good earnings reports also experienced positive abnormal stock performance. However, most of the stock price adjustments took place prior to the result of the annual report. Ondigo H. O. (1995) also confirmed the above findings, as he found out that Annual Reports announcements do not cause prices to change as such news were already released by timely media and hence already discounted by market participants.

Parkison (1987) tested both the weak and semi strong form of the EMH. He reported findings conflicting the EMH both for weak and semi strong form.

The majority of the evidence has supported the semi-strong efficient market hypothesis because the results have indicated that stock prices adjust rapidly to the announcement of new information and investors are typically not able to derive above average returns from acting on important new information once it is available. However, most of these studies were carried out in developed Nations like US and UK whose markets characteristics are different from Developing Nations.

A market that is in semi-strong form renders the work of technicians and fundamentalists irrelevant as technicians uses past patterns of share prices and volume of trading statistics to reach predictions for the future while fundamental analysis examines a range of economic factors which may help determine the intrinsic value of a share and hence they find undervalued or overvalued shares.

1.2 Commercial Paper Market in Kenya

Commercial paper is a short term unsecured promissory notes issued by creditworthy issuers. It is a low cost alternative to bank loans (Fischer & Jordan 2001). Commercial paper in Kenya is a very recent development compared to other developed nations like United States and Europe as the first issue can be traced in 1994 by Brookebond. Until recently the Central Bank of Kenya limited the issuance of commercial paper to companies listed on the Nairobi Stock Exchange. In the absence of credit rating agency in Kenya, the Central Bank of Kenya undoubtedly reasoned that investors could assess the creditworthiness of these issues themselves as those listed companies published their financial statements periodically.

However, in 1997, the Capital Markets Authority issued it's own draft "Guidelines for the Issuance of Corporate Bonds and Commercial paper" which effectively allowed non listed companies which meet certain criteria to issue commercial paper. The Central Bank's role is currently limited to the issuance of letters of no objection to the placing agents after assessing their financial status with the capital markets authority (CMA) as the regulatory body.

The utilization of commercial paper has increased tremendously since 1997, currently there are 15 Commercial Papers valued at Seven Thousands, Five Hundred and Fifty million outstanding (CMA report 2001)

The principal advantage of commercial paper as a source of short term financing is that it is generally cheaper than a short term business loan from a commercial bank as it may be several percent lower than the prime rate of bank loan to high quality borrowers (Van Home

1995). The incremental interest savings should result in increased cash flows for the firm possibly translating to higher dividends, more investments etc. for the investor. If other things are held constant, then an implied increase in corporations expected net operating cash flow, the value of the firm should rise and there should be a corresponding increase in the value of the firms stock prices.

1.3 Statement of the Problem

Since interest rate liberalization in 1991 by the government of Kenya, the spread between the deposit and borrowing rates from commercial banks have been wide. In fact cost of loans has been considered to be too high by many experts. In Kenya, we have witnessed the parliament voicing its concern on interest rates by passing a bill to control the spread between deposits and borrowing rates in a controversial central bank amendment Act (Donda bill) which is yet to be implemented. This has negatively affected the net cash flows of the borrowing firms. Hence companies have been searching for financial products that can help reduce the impact of interest on their cash flows and earnings, and commercial paper is one such innovation.

Commercial paper as alternative to straight commercial bank loans can lead to significant interest savings, and increase the borrowing firms net cash flows. In a market that is semi strong efficient such implied increase in the corporations expected net operating cash flows, *ceteris paribus*, should instantaneously result in increased stock prices.

Event studies have been carried out to test the semi strong form of market efficiency, for example Fama et al (1969) carried a study on Stock Splits and discovered that prices of shares increased due to increased dividends associated with splits of stocks. Frank and Kenneth (1969) carried a study on Initial Public Offering and found that Underwriters under price initial price offerings because of the price uncertainties surrounding them. Miller and Frank (1987) found out that price adjustments in initial public offerings take place within one day after the offering, while Ritter (1991) shows that investors who acquire initial public offered stocks after initial adjustments do not experience abnormal returns.

The above studies have supported the Semi strong form of market hypothesis because the results have indicated that stock prices adjust rapidly to the announcement of new information and investors are typically not able to derive above average returns from acting on important new information once it is available. However, most of these studies were carried out in developed nations such as United States and United Kingdom whose market characteristics are different from developing nations.

This study therefore determines whether stock prices in NSE (Nairobi stock Exchange) reacts to commercial paper issue announcement by companies issuing them, and if they do is the news “good” or “bad” news. The study also provides some evidence on the semi-strong form efficiency of the Nairobi Stock Exchange.

1.4 Objectives of the Study

- (i) To determine whether stock prices adjust to commercial paper issues.
- (ii) To determine the direction of the stock price adjustment.

1.5 Hypothesis

$H_0: u = 0$ (The average abnormal returns surrounding commercial paper issue announcement date is not significant).

$H_A: u \neq 0$ (The average abnormal returns surrounding commercial paper issue announcement date is significant.)

1.6 Justification of the Study

Commercial paper in Kenya is a very recent development compared to other developed nations. Hence there is need to assess the investors reactions to them so that any company considering to issue commercial paper can predict the reaction of investors and it's impact on it's share prices.

1.7 Importance of the Study

(i) Investors

In an efficient market investors cannot expect to beat the risk adjusted market average return except by chance. Investors therefore, should seek to maximize the effectiveness of diversification in their portfolio, once a well-diversified portfolio is held, the investors, should adopt a very passive holding strategy.

(ii) Investment Advisors

Technicians and fundamentalists who use historical share prices and publicly available information are rendered useless in semi-strong form efficient markets. Hence they should change their strategies to advising investors on how to hold a diversified portfolio as nobody can consistently beat the market except by chance.

(iii) Management of Companies

Companies intending to issue commercial paper will have prior knowledge of the direction of share price change (whether it is good or bad news).

(iv) Government and Policy Makers

Regulatory bodies should make sure that companies issuing financial statements make full disclosures on the happenings of their company.

(v) Academicians

This study will act as a basis for further research as much more need to be done on the Nairobi Stock Exchange (NSE) regarding market efficiency.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Efficient Capital Markets (Ecm)

The primary role of the capital market is allocation of ownership of the economy's capital stock. 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 firms activities under the assumption that security prices at any time "fully reflect" all available information. A market in which prices always "fully reflect" available information is called "efficient" (Fama 1970).

Assumptions of ECM

- i) A large number of competing profit maximizing participants analyze and value securities and are acting independently of the other.
- ii) New information regarding securities comes to the market in a random fashion, the timing of one announcement is independent of the other.
- iii) The competing investors attempt to adjust security prices rapidly to reflect the effect of new information.

Most of the early work related to Efficient Capital Markets was based on the random walk hypothesis, which contended that changes in stock prices occurred randomly. This early academic work contained extensive empirical analysis without much theory behind it. Fama (1965) attempted to formalize the theory and organize the

growing empirical evidence. He presented the efficient market theory in terms of a fair game model.

2.2 Expected Return or Fair Game Model

Unlike work done under the random walk hypothesis, which dealt with price movement over time, the fair game model deals with price at a specified point in time. It assumes that the price of a security fully reflect all available information at that point in time. The model requires that the price formation process be specified in enough detail so that it is possible to indicate what it means by "fully reflect". Most of the available models of equilibrium prices, formulate prices in terms of rates of return that are dependent on alternative definitions of risk. All such expected return theories of price formation can be described notationally as follows:

$$E(P_{j,t+1} / Q_t) = 1 + E(r_{j,t+1} / Q_t) P_{j,t}$$

Where:

E = price value operator

$P_{j,t}$ = Price of security j at time t .

$P_{j,t+1}$ = price of security j at time $t + 1$

$r_{j,t+1}$ = the one period percent rate of return for security j during period $t + 1$

Q_t = The set of information that is assumed to be "fully reflected" in the security price at time t .

Hence expected price of security j given full set of information at time t (Q_t) is equal to current price times one plus expected return on security j .

Expected return should reflect available information including state of the world economy like inflation, interest rates, earnings, gross domestic product, etc. Roberts (1959) & Fama (1970) divided efficient market hypothesis into three sub-hypothesis based on a different

notion of exactly what type of information is understood to be relevant in the phrase "All Prices fully reflect all relevant information". The three forms are:

- i) Weak Form EMH
- ii) Semi Strong EMH
- iii) Strong Form EMH

i) Weak Form EMH

Assumes that current security prices fully reflects all security market information including historical sequence of price, block trades, trading volume data, other market generated information like odd lot transactions, and transactions by exchange specialists or other original groups.

This hypothesis assumes that past rates of return and other market data should have no relationship with future returns (rate of return should be independent). Hence you would gain very little if any from buying or selling security based on past rates of return/past market data.

Weak Form Hypothesis Tests

Prediction Studies

Studies to predict future rates of return using available information includes

- ◆ Time Series Analysis
- ◆ Cross Sectional Studies

Time Series Analysis

Results of these studies indicated that there is limited success in predicting future returns based on short-term historical rates of returns. Instead, best estimate of future returns should use long-run historical rates of return.

Rozeff and Shiller (1984) postulated that the aggregate dividend yield (D/P) was a proxy for the risk premium on stocks. Their result indicated a positive relationship between dividend yield and future stock returns. Fama and French (1988) assert that a predictive power of future returns increased with time horizon of previous rates of returns considered. Balvers et al. (1990) Showed that within an efficient market framework, stock prices do not have to follow a random walk and long-run returns on stocks can be predicted as long as you predict aggregate output.

Keim and Stambaugh (1986) and Campbell (1991) considered divided yield and two variables related to the term structure of interest rates (default spread and horizon spread or terms structure). These studies find that these variables can be used to predict stock returns and bond returns and have been useful for predicting returns for foreign common stocks.

Pesaran and Timmermann (1995) considered a number of business cycle variables and found that the predictive power of various economic factors related to stock return changes through time and tends to vary with the volatility of returns.

Latane and Associates (1970) studied the usefulness of Quarterly results and consistently have failed to support the semi-strong EMH. Joy, et al (1977) examined firms that experienced unanticipated changes in quarterly earnings. Their results suggest that favorable information contained in quarterly earnings results (i.e. positive earnings surprises) is not instantaneously reflected in stock prices and that a significant relationship exist between the size of the earnings surprises and post announcement stock price change.

Joy and Jones (1979) noted problems in several of the earlier studies that they believed were remedied in subsequent studies. Ball (1978) reviewed 20 studies of price reaction to earning announcement and found that the post-announcement risk-adjusted abnormal returns are consistently positive, which is inconsistent with market efficiency. He contended that the abnormal returns are due to problems with the

CAPM (Capital Asset Pricing Model) used to derive expected returns, not market inefficiencies. Watts (1978) found significant abnormal returns even after making all the adjustments suggested by Ball. He explicitly showed that the abnormal returns were due to market inefficiencies rather than CAPM, but noted that the abnormal returns were small and not completely consistent over time. Rendelman, et al (1985) using a very large sample of daily returns provided evidence that large SUE (Standardized Unexpected Earnings) were accompanied by significant abnormal stock price changes. They also examined the impact of different risk adjustments and concluded that the results were not sensitive to the risk adjustments.

Foster, et al (1984) examined several reasons for the return drift following earnings announcements and confirmed the prior results using different earnings expectation models. The unexpected earnings explained over 80% of the subsequent stock price drift for the total time period and during several sub periods. Bernard and Thomas (1989) review the prior studies and attempt to explain this pervasive drift. These results indicate that the market has not adjusted stock prices to reflect the release of quarterly earnings as fast as expected by the semi-strong EMH and as a result, it appears that earning surprises can be used to predict return for individual stocks.

Calendar Studies:

Present evidence against semi-strong market efficiency. French (1980), Gibbons and Hess (1981) have documented the weekend effect. French found that mean return for Monday was significantly negative during the 5-year sub periods and during the full period. In contrast, the average return for the other four days was positive. Keim and Stambaugh (1984), Rogalski (1984), Smirlok and Stacks (1986) found similar results. Harris (1986) and Wang, et al. (1997). Another interesting pattern in stock prices is the so called year end effect, which has been documented by Branch (1977) Keim (1983), Reinganum (1981) Roll (1983) and Gultekin and Gultekin (1983) where investors tend to engage in tax selling at the end of the year to establish losses on stocks that have declined. After the new year, there is tendency to reorganize those stocks or to buy other stocks that look attractive.

Predicting Cross Sectional Returns

Basu (1977) and Peavy and Goodman (1983) examined publicly available (Price earning) ratio with adjustments, where they found that risk adjusted returns for stocks with lowest P/E ratio quartile were superior to those in highest P/E ratio quintile. Banz (1981) and Reinganum (1981) indicated that small firms consistently experienced significantly larger risk adjusted returns than the larger firms. Rosenberg, et al (1985) found a positive relationship between a firm's historical Book Value to Market Value ratio and future stock returns.

ii) Semi-Strong Form EMH

Asserts that security prices adjust rapidly to the release of all public information, that is current security prices fully reflect all public information. The semi-strong hypothesis encompasses the weak form hypothesis because all the market information considered by the weak form EMH such as stock prices, rates of return and trading volume is public. Public information also includes all non-market information such as earnings and dividend announcements, price to earnings ratios (P/E), dividend yield (D/P) ratios, book value-market value (BV/MV) ratios, stock splits, news about the economy and political news.

This hypothesis imply that investors who base their decision on important new information after it is public should not derive about average profits from their transaction because the security price reflects all such new public information.

Semi-Strong Form Hypothesis Tests

Event Studies

Studies here examine how stock prices react to significant economic information. Advocates of efficient market hypothesis expects returns to adjust very quickly to announcements of new information hence not possible for the investor to earn abnormal returns above average.

The greatest amount of research in Finance has been devoted to the effects of an announcement on share prices. These studies are known as "event studies". Initially event studies were undertaken to examine whether markets were efficient, in particular, how fast the information was incorporated in share prices. Dozens of studies confirmed, that share prices reacted rapidly to announcements, and in Expected ways where the direction of the price change and the likely impact were clear. Consequently, many researchers accept that information is rapidly incorporated in share price, and use event studies to determine what information is reflected in prices, and if it's impact is unclear, to determine whether the announcement is good or bad news. Examples of these studies include stock splits studies, initial public offering, exchange listing, announcement of accounting changes, dividend announcements, world events etc.

Stock split studies

The best known study of stock splits was conducted by Fama et al (1969). Cumulative average residuals were calculated from the simple market model using monthly data for an interval of 60 months around the split ex date for 940 splits between January 1927 and December 1959. Positive abnormal returns were observed before the split but not afterwards.

Fama et al (1969) speculated that stock splits might be interpreted by investors as a message about future changes in the firms expected cashflows. They Hypothesized that stock splits might be interpreted as a message about dividend increases, which in turn imply that the managers of a firm feel confident that it can maintain a permanently higher level of cash flows. To test this hypothesis the sample was divided into those firms that increased their dividend beyond the average for the market in their interval following the split and those that paid out lower dividends. The results revealed that stocks in the dividend "increased" class have slightly positive returns following the split. This is consistent with the hypothesis that splits are interpreted as message about dividend increases. This does not imply that higher dividend payout per se causes an increase in the value of the firm, but higher dividends are interpreted as signals that the future cash flows from the firm will increase. Of course, a dividend increase does not always follow a split. Hence the slight positive abnormal return

for the dividend increase group reflects small price adjustments that occur when the market increase. On the other hand, the cumulative average residuals of split up stocks with poor dividend performance decline until about a year after the split by which time, it must be very clear that the anticipated dividend increase is not forth coming. When we combine the results for dividend increases and decreases, these results are consistent with the hypothesis that on the average the market makes unbiased dividend forecasts for split up securities and these forecasts are fully reflected in the price of the security by the end of the split month.

A more recent study by Grinblatt et al (1984) used daily data and looked at shareholders return on the split announcement date as well as the split ex date. They examined a specific subsample of splits where no other announcement was made in the three-day period around the split announcement and where no cash dividends have been declared in the three years. For this sample of 125 "pure" stock splits they found a statistically significant announcement return of 3.44%. they interpret stock split announcement as favorable signals about the firm's future cash flows. Surprisingly, they also find statistically significant returns (for their entire sample of 1360 stock splits) on the ex date. There is no good explanation of this result, and it is inconsistent with the earlier Fama et al (1969) study that used monthly returns data.

The results of Fama et al (1969) are consistent with the semi strong form of market efficiency, prices appear to fully reflect information about expected cashflows. The split per se has no effect on shareholders wealth. Rather, it merely serves as a message about the future prospects of the firm. Thus splits have benefits as signaling devices. There seem to be no way to use a split to increase one's expected returns, unless of course, inside information concerning the split or subsequent dividend behaviour is available (Copeland and Weston, 1992).

One often hears that stocks split because there is an "optimal" price range for common stocks, moving the security price into this range makes the market for trading in the security "wider" or "deeper", hence there is more trading liquidity. Copeland (1979) reports that contrary to the above argument, market liquidity is actually lower following a stock split.

Trading volume is proportionately lower than its pre-split level, brokerage revenues are proportionately higher, and bid-ask spreads are higher as a percentage of the bid price. (The bid price is the price that a potential buyer offers and the ask price is what the seller requires. The bid-ask spread is the difference). Taken together, these empirical results point to lower post split liquidity. Hence we can say that the market for split up securities has lower operational efficiency relative to its pre-split-level. Ohlson and Penman (1985) report that the post split return standard deviation for split up stocks exceeds the pre-split return standard deviation by an average of 30% lower liquidity and higher return variance are both costs of splitting.

Brennan and Copeland (1987) provide a signaling theory explanation for stock splits and show that it is consistent with the data. The intuition can be explained as follows: Suppose that managers know the future prospects of their firm better than market does. Furthermore, assume that there are two firms with a price of Kshs 60 per share which are alike in every way except that the managers of firm A know it has a bright future while the manager of B expect only average performance. Managers of both firms know that if they decide to announce a split, their shareholders will suffer from the higher transaction costs, documented by Copeland (1979). However, the successful firm will bear these costs, only temporarily, while firm B will bear them indefinitely. Hence firm A will signal its bright future with a stock split and the signal will not be mimicked by firm B. As a result A's price will rise at the time of the announcement so as to reflect the present value of its future prospects. Furthermore, the lower the target price to which the firm splits, the greater confidence management has, the larger will be the announcement residual. Empirical results by Brennan and Copeland (1987) confirm this prediction.

Initial Public Offering

Frank and Kenneth (1969) hypothesized that underwriters would tend to under price new issues because of the uncertainty about price and the risk involved in under writing such issues. The question which is of direct interest to the efficient market hypothesis is how fast the price is adjusted to the under pricing. The more recent results indicate that the price adjustment takes place within one day after the offering (Miller and Frank 1987). Therefore

on average, there is some under pricing of initial public offerings when they are offered, but only a few investors who receive allocations of the original issue will benefit. Further, Hanley and Wilhelm (1995) show that institution investors capture the vast majority (70%) of the short-term profits.

The evidence indicates that investors who acquire the stock after the initial adjustment do not experience abnormal returns. This is best documented by Ritter (1991), who shows that a strategy of investing in initial public offering (IPO's) at the end of the first day of public trading and holding them for three years would have resulted in a wealth relative to 0.83 compared to a portfolio of matched stocks from the New York Stock exchange (NYSE)

Exchange listing:

Another significant economic event for a firm and its stock is the decision to become listed on a national exchange. Such a listing is expected to increase the market liquidity of the stock and add to its prestige. The results regarding the effect on liquidity are inconclusive, while William and Roger (1993) asserts that listing does not cause a permanent change in the long-run value of firm.

Most recent studies point toward profit opportunities immediately after the announcement that a firm is applying for listings and some suggest the possibility of excess returns from price declines after the actual listing (Sanger and McConnel 1986). A study by Dharan and Ikenberry (1995) confirms that on average there is a relative price decline after listing but they also show that the results differ by size of the firm. They find that the major impact is on small firms that tend to list prior to decline in performance in contrast to large firms that do not experience poor performance.

In summary these studies on exchange listing indicate no long-run effects on value of a firm. They do, however, provide some evidence on short-run profit opportunities from public information, which does not support the semi-strong form efficient market hypothesis.

Announcement of Accounting changes

The market value of assets is the present value of their cash flows discounted at the appropriate risk-adjusted rate. Investors should care only about the cashflow implications of various corporate decisions. If investors really value cashflow and not earnings per share (eps) we should expect to see stock prices rise when firm announce a switch from FIFO (first In First Out) to LIFO (Last in first Out) accounting during inflationary periods because taxes are lower. Ricks (1982) studied a set of 354 NYSE and AMEX – Listed firms that switched to LIFO in 1974. He computed their earnings as if they never switched and found that the firms that switched to LIFO had an average 47% increase in their as if earnings, where as in matched sample of no change firms has an average 2% decrease. Ricks also found that the abnormal returns of the switching firms were significantly lower than the matched sample of no change firms.

The study above indicates that investors in efficient markets attempt to evaluate news about the effect of managerial decisions on cash flows not on eps (earnings per share).

Unexpected world events and economic news

The results of several studies of the response of security prices to world or economic news have supported the semi strong form EMH (Efficient Market Hypothesis). Reilly and Drzycimski (1973) examines the reaction of stock prices to unexpected world events and found that prices adjusted to the news before the market opened or before it re-opened after the announcement. Pierce and Roley (1985) examined the response to announcements about money supply, inflation, real economic activity, and the discount rate and found either no impact or an impact that did not persist beyond the announcement day. Jain (1988) analyzed hourly stock returns and trading volume response to surprise announcements about money supply, price changes, industrial production, and the unemployment rates. he found that money supply and price changes had an impact that was reflected in about one hour.

Corporate events:

Mergers and acquisitions, reorganizations and various security offerings (common stock, straight bonds, convertible bonds) have received substantial analysis during the last few years in corporate finance. There are two general questions of interests:

- i) What is the market impact of these events?
- ii) How fast does the market react to these events and adjust the security prices?

On the question of the reaction to corporate events, the answer is almost unanimous that price reacts as one would expect based on the underlying economic impact of the action. An example would be the reaction to mergers where the stock of a firm being acquired increases in line with the premium offered by the acquiring firm, where the stock of the acquiring firm typically declines or experiences no change because of the concern that they over paid for the firm. On the question of speed of reaction, the evidence indicates fairly rapid adjustment with the time period shortening as shorter interval data are analysed. (i.e. using daily data, most studies find that the price adjustment is completed in about 3 days (Reilly and Brown 2000).

iii) Strong Form EMH

The strong form EMH contends that stock prices fully reflect all information from public and private sources. This means that no group of investors has monopolistic access to information relevant to the formation of prices. Therefore, no group of investors should be able to consistently derive above-average profit. The strong form EMH encompasses both the weak form and semi-strong EMH. Further the strong form EMH extends the assumption of efficient markets, in which prices adjust rapidly to the release of new public information, to assume perfect markets in which all information is cost-free and available to everyone at the same time.

Rubinstein (1975) and Latham (1985) have extended the definition of market efficiency. The market is said to be efficient with regard to an information event if the information causes no portfolio changes. It is possible that people might disagree about the implications of a piece of information so that some buy an asset and others sell in such a way that market price is unaffected. If the information does not change prices, then the market is said to be efficient with regard to the information in the Fama (1970) sense but not in the Rubinstein (1975) or Latham (1985) sense. The Rubinstein –Latham definition requires not only that there be no

price change but also that there be no transactions. Hence it is a stronger form of market efficiency than even the Fama Strong form efficiency mentioned above.

Strong Form Hypothesis; Tests

Tests of the Strong Form EMH. have analysed returns over time for different identifiable investment groups to determine whether any group consistently received above average risk adjusted returns. To consistently earn positive abnormal returns, the group must have access to important private information or an ability to act on public information before other investors. Such results would indicate that security prices were not adjusting rapidly to all new information. Researchers have analysed returns experienced by four major groups of investors namely;

- Corporate insiders

- Stock exchange specialists

- Security analysts

- Performance of professional money managers

Corporate Insiders

Insiders include major corporate officers, members of the board of directors, and owners of 10% or more of equity class of securities. Jaffe (1974) found that public investors who consistently traded with insiders based on announced insider transactions would have enjoyed excess risk adjusted returns (after commissions). Kerr (1980) tested this trading rule and concluded that the market had eliminated this inefficiency. Trivoli (1980) contended that you can substantially increase the returns from using trading information by combining it with key financial ratios Nunn etal (1982) contended that you should consider which group of insiders (board chair, officers, directors versus other insiders) is doing the buying and selling. Seyhun (1986) also agreed that the realisable returns to investors who attempt to act on insider reports was not positive after considering total transaction cost. Finally the most recent study by Pettit etal (1995) has results that a significant relationship between insider trading and long-term security performance.

Overall, these results provide mixed support for the EMH. Although several studies indicate the ability for insiders to experience abnormal returns, an almost equal number of studies

indicate it is not possible for the none insider to use this information to receive excess returns. Lee and Solt (1986) found it not possible to use aggregate insider trading activity as a guide to market timing.

Stock Exchange Specialist

An SEC (Security and Exchange Commission) study in the early 1970s examined rate of returns earned on capital by the specialists. The results indicated that these rates of returns were substantially above normal, which would not support the Strong Form EMH. In fairness to current specialists, the prevailing environment differs substantially from that in early 1970s. More recent results indicate that specialists are experiencing much lower rate of returns following the introduction of competitive rates and other trading practices that have reduced specialist fee.

Security Analysts

The value line enigma

The most studied data on security analyst information is the value line investment survey where securities are divided into five groups, with one being the firm's with the best prospects and five being the worst.

Black (1973) tested the value line system over the period 1965 to 1970 by constructing portfolio grouped by rank and revised the portfolios monthly. He concluded that rank one firms outperformed rank five firms by 20% per year on a risk adjusted basis and that even with round trip transaction cost of 2%, the net rate of return for a long position in rank one stock would have been positive. Holloway (1981) examined the top 100 stocks and concluded that if you adjusted your portfolio weekly, the returns would be superior before transaction cost but not after. Alternatively, assuming annual portfolio revision, there were abnormal returns after transaction costs.

Copeland and Mayers (1982) found that abnormal returns were consistent with the rankings, but only the returns for rank five were significantly negative implying that value line had the ability to select underperformers.

Stickel (1985) found that although all rank changes affect stock prices, the most significant impact occurs when stocks go from rank two to one. Other changes in rank were followed by

statistically significant changes that were much smaller than for a move from two to one. Stickel contends that the price movements require three days and small firms experienced a larger reaction to changes in ranks and the changes requires several days. Huberman and Kandel (1990) examined the relationship between the value line recommendations and firm size. The overall results indicated no relationship between the value line rankings and size. Also although the value line investment service favours large firms, the system appears to be better at predicting the relative returns on small firms stocks.

Peterson (1987) examined the daily price changes around the release of initial reviews and consequent new rankings of stocks. The analysis considers the day before official release, the release day and the following day. The portfolio returns for stocks ranked one were significant on days -1, 0, and +1, individually and combined. In general there were no significant abnormal returns for stocks assigned any other ranking, which implies that these other rankings contained very little information. Notably, there were no significant price changes after day +1. It is concluded that there is information in some of the rankings (mainly rank one) but the market is fairly efficient in adjusting to them.

Analysts Recommendations

Lloyd and Canes (1987) and Lin et al (1990) found that the prices of stocks mentioned in the wall street journal column " Heard on the Streets" experience a significant change on the day the column appears, in contrast Desai and Jain (1995) examined the performance of stocks recommended by "superstar" money managers at Barrons round table and found abnormal returns of 1.91 % from the meeting date to the publication date, but zero abnormal returns for all post publication holding period. Womach (1996) finds that the analyst appear to have both market timing and stock picking ability, especially in connection with sell recommendation that are relatively rare.

Performance Of Professional Money Managers (Mutual Fund Performance)

Sharpe (1966), Jensen (1968) and Treynor (1965), studied mutual funds and indicated that most funds could not match the performance of a buy and hold policy. When risk adjusted returns were examined without considering commission costs, slightly more than half of

money managers did better than the overall market. When commission costs, load fees, and management costs were considered, approximately two thirds of the mutual funds did not match aggregate market performance.

Klemkosky (1977) And Shukla and Trzcinka (1994) found that funds were inconsistent in their performance and the only persistence was in inferior performance. Studies by Henriksson (1984) and by Chang et al (1984) provided similar results on performance. In contrast, Ippolito (1989) found that funds during the period 1965 to 1984 beat the market after research and transaction costs. Finally Elton et al (1994) used a three-factor model to measure risk and found that during the Ippolito period the abnormal returns using more extensive risk measurement were negative. Therefore the vast majority of money managers studies support the EMH with results that indicate mutual fund managers generally cannot beat a buy and hold policy.

2.3 Summary of Market Efficiency Tests

Clearly, the evidence from tests of the semi-strong EMH is mixed. The hypothesis receives strong and almost unanimous support from the numerous event studies on a range of events, only exchange listing studies provides mixed results.

In sharp contrast, the numerous studies on predicting rates of return over time or for a cross-section of stocks presented evidence that indicated that markets were not semi-strong efficiency.

The tests of the strong form EMH generated mixed results, but the bulk of relevant evidence supported the hypothesis. The results of two unique groups of investors (corporate insiders and stock exchange specialists) did not support the hypothesis because both groups apparently have monopolistic access to important information and use it to derive above average returns.

Tests to determine whether there are analysts with private information concentrated on the value line rankings and publications of analysts recommendations. The results of value line

rankings have changed over time and currently lean towards support for the EMH. Specifically the adjustments to rankings and the rankings changes are fairly rapid, and it appears that trading is not profitable after transaction costs. Finally the performance by mutual fund managers provided support for the strong form EMH. The vast majority of money managers performance studies have indicated that the investments by these highly trained, full time investors could not consistently out perform a simple buy and hold policy on a risk adjusted basis

2.4 Fads and Fundamentals

The empirical evidence on the relation between stock prices and economic fundamentals remains inconclusive . Cutler et al (1989) argue that important economic and political news has little predictable influence on stock prices and that the influence of economic forces on stock prices leaves ample room in which to argue that "fads" unrelated to fundamentals drive stock prices.

On the other hand, Barsky and De Long (1989) note that predictors of future dividends, which seem to have supported "faddish" stock price movement in the past century, have been based on reasonable expectation of economic performance. Similarly Fama (1990) has shown that well over 50 per cent and possibly much more of the movement in a broad index of stock price can be rationalised as a response to present and future changes in industrial production. This evidence suggest that there is relatively little room in which to argue that the market is driven by irrational fads.

Another dimension is the process by which new information becomes reflected in security prices. When a group of investors becomes informed about a change in expected cash flows, how is their information passed on? One hypothesis that seems to be consistent with some experimental economic research is that uninformed investors attempt to infer information held by informed investors by observing their trading behaviour as it affects market prices and trading volume. This type of rational behaviour can result in "information mirages" where market prices are too high or too low relative to fundamentals because uninformed traders believe that observed price changes contain information when, infact they do not.

The result is that the variability of security prices will be higher than it would be if all individuals had the same information at the same time. Empirical tests of the "information mirage" hypothesis are impossible because no one can observe when information reaches the market, who received it, or how it is incorporated in market prices (Weston & Copeland, 1992).

2.5 Market Efficiency With Costly Information

If capital markets are efficient, then no one can earn abnormal returns because prices reflect all available information. But without the hope of abnormal returns, investors have no strong incentive to acquire information. Random selection of securities is just as effective. How, then, can prices reflect information if there is no incentive to search it out and use it for Arbitrage? How can securities analysis industry exist?

The above argument may have some merit in a world with costless information because all investors would have zero abnormal returns. However, it is probably premature to predict the demise of the security analysis industry, or to argue that prices are uninformative. Grossman and Stiglitz (1976, 1980) have shown that a sensible efficient market equilibrium must leave some room for security analysis. The basic argument is simple. If good information is costly to obtain then investors who bear the expense of seeking it out must earn abnormal rates of return large enough to cover their expenses. However, when we net out their costs, then their net return is the same as the net return for investors who randomly selected their portfolio.

As it is impossible to have an equilibrium with 100 percent informed investors or with 100% uninformed investors, there must be a stable equilibrium where the two strategies co-exist (a mixed strategy stable equilibrium). This equilibrium will occur when the expected net pay off to both strategies is equal. Furthermore, the net profit to both kind of traders is zero, which is the standard equilibrium condition for competitive markets. In equilibrium more and more investors will seek out costly information until their net returns are the same as the returns earned by investors who use no information at all. But most prices will reflect the information of informed traders.

2.6 Market Efficiency Implications

i) Finance Managers

The existence of efficient markets has important implications for financial managers. Market efficiency means that a firm's share price is the best available estimate of its future cash flows. Despite the sometimes speculative nature, of security markets, share prices give the best benchmark for corporate financial choices. Thus decision should be oriented towards maximizing the market value of the firm. If security prices reflect all publicly available information then managers can watch their company stock price to find out what the market thinks of recently announced decisions. For example, Ruback (1982) analysed the takeover of conoco. It was the largest merger up to that time. On July 6 1981, the day the du pont bid was announced, du pont shares fell in value by 8.05 percent and conoco shares rose by 11.87 per cent. The wealth of du pont shareholders fell by approximately \$645 million in a single day. The message to dupont was unavoidable. The market felt they had made a mistake. The moral of the story is simple trust market prices..

Market efficiency is one of the most important themes in finance. The rapid adjustment of securities prices to new information has many implication for managers and investors. Among them are the following:

Timing of financial policy

Some finance managers argue that there's a right and a wrong time to issue new securities. New share issues should only be made when the market is at a high rather than a low. However, if the market is efficient how are financial mangers to know if tomorrow prices are going to be higher or lower than today's? Today's "low" could turn out to be the highest the market will stand for the next five years. All current information is already reflected in share prices and unless the financial mangers knows something the rest of the world does not, then its impossible to predict in which direction the market will turn.

Project Evaluation.

When evaluating new projects, financial managers usually use required rate of return drawn from securities traded from the capital markets. For example, the rate of return required by

shareholders of firms investing in projects of similar risks. This assumes that securities are fairly priced for the risk they carry, in other words that the stock market is efficient. If this is not the case, then financial managers could be appraising projects on the wrong bases and therefore making bad investment decisions.

Creative Accounting.

In an efficient stock market, share prices are based upon the expected future cashflows offered by securities and their level of risks, in turn these expectations reflect all current information. There is little point in firms attempting to distort current information to their advantage as investors will quickly see through any such attempts, as no investor can be “fooled” by the manipulation of accounting profit figures or changes in capital structure resulting from capitalisation issues. Eventually (and usually sooner than later) investors will realise the cashflow consequences and alter share prices appropriately.

Mergers and Takeovers

If shares are correctly priced this means that the purchase of a share is a zero NPV transaction. In other words the expected returns when discounted to present values will equal the current price of the security. This does not mean the share is a bad investment but merely that it's fairly priced, its price is commensurate with its risk and return.

If this is true, the rationale behind many mergers and takeovers may be questioned. If companies are acquired at their current equity valuation then the purchasers are effectively breaking even. If they are to make a significant gain in the acquisition then they must rely upon operating economies or rationalisation to provide the savings. If the acquirer pays current equity value plus a premium of 50% (which is not uncommon) this savings would have to be considerable to make the takeover attractive.

ii) Investors

The view that the return on investment (shares and bonds) is determined by the actions of rational agents in a competitive markets and that equilibrium returns reflect all available public information is probably quite a widely held view among financial economists. The stronger assertion namely that stocks and bond prices reflect their fundamental value (i.e. the

discounted present value of future earnings) is also widely held. What are then the implications of EMH to the investors?

As far as the risk averse investor is concerned the EMH implication for investment is that he cannot expect to beat the risk - adjusted market average, except by chance. Investors should instead seek to maximize the effectiveness of their diversification in their portfolio. This will involve the investors in holding the market portfolio (or the twenty or so securities that may mimic the market portfolio) and lending and borrowing at the risk free rate of interest to secure their desired risk – return trade off. In an efficient market, investors should adopt a very passive holding strategy once a well diversified portfolio is held, and no resources should be spent in attempting to identify securities that will earn excess returns unless, perhaps they have access to inside information. A passive holding strategy should be adapted as switching between securities will not earn any excess returns but will incur substantial trading costs (Firth 1986).

iii) Investment Analysts

The role for investment analysts if EMH is correct, is very limited and would include:

- i) Advising on the choice of the twenty or so shares that mimic the market portfolio.
- ii) Altering the proportion of wealth held in each asset to reflect the market share portfolio weights which will alter over time. The latter alters both as expected returns change and as the riskness of each security relative to the market changes (i.e. covariance of returns)
- iii) Altering the portfolio as the taxes change (e.g. if dividends are more highly taxed than capital gains, then for high rate income tax payers its optimal, at the margin, to move to shares which have low dividends and high expected capital gains).
- iv) “Shopping around “ inorder to minimize transaction costs of buying and selling.

iv) Financial Reporters

Concerning financial reporting, the major implications of EMH are:

Disclosure is very important, and the accounting techniques used to aggregate information into a single profit figure are not very important. Given wide disclosure, market professionals can analyse and aggregate accounting information in any way they see best. If there's

widespread consensus that one aggregation type is the “best”, then it may be cost-effective for accountants to prepare this aggregation. Tests of semi-strong form of efficiency have shown that so long as full disclosure is given, market professionals can see “through” accounting techniques which produce different earnings result.

The relevant audience for investment decision making process is the market professionals, who are the price setters and accounting information should be addressed to them. There are often calls for more simplified and more highly aggregated accounting data so that shareholders will better understand a company’s financial position and performance; however for investment decisions, it’s the market professionals who are effectively setting price levels and the unsophisticated investor, even with financial reports that he/she can understand will have no influence.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Methodology of Event Studies

The methodology of event studies is fairly standard and proceeds as follows (Elton and Gruber 1995)

- i) Collect a sample of firms that had a surprise announcement (the event).**

The population of this study consisted of all companies which have issued commercial paper from 1994 to 2001. From this the researcher took all quoted companies. There are twelve companies which fall in this category. (CMA Annual reports 1997 – 2001 and Central Bank statistics). The choice of quoted companies is due to the fact that it's only in quoted companies where you can be able to observe price changes.

- ii) Determine the precise day of the announcement and designate this day as zero**

The date the company announces to the public it's intention to issue a commercial paper either in the Newspapers or a launch "dinner date" was taken as the announcement day and was designated as $t=0$.

- iii) Define the period to be studied**

The researcher used sixty one days, thirty days before the event, the event day and thirty days after the event. This is because it is assumed that before the announcement date there is likely to be some information leakage by those with access to it, and after the announcement, there would be some delayed reaction.

- iv) **For each of the firms in the sample, compute the return on each of the days being studied**

Return was measured by the sum of the change in the market price of a security, plus any income received over a holding period divided by the price of a security at the beginning of the holding period (Elton & Gruber 1995).

Hence

$$R_j = \frac{(P_1 - P_0) + D_1}{P_0}$$

Where

R_j = Return of security j

P_1 = Price at the end of the holding period

P_0 = Price at the beginning of the period

D_1 = Any income received over a holding period.

- v) **Compute the “Abnormal” return for each of the days being studied for each firm in the sample.**

Abnormal return is actual return less the expected return. The researcher used the market model to derive expected returns. The market model simply argues that returns on security j, are linearly related to returns on a “market” portfolio (Copeland and Weston 1992).

The model starts with the simple linear relationship of returns and the market (Elton and Gruber 1995).

$$R_i = \alpha_i + \beta_i R_m + e_i$$

In finance, the above equation is called the characteristic line, and it is used as a proxy for the expected relationship between the two sets of excess returns. R_i is the expected return of the security in question α_i is known as the alpha, and it is simply the intercept of the

characteristic line on the vertical axis. β_i is the beta and is simply the slope of the characteristic line. It depicts the sensitivity of the security's excess returns to that of the market portfolio. The beta represents the systematic risk of a stock due to underlying movements in security prices. This risk cannot be diversified away by investing in more stocks because it depends on things such as changes in the economy and in the political atmosphere, which affects all stocks. The beta of a stock represents its contribution to the risk of a highly diversified portfolio of stocks. e_i is the unsystematic or avoidable risk of a security, which is unique to a particular company, being independent of economic, political and other factors that affect securities in a systematic manner. Efficient diversification reduces the total risk of a portfolio (unsystematic and systematic) to the point where only systematic risk remains and Hence investors are only compensated for the systematic risk only, hence reducing our equation to:

$$R_i = \alpha_i + \beta_i R_m$$

The proportion of total risk explained by movements of the markets is represented by the r^2 statistic for the regression of excess returns for a stock against excess returns for the market portfolio (r^2 measures the proportion of total variance of dependent variable that is explained by the independent variable, its simply the coefficient of correlation squared). The proportion of total risk unique to the stock is $1-r^2$. The proportion of systematic to total risk depends on the particular stock (Van Horne 1995), and hence there is no standard criterion for accepting the model.

It is noteworthy that the market model is not supported by any theory. It assumes that the slope and intercept term are constant over time period during which the model is fit to the available data. To arrive at the model equation, the returns of the stock selected were regressed with returns of the NSE 20-share index for the period of one month before the specified dates.

- vi) **Compute for each day in the event period the average abnormal return for all firms in the sample.**
- vii) **The individuals day's abnormal returns is added together to compute the cumulative abnormal return from the beginning of the period.**

Normally, average effect of the announcement is examined, rather than each firm separately, because other events are occurring and averaging across all firms should minimize the effect of these other events, thereby allowing a better examinations of the event under study.

- viii) **Examine and discuss the results.**

The research determined whether the average abnormal returns were statistically different from zero and a t - test statistic was used with a significance level of 95%.

3.2 Data Collection

The data collected was quantitative. Both secondary and primary data was collected. The secondary data collected related to prices of shares, announcement date and dividends, the information was gotten from

- i) NSE Secretariat
- ii) Stock Brokers
- iii) Newspapers
- iv) Company's annual reports.

Primary Data

The information regarding the announcement date which was not traced in the Newspapers was collected by use of a questionnaire (Appendix II). The respondents were finance managers and a drop and pick method was used.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

The major objectives of this study were to determine whether stock prices adjust to commercial paper issues and the direction of stock price adjustment. In order to achieve these objectives, abnormal returns were computed by use of market model as outlined in the previous chapter, and then tested using the t-test statistic at 95% confidence level to determine whether they were statistically different from zero.

From the sample of twelve companies, eleven companies were analysed due to the fact that Express Kenya company did not trade during the specified period and hence was rendered irrelevant in this study. For each of the company under review a control company was identified, which is a similar firm which was not affected by the event under study.

4.2: Commercial Paper Statistics

Table 4.1 presents a comparative analysis of commercial paper rates with bank overdraft, banks base lending rates and treasury bill rates. The interest rates on commercial paper and corresponding bank overdrafts were obtained from the respective companies, issues of market intelligence journal for the period January 1998 to December 2001 and business week editions of the daily Nation for the same period. The treasury bill rates and banks base lending rates were obtained from the central bank of Kenya economic reviews and then quarterly averages computed.

Table 4.1: comparative analysis of commercial paper rates ,bank overdraft rates banks base lending rates and treasury bills.

company	Commercial paper rates	Bank overdraft rates	Treasury bill rates	Banks base lending rates	Size of commercial paper
Brookebond	25.25%	30.4%	26.3%	26%	1 billion
Motor mart	27.55%	30.4%	26.3%	26%	1.5 billion
BAT	25.25%	30.4%	26.3%	26%	550 million
Athi river mining	25.5%	29.6%	25.5%	25%	100 million
CMC Holding	14.8%	21%	14.5%	15%	250 million
Nation media group	18.5%	23.3%	17.79%	21%	500 million
TPS serena	18.4%	23.3%	17.79%	21%	100 million
Total Kenya	10.25%	24.1%	11.3%	19%	1.2 billion
Kenya power & lighting co.	21%	25.9%	20.3%	23%	1.5 billion
Crown berger	13.2%	20.6%	10.6%	16%	200 million
Kenya oil co.	13.25%	18.3%	11.79%	17%	500 million

Table 4.1 shows that bank overdraft are often higher than commercial paper rates ,and there is a significant interest savings of between 2.85% to 13.85% with an average of 5.85%. Commercial paper rates on the other hand are slightly above the treasury bill rates by about 0.3% to 2% with an average of 0.39%, but sometimes the commercial paper rates falls below the treasury bills rates. The banks lending base rates are slightly higher than commercial paper rates by about 0.2% to 8.75% with an average of 2%.although in some instances the commercial paper rates are above the banks base lending rates.

4.3 Raw Data Analysis

Raw data collected which comprised of opening and closing share prices per day and dividend were summarized and analyzed in stage one as shown in table 1 below:

Table4.2: Summary of raw data

Days Relative to CP Issue	Po	P1	D1	Ri=(P1-Po+D1)/Po
-60				
-59				
:				
:				
29				
30				

Po = share price at the beginning of the day.

P1 = share price at the close of the day.

D1 = any income received.

Ri = the return of a specific company.

For each of the specified days the return of the market was also calculated as:

$$R_m = (\sum^n Ri)/n$$

Where, R_m =daily return of the market.

R_i =daily return of each company in the NSE share Index.

n = Index companies.

The second stage of data analysis involved the use of the market model which was applied on 30 days before the specified event period. The market model is simply the linear relationship of returns of the specific company and the market .The linear regression estimate equation was then applied on the specified event to derive the expected returns.

Lastly abnormal returns (actual returns minus expected returns) were computed and then tested to determine whether they were statistically different from zero hence testing the hypothesis.

4.4 Market Model Results

The results of Regression Analysis (Market Model) are presented in Table 4.3 for experiment companies and table 4.4 for control companies :

Table 4.3; Market Model Results (experiment companies).

Experiment companies	Estimated Equation	R ²	SEE
Brooke Bond	$R_i = -1.399 + 3.462 R_m$	0.154	5.345
Motor Marts	$R_i = -0.599 + 1.679 R_m$	0.263	2.4
British American Tobacco	$R_i = 0.189 - 0.15 R_m$	0.025	1.1182
Athi River Mining	$R_i = -1.116 + 1.758 R_m$	0.073	2.922
CMC Holdings	$R_i = 0.01363 - 0.698 R_m$	0.081	1.877
Nation Media Group	$R_i = 0.0439 + 1.078 R_m$	0.18	1.6209
Kenya Power & Lighting Company Ltd	$R_i = -0.591 - 0.11 R_m$	0.001	1.858
Total Kenya	$R_i = 0.147 + 0.985 R_m$	0.193	1.021
TPS Serena	$R_i = 0.309 - 0.456 R_m$	0.099	0.9427
Crown Berger	$R_i = -0.212 - 1.003 R_m$	0.066	1.7493
Kenya Oil Co.(Kenol/Kobil)	$R_i = -0.165 + 1.205 R_m$	0.21	1.647

R² = coefficient of determination.

SEE = Standard error of the estimates.

R_i =daily expected returns of the company.

R_m =daily market return.

Table 4.4 Market Model Results (Control Companies)

Control Companies	Estimated Equation	R²	SEE
<i>Brooke Bond Control (George Williamson)</i>	$R_i = -0.22 + 0.513R_m$	0.069	1.245
<i>Motor Marts Control (Car & General)</i>	$R_i = 0.03177 + 0.227 R_m$	0.035	1.0209
<i>British American Tobacco Control (BOC Gases)</i>	$R_i = -0.255 + 0.05288 R_m$	0.001	2.3224
<i>Athi River Mining Control (Kenya Breweries Ltd)</i>	$R_i = 0.00577 + 1.424 R_m$	0.084	2.1922
<i>CMC Control (Uchumi)</i>	$R_i = 0.182 + 0.286 R_m$	0.011	2.187
<i>Nation Media Group Control (British American Tobacco)</i>	$R_i = -0.418 + 0.718 R_m$	0.05	2.197
<i>Kenya Power & Lighting Company Control (Kenya Breweries Ltd)</i>	$R_i = -0.0506 + 1.546 R_m$	0.083	2.933
<i>Total Kenya Control (Bamburi)</i>	$R_i = 0.554 + 2.751 R_m$	0.204	2.755
<i>TPS Serena Control (Diamond Trust)</i>	$R_i = 0.89 + 2.463 R_m$	0.316	2.796
<i>Crown Berger Control (Kenya Breweries Ltd)</i>	$R_i = 0.24 + 0.724 R_m$	0.038	1.6823
<i>Kenya Oil Co. Control (Total Kenya)</i>	$R_i = -0.449 + 0.566R_m$	0.039	1.969

R² = coefficient of determination.

SEE = Standard error of the estimates.

R_i =daily expected returns of the company.

R_m =daily market return.

From tables 4.3 and 4.4, R² which explains the proportion of the total risk explained by the movement of the market reveals that systematic risk in Nairobi Stock Exchange explains 0.1 %to 31.6% with an average of 10.34% of the total variability of an individual stock returns. the rest being explained by the unsystematic risk which is specific to a particular company and it differs from company to company.

4.5 Hypothesis Testing

Each firm's abnormal returns surrounding the commercial paper issue announcement was tested to find if they were statistically different from zero.

The hypotheses tested in this study were:

$H_0: \mu = 0$ (The average abnormal returns surrounding commercial paper issue announcement is not significant)

$H_1: \mu \neq 0$ (The average abnormal returns surrounding commercial paper issue announcement is significant)

To calculate t-test statistic, the following formula was applied (Kothari C.R. 1990):

$t = (D - 0) / (\partial_{diff.} / \sqrt{n})$ ($n-1$) degrees of freedom.

Where:

D = Mean of differences

$\partial_{diff.}$ = Standard deviation of differences

n = Number of matched pairs.

The results of calculated t was as shown in tables 4.5 and 4.6:

Table4.5; Hypothesis Testing Results (Experiment Companies).

Experiment Companies	t -statistic
Brooke Bond	0.7988
Motor Marts	2.825****
British American Tobacco	-0.8205
Athi River Mining	2.7401****
CMC Holdings	-1.261
Nation Media Group	0.2314
Kenya Power & Lighting Company Ltd.	6.2057****
Total Kenya	-0.2832
TPS Serena	-2.3268**
Crown Berger	0.5279
Kenya Oil Co.(Kenol/Kobil)	2.1653**

- * reject at 90% confidence level using a two tailed test.
- ** reject at 95% confidence level using a two tailed test.
- *** reject at 98% confidence level using a two tailed test
- **** reject at 99% confidence level using a two tailed test

Table 4.6 Hypothesis Testing Results (Control Companies)

Control companies	t -statistic
<i>Brooke Bond Control</i> <i>(George Williamson)</i>	<i>2.1448*</i>
<i>Motor Marts Control</i> <i>(Car & General)</i>	<i>0.4302</i>
<i>British American Tobacco Control (BOC Gases)</i>	<i>0.889</i>
<i>Athi River Mining Control</i> <i>(Kenya Breweries Ltd)</i>	<i>1.251</i>
<i>CMC Control</i> <i>(Uchumi)</i>	<i>0.0939</i>
<i>Nation Media Group Control</i> <i>(British American Tobacco)</i>	<i>1.901*</i>
<i>Kenya Power & Lighting Co. Control (Kenya Breweries)</i>	<i>-0.818</i>
<i>Total Kenya Control</i> <i>(Bamburi)</i>	<i>-0.8615</i>
<i>TPS Serena Control</i> <i>(Diamond Trust)</i>	<i>0.2894</i>
<i>Crown Berger Control</i> <i>(Kenya Breweries)</i>	<i>0.05644</i>
<i>Kenya Oil Co. Control</i> <i>Total Kenya)</i>	<i>0.9033</i>

- * reject at 90% confidence level using a two tailed test.
- ** reject at 95% confidence level using a two tailed test.
- *** reject at 98% confidence level using a two tailed test.
- **** reject at 99% confidence level using a two tailed test.

Tables 4.5 & 4.6 show that in five experimental companies which represent 45.46% of the sample size, rejected the null hypothesis, while six companies failed to reject the null hypothesis.

The control companies clearly show that at 95% confidence level all the companies failed to reject the null hypothesis and hence the event has an impact. Since other events are occurring around the event dates, average effect of the announcement is considered to minimize the effects of these other events.

4.6 Analysis of Abnormal Returns (Average Effect of Commercial Paper Issue Announcement)

The observation period in this study extends from day -30 through 30. The average adjusted return was derived for each trading day over the 61-day observation period using the following formula

$$AARd = (\sum^n Ri)/n$$

Where;

AARd = Average adjusted return for each day.

n = number of sampled securities.

Ri = Return for security (i) on each day

The cumulative average adjusted return for each observation day was also calculated to take into account any cross - sectional dependence of the abnormal returns over the observation period.

Table 4.7 presents the excess returns for days -30 to 30 (where day zero is the announcement day)

Table4.7 Analysis of abnormal returns (Eleven Companies)

Day s	Abnormal returns	t - statistic	Cumulative average adjusted returns
-30	(2.46)	(2.436) **	(2.46)
-29	(0.23)	(0.64)	(1.35)
-28	0.22	0.68	(0.82)
-27	(0.86)	(0.48)	(0.83)
-26	1.51	1.12	(0.36)
-25	0.36	3.39***	(0.24)
-24	(0.29)	(0.36)	(0.25)
-23	0.72	0.93	(0.13)
-22	1.84	0.78	0.09
-21	0.31	0.31	0.11
-20	0.46	0.64	0.14
-19	(0.36)	(0.21)	0.10
-18	0.35	1.01	0.12
-17	1.00	1.16	0.18

Day s	Abnormal returns	t - statistic	Cumulative average adjusted returns
-16	0.06	0.06	0.18
-15	0.67	1.72	0.21
-14	0.23	0.79	0.21
-13	0.71	1.36	0.24
-12	0.74	1.49	0.26
-11	0.52	1.29	0.28
-10	0.05	0.49	0.26
-9	1.28	1.21	0.31
-8	0.91	1.91	0.34
-7	0.07	0.27	0.33
-6	1.47	1.04	0.37
-5	0.27	1.12	0.37
-4	1.26	1.72	0.40
-3	1.14	1.37	0.43
-2	(0.02)	(0.04)	0.41
-1	0.38	1.46	0.41
0	(0.07)	(0.18)	0.40
1	1.73	3.303**	0.44
2	(1.27)	(1.67)	0.39
3	0.64	0.97	0.39
4	0.25	0.62	0.39
5	0.69	1.51	0.40
6	0.43	0.77	0.40
7	1.18	2.195*	0.42
8	1.02	3.199**	0.43
9	0.09	0.22	0.43
10	0.44	1.88*	0.43
11	0.29	1.65	0.42
12	0.68	2.944**	0.43
13	(0.18)	(0.50)	0.41
14	(0.17)	(0.16)	0.40
15	0.28	0.72	0.40
16	0.55	2.82	0.40
17	(2.05)	(1.81)	0.35
18	0.39	2.6168**	0.35
19	(0.47)	(1.01)	0.34
20	0.67	1.64	0.34
21	0.14	0.27	0.34
22	(0.30)	(0.71)	0.33

Day s	Abnormal returns	t - statistic	Cumulative average adjusted returns
23	(0.18)	(0.12)	0.32
24	0.04	0.04	0.31
25	0.22	0.62	0.31
26	1.06	2.3177**	0.32
27	0.81	1.904*	0.33
28	(0.50)	(0.93)	0.32
29	0.61	1.64	0.32
30	1.39	2.29**	0.34

* significant at 10% level using a two tailed test

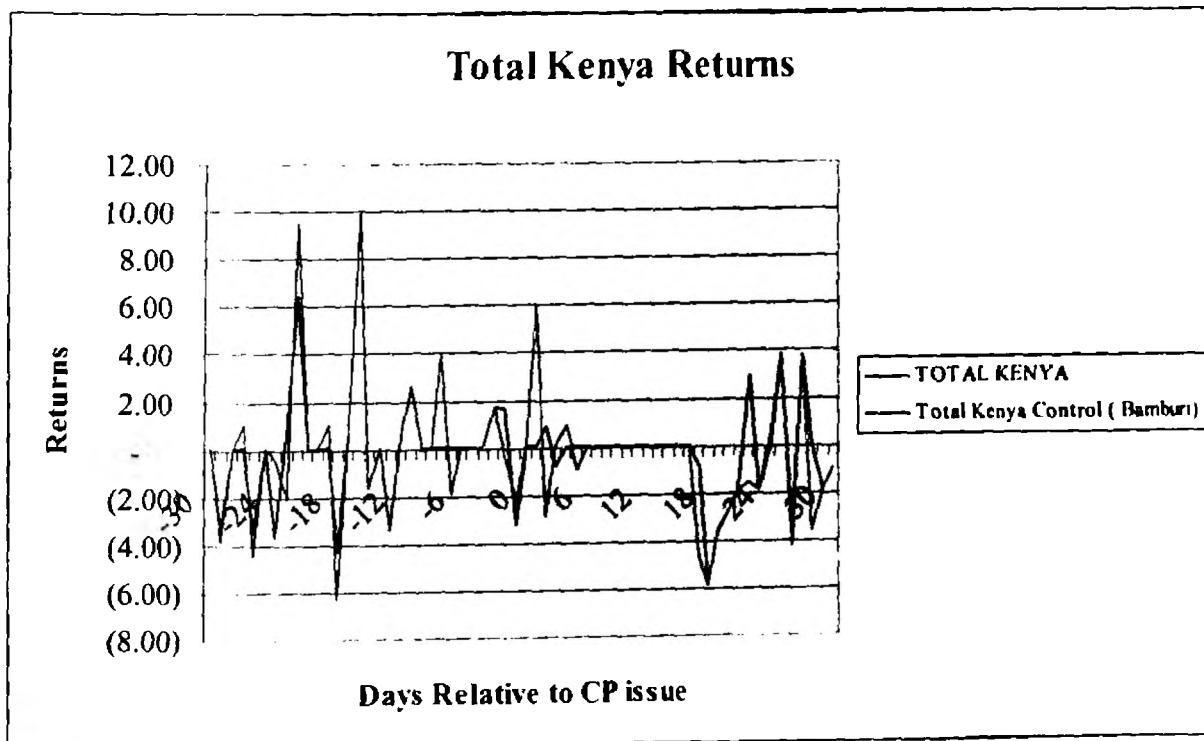
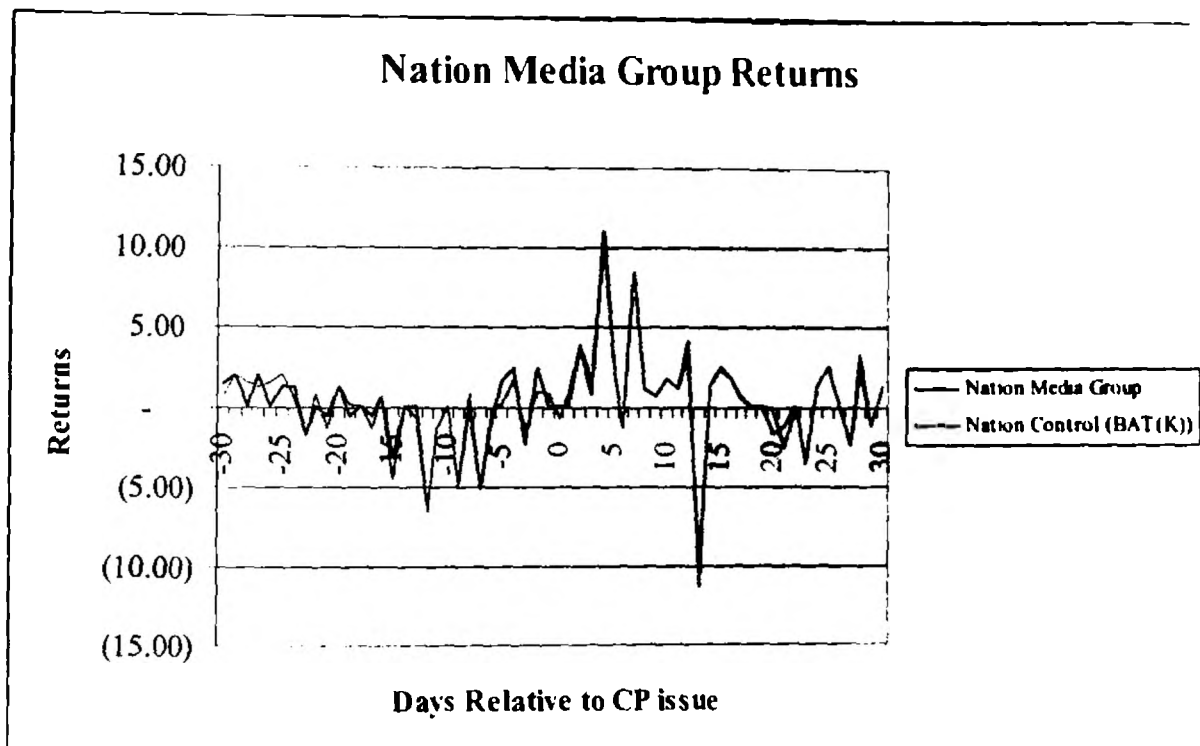
** significant at 5% level using a two tailed test

*** significant at 1% level using a two tailed test

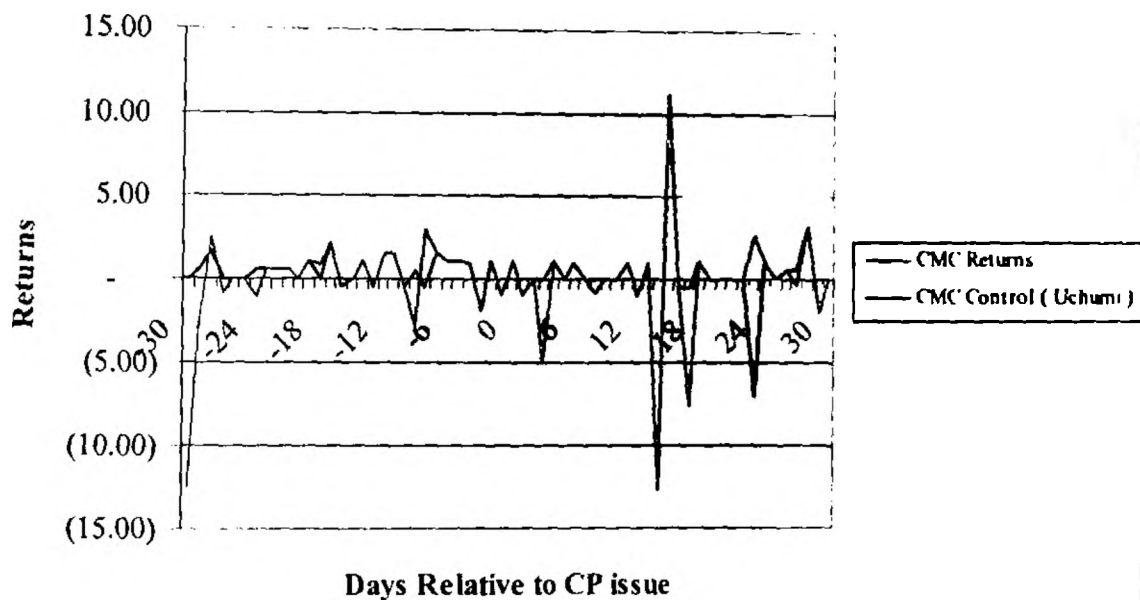
Table 4.7 shows that from day -30 through day -1, 24 days recorded positive abnormal returns with day -30 recording a negative return which was significant at 5% level, and day -25 recording a positive return which was significant at 5% and 1% level. The rest of the days returns were not statistically significant. Day 0 (event day) recorded a return which was not statistically significant, and day 1 through day 30, 22 days recorded a positive abnormal return with 6 days recording returns which were statistically significant at 5% level while 3 days returns were significant at 10% level.

The cumulative average adjusted return over the full 61-day observation period is 0.34%, with a t-value of 3.41, which is statistically significant at 5% and even 1% level. The cumulative abnormal returns of the days -15 through day 15 experiences a positive drift and since efficient market theory states that announcement effect should be fully and immediately impounded in security prices, this interval is hence a more reliable indicator of the event influence on share prices relative to, say, the interval day -30 through day 30.

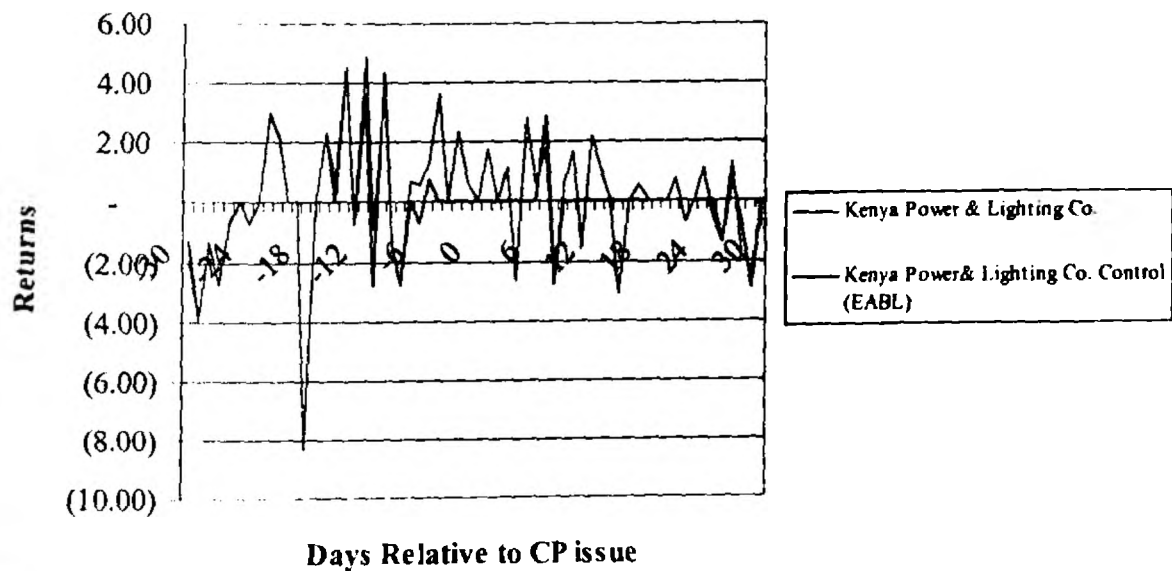
4.7 Graphical presentation of company returns and days relative to C'P issue.



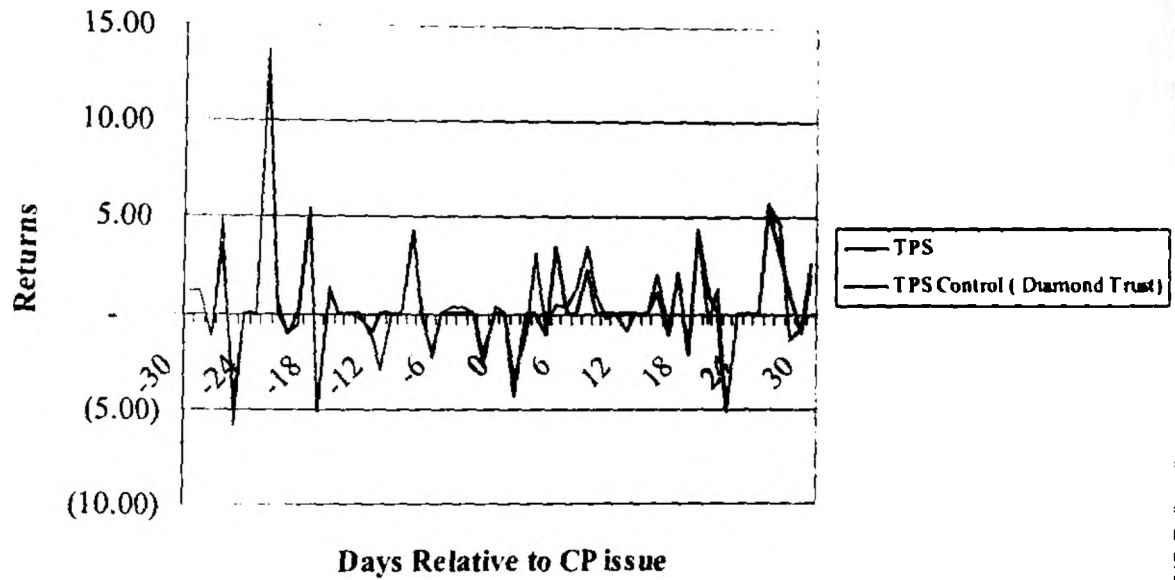
CMC Holdings Returns



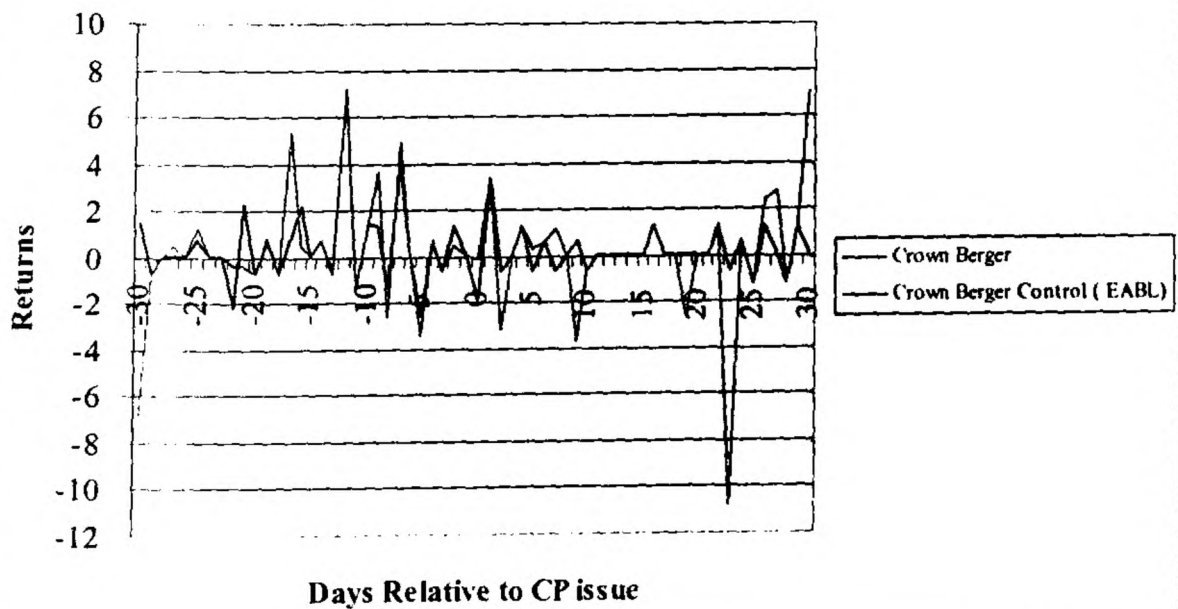
Kenya Power & Lighting Co. Returns



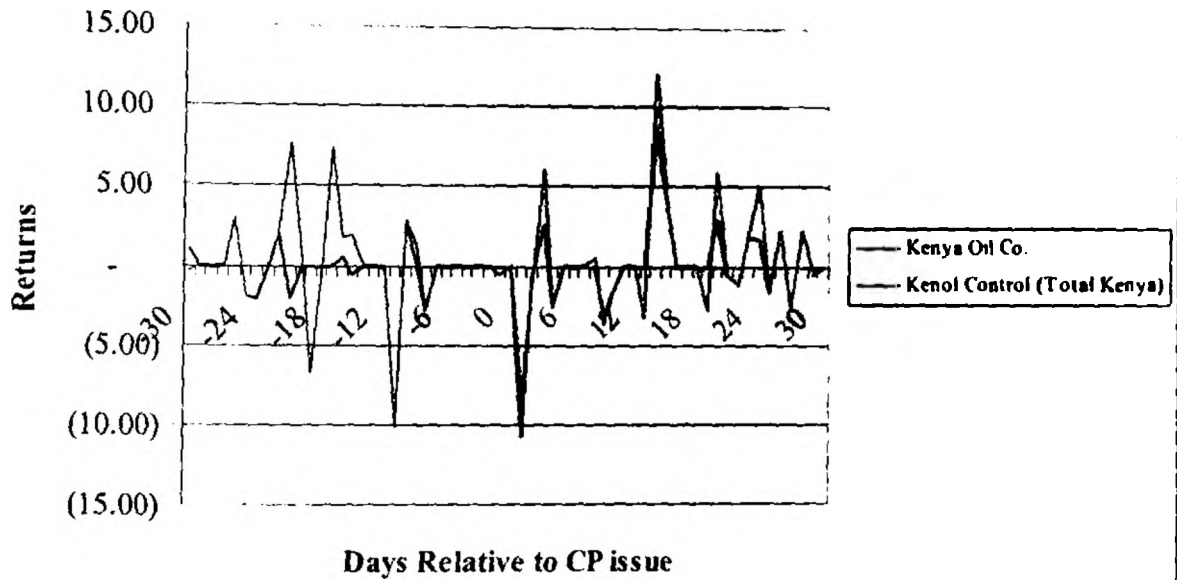
TPS Serena Returns



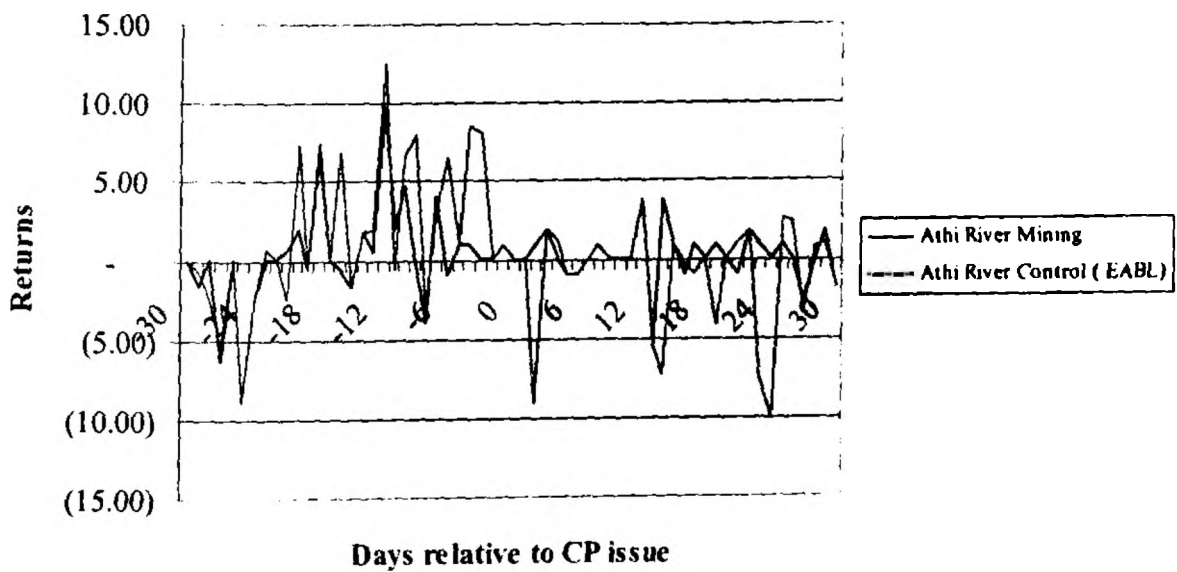
Crown Berger Returns



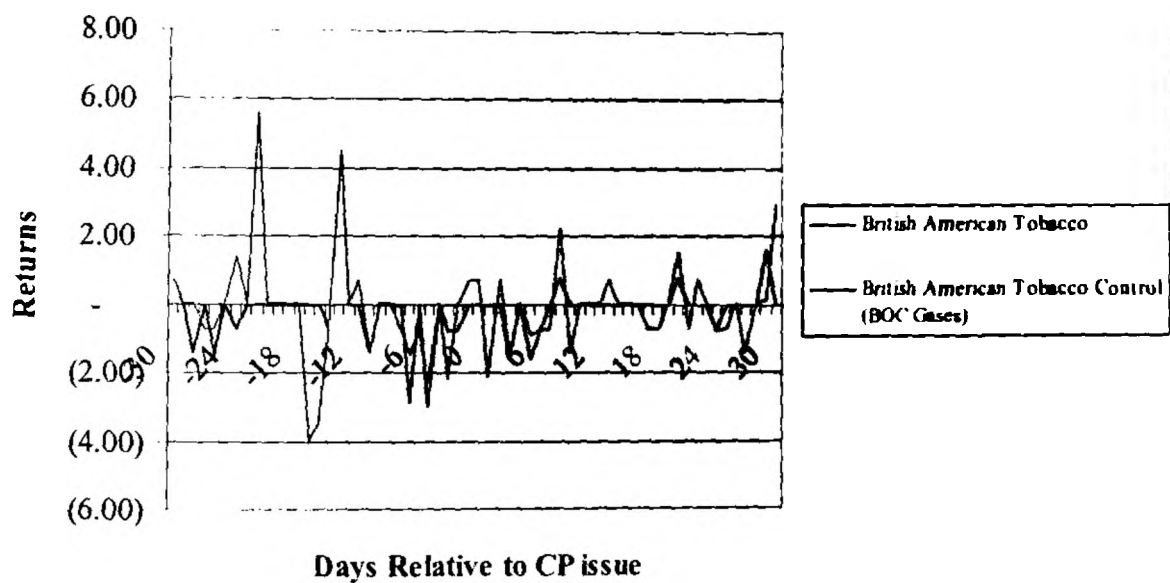
Kenya Oil Co. Returns



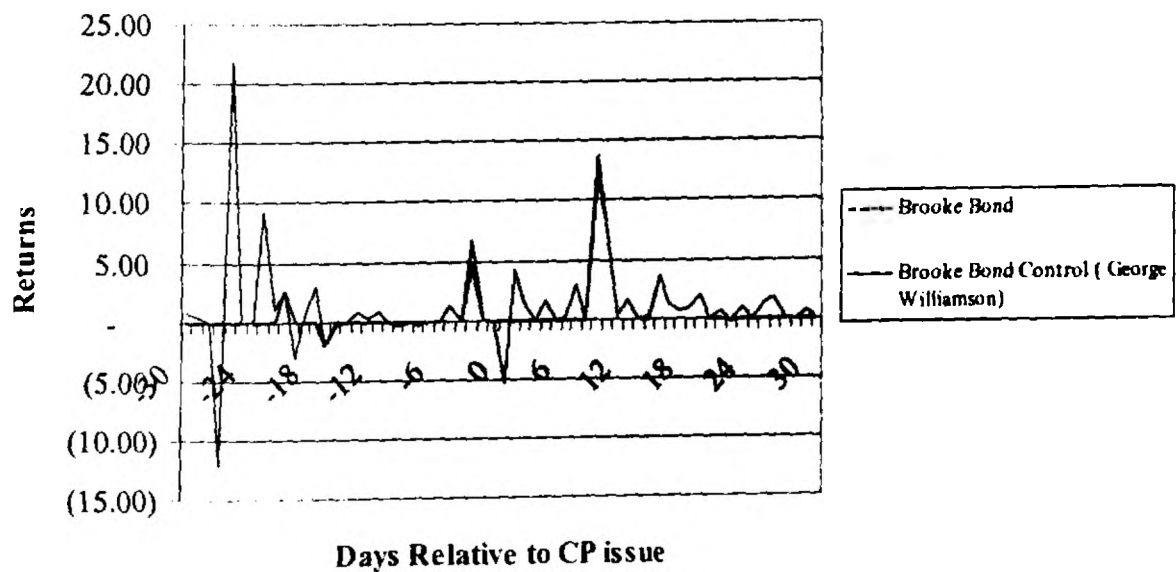
Athi River Mining Returns



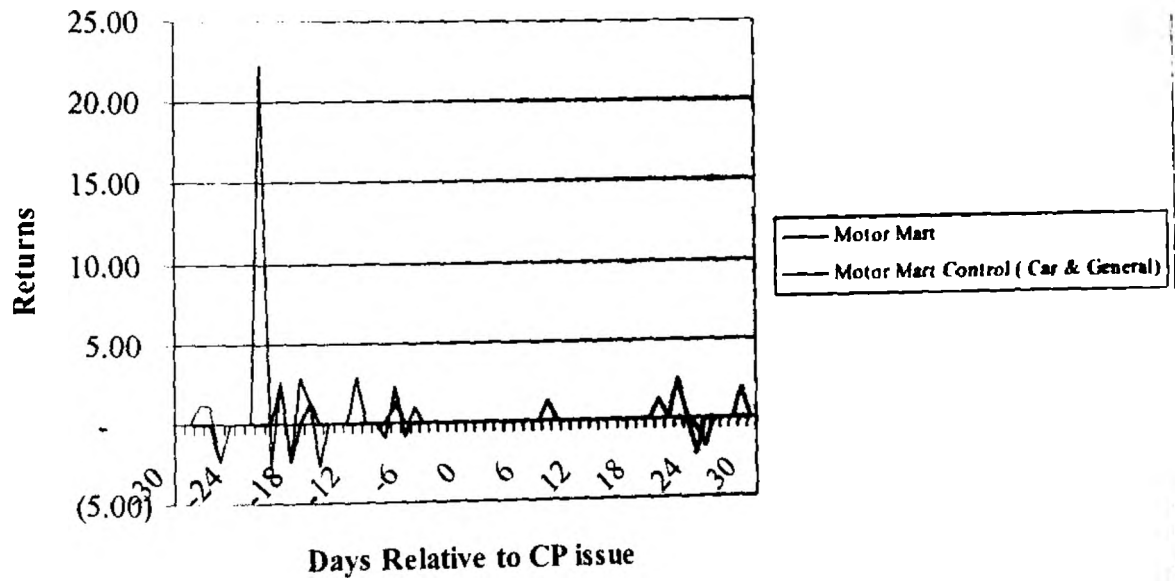
British American Tobacco Returns



Brooke Bond Returns



Motor Mart Returns



CHAPTER FIVE

5.0 SUMMARY AND CONCLUSIONS

5.1 Introduction

Market efficiency is clearly the dominant micro-economic goal, because an efficient market provides the correct resource allocation decisions and economists are concerned with how correctly and timely new information is captured and transmitted into the resource allocation mechanism. In an efficient market, stock prices should adjust rapidly to the announcement of new information.

The objective of the study as outlined earlier was to determine whether stock prices adjusted to commercial paper issues and if they did, the direction of the stock price adjustments. In order to achieve these stated objectives, a research design was developed as outlined in chapter three and chapter four presented the data analysis and findings. In this chapter therefore, the conclusions made from the results of data analysis are presented. In addition the limitations of the study are given and recommendations for further research.

5.2 Conclusion

The findings of this study as evidenced by data presented and analyzed in chapter four came up with the following conclusions:

First and foremost, the findings concluded that companies in the NSE that took the bold step of substituting the commercial short-term bank loan with a commercial paper experienced some significant interest savings of between 2.85% and 13.85% with an average of 5.85%. Taking an example of Total (Kenya) whose interest savings was 13.85%, with the size of commercial paper standing at Kshs 1.2 billion, the interest saving in this first issue was Kshs 166.2 million. This clearly shows that the borrowing firms net cash flows increases.

Secondly, as this study was based on the implied increase in corporations net cashflows as evidenced by large amounts of interests savings, the expectations of the study was that the

abnormal returns surrounding the commercial paper issue announcement should be significantly positive. The study confirmed the above expectations as the prices increased as expected with a cumulative average adjusted returns over the full 61-day observation period of 0.34% , with a t-value of 3.41 which was statistically significant at 5% and even at 1% level. The above findings concludes that companies in the NSE which substituted A bank overdraft with a commercial paper experienced positive abnormal returns due to interest savings which increased the firms net cashflows. Hence commercial paper issue announcement is interpreted as good news by investors.

The study is consistent with other studies undertaken which involve implied increases in corporations net cashflows which were presented in chapter two. Examples of these studies include stock split study conducted by Fama et al (1969), dividend increases announcement by Charest (1978) and Aharony and Sway(1980) ,good earnings report by Ball and Brown(1968),Ricks(1982) on LIFO adoptions, etc. The above studies presented evidence of positive abnormal returns associated with implied increases in cashflows.

Lastly ,the study was also expected to provide evidence on the semi- strong form of market efficiency of NSE and hence the study concludes that NSE is in the semi-strong form of efficiency because stock prices adjusted rapidly to the announcement of new information.

5.3 Limitations of the study.

Every study is expected to have its unique limitations and weaknesses. Such limitations and weaknesses may be due to difficulties in designing the research problem or in the collection, availability and analysis of data.

This study is therefore no exception and the research should be read with the following limitations in mind;

- i) The major limitation of all event studies is that during the specified dates, other events are still occurring and hence it's impossible to separate the effects of one event from another.

- ii) The NSE trading is limited to only a few active companies, as contrasted to developed nations where we have many companies trading.
- iii) Assumptions were made concerning the market model used which could be limitations in themselves, and also its predictive power is very weak as coefficient of determination (r^2) was very low.
- iv) Lastly in designing the study a problem was encountered because although so many event studies are undertaken, there was no single study on price impact of commercial paper issue which could be replicated and hence the study had to be based on other events studies.

5.4 Suggestions for further Research.

Finance is relatively a new discipline with so many unresolved puzzles (e.g. capital structure, dividends etc.) and hence a very fertile grounds for future research to attempt to solve the puzzles or complicate them. In developed nations especially in US and UK, the greatest amount of research in finance has been devoted in testing the semi-strong form of market efficiency. Unfortunately in developing nations , Kenya included very little has been done in this field.

From the results of this study, the suggestions for future research include the following:

- i) Studies should be done to determine price impact on other announcements that pertain to politics, terrorism, appointment/resignation of managers/ mergers etc.
- ii) The same study could be repeated using intra-day prices to obtain accurate results.
- iii) The same study could be repeated and include not only first time issue announcement but also renewals of commercial papers.

APPENDICES

APPENDIX I

Companies which have issued commercial papers from 1994 to 2001.

Company	Year of first issue
1 Brooke Bond	1994
2 Caltex Oil	1995
3 Motor Mart	1995
4 British American Tobacco	1996
5 Mabati Rolling Mills ✓	1997
6 Athi River Mining ✓	1998
7 Agip Kenya ✓	1998
8 East African Industries	1999
9 Industrial Promotion Services	1999
10 CMC Holdings	1999
11 General Motors Kenya	1999
12 Nation Media Group	1999
13 Kenya Shell	1999
14 Kenya Power & lighting	1999
15 Pan Africa Paper Mills	1999
16 Total Kenya	1999
17 Express Kenya	1999
18 TPS Serena	1999
19 Crown Berger	2000
20 Kenya Hotel Properties	2000
21 Ecta Kenya	2000
22 Kenya Oil Company	2001
23 Bidco Oil Company	2001
24 Cooper Motors Corporation Holdings	2001
25 Panpaper Mills	2001

Source: Capital Markets Authority and Central Bank Statistics

Quoted Companies which have issued Commercial paper since 1994 and were analysed

Company	Control company	Announcement Date	Period Studied
(1) Brooke bond	George Williamson	12/07/94*	30/05/94-23/08/94
(2) Motor Mart	Car & General	18/12/95***	07/11/95-03/02/96
(3) BAT	BOC Gases	12/07/96***	31/05/96-23/08/96
(4) Athi-River Co. Ltd	EABL	16/06/98***	30/04/98-27/07/98
(5) CMC Holdings Ltd	Uchumi	10/03/99**	27/02/99-23/04/99
(6) Nation-Media Group Ltd	BAT	25/03/99*	11/02/99-10/05/99
(7) KPLC	EABL	09/12/99**	28/10/99-27/01/00
(8) Total (Kenya)	Bamburi	17/08/99***	06/01/99-30/09/99
(9) TPS Serena	DTrust	02/11/99**	17/09/99-15/12/99
(10) Crown Berger	EABL	05/09/00*	25/07/00-18/10/00
(11)Kenya Oil co. Ltd	Total Kenya	23/02/01***	10/01/01-11/03/01

Source;

* Newspaper

** Company

*** CMA and Central Bank Statistics.

NSE TWENTY SHARE COMPANIES

- 1) Brooke Bond
- 2) George Williamson
- 3) Kakuzi
- 4) Sasini
- 5) Kenya Airways/CMC
- 6) Lonrho Motors
- 7) Nation Media Group
- 8) Uchumi/Car & General
- 9) Barclays Bank
- 10) Diamond Trust
- 11) Kenya Commercial Bank
- 12) Standard Chartered
- 13) Bamburi Cement
- 14) British American Tobacco
- 15) BOC Gases
- 16) East African Breweries
- 17) East African Packaging
- 18) Kenya National Mills
- 19) Kenya Power & lighting
- 20) Total Kenya

APPENDIX II

RESEARCH QUESTIONNAIRE FOR PRICE IMPACTS OF COMMERCIAL PAPER ISSUE ANNOUNCEMENT ON THE NSE

(1) Name of the Company

.....

(2) Date of Incorporation

.....

(3) Nature of the Business

- (i) Manufacturing
- (ii) Agricultural
- (iii) Commercial
- (iv) Services
- (v) Others – Specify

(4) When did the company get approval to issue a commercial paper

.....
Day Month Year

(5) When was the first time the company announced to potential buyers of it's intention to issue a Commercial Paper (Launch date)

.....
Day Month Year

(6) Which communication media was used to announce the Commercial Paper issue intention

- (i) Radio
- (ii) T.V
- (iii) Newspaper (specify which one)
- (iv) Others – specify

(7) when did the company first issue commercial paper

.....
Day Month Year

(8) Please specify how the funds raised by C.P issue were used.

.....

(9) For what reasons was Commercial Paper chosen in preference to other similar short term sources of finance

.....

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