THE EXISTENCE OF "REVERSE" WEEKEND EFFECT: THE CASE OF NAIROBI STOCK EXCHANGE
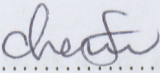
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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI.
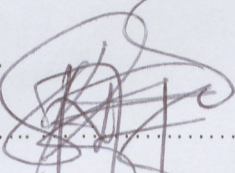
NOVEMBER, 2006

Declaration

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

Signed.............Cherui.....................Date...........28 / 11 /06

      Elima Kimonda Cherutoi

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

Signed ....Date.....28/11/2006

    Mr. Sifunjo Kisaka

Dedication

I dedicate this work to my immediate family and all the staff at Africa Inland Mission,

Kenya Branch, for their practical support and encouragement

Acknowledgement

I am deeply indebted to my supervisor Mr. Sifunjo Kisaka who guided and provided materials, insightful and valuable comments in all stages of my research.

I also register my gratitude to my colleagues who were always available whenever I needed their help and to my friends who gave me motivation to move on. However, any errors in this research are entirely my own.

ABSTRACT

The objective of this study was to investigate whether the NSE exhibits the reverse weekend effect. The reverse weekend effect anomaly purports that Monday returns are significantly positive and larger than those on other days of the week. The data used in this study consisted of daily stock returns of 32 sampled companies listed continuously at the NSE from 1st January 2001 to 31 st December 2005. Since the reverse weekend effect tends to be associated with stocks of large firms, we split data into two sub-samples for large and small companies. We then regressed weekly stock returns on the daily stock returns for the two sub-samples and the full sample. We examined the sign, magnitude and significance of Monday returns in relation to those of other days of the week. We found that Monday returns are highly significant but their coefficient is not positive. Hence there is no weekend effect at the Nairobi Stock Exchange. The findings of this study are consistent with the findings of Leuthold (1991) but contradict those of Brusa, Liu and Schulman (2005).

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Security prices and their behaviour, over the years, has been a concern to many financial analysts as well as other stakeholders in the economy. There has been intensive research, especially in the field of finance towards determining the behaviour of stock markets and share prices in particular. Investors attach a lot of importance to stock prices hence knowledge of information about stock prices enable them make informed decisions on when to buy, dispose or hold shares all for the purpose of making capital gains.

The extent to which information is reliable depends on the efficiency of the stock market. The Efficient Market Hypothesis (EMH) states that at any given time, security prices fully reflect all available information, implying that individuals who buy and sell securities do so with the assumption that the securities they are buying are worth more than the price they are paying , while those they are selling are worth less than the selling price. But if markets are efficient and current prices fully reflect all information, then buying and selling securities in an attempt to outperform the market will effectively be a game of chance rather than skill.

The contributions of scholars such as Eugene Fama on Efficient Market Hypothesis (1970), also asserts that if a market is efficient , no information or analysis can be expected to result in out performance of an appropriate benchmark. The random walk theory however asserts that price movements will not follow any patterns or trends and that past price movements cannot be used to predict future price movements. The debate about efficient market hypothesis has resulted in numerous empirical studies attempting to determine whether specific markets are in fact efficient and if so, to what degree.

Researchers have however documented some technical anomalies that seem to contradict the efficient market hypothesis (French, 1980, Galai, and Kedar-Levy, 2005). The anomalies which have been cited tend to work against the efficiency of the stock market. Such anomalies include the January effect, small firm and weekend effects (Brusa, Liu &

Schulman, 2005). Findings from research on these anomalies show that stock market efficiency (especially the weak form) may not be efficient.

The weekend effect is a situation where stock returns on Monday are significantly negative and are lower than returns on other days of the week. The weekend effect and its reverse are some of the anomalies that have been uncovered to be posing a challenge to the efficient market hypothesis especially in the weak form. Some of the researchers who have studied the calendar anomaly known as the Monday or weekend effect are for example Cross (1973) and more recently Schwert (1990). Results of these studies show that stock returns on Monday are significantly negative and are lower than returns on other days of the week.

Furthermore, studies of Brusa, Liu and Schulman (2003, 2005) suggest that the weekend effect has reversed, whereby Monday returns are significantly positive and larger than those on other days of the week. In addition, there is also evidence that the weekend effect and the reverse weekend effect depends on the size of firms as well as stock ownership composition in the market.

This study will focus on the reverse weekend effect. Our aim is to establish whether or not the reverse weekend effect is experienced at the NSE.

1.2 Statement of the Problem

The predictability of stock returns is a feature of inefficient stock markets. Research has uncovered stock market anomalies that seem to contradict the efficient market hypothesis (French, K., 1980). Such anomalies include the weekend effect and reverse weekend effect (Brusa, Liu and Schulman, 2005). Studies done in the seventies, eighties and early nineties by Cross (1973), French (1980) and Schwert (1990), Abraham and Ikenberry (1994) confirmed the existence of a weekend effect. This means that Monday returns are significantly lower than on other days of the week.

However, Kamara (1997) reports that the weekend effect has diminished significantly since the introduction of the S & P 500 futures contract in 1982. Furthermore, studies of Brusa, Liu and Schulman (2000) suggest that the weekend effect has reversed so that Monday

returns are significantly positive and larger than those on other days of the week. These studies also found that the weekend effect and the reverse weekend effect are as a result of such factors as firm size, share ownership composition and the previous Friday returns.

Studies investigating stock market anomalies in Kenya include Rasugu (2005) entitled "The Existence of the Holiday Effect at the NSE" and Mokua (2003) entitled "Weekend Effect on stock returns at the Nairobi Stock Exchange". Rasugu's study sought to establish whether the Nairobi Stock Exchange exhibits the weekend effect on the securities traded there. His sample consisted of 44 companies that traded continuously in the NSE for 5 years from 1st January 1998 to 31st December 2002. The study involved the use of secondary data obtained from NSE daily stock prices (bids) and dividends collected from 1st January 1998 to 31st December 2002. He used regression analysis models and *t-tests* to determine the significance of stock returns on pre-holidays, post holidays and non pre- holidays. A comparison of the mean returns of pre holiday and post holiday days showed no significant differences between the means. His findings depict the absence of holiday effect on the NSE.

Mokua (2003) sampled 43 companies listed in the NSE continuously for 5 years from 1st April 1996 to 31st March 2001.Secondary data was obtained daily transaction prices extracted from NSE records and bid prices were used as an approximation of the transaction prices. The data collected were analyzed using linear regression and comparison of means done under independent sample *t-test*. His study concluded that Monday returns are not significantly lower than the other days nor are Friday returns significantly higher than the other days of the trading week. His findings also depict the absence of the weekend effect on the NSE. This brings up the question whether indeed the reverse weekend effect does exist at the NSE.

1.3 Objective of the Study
To investigate whether there is a 'reverse' weekend effect on the NSE

1.4 Importance of the Study

There are various stakeholders who attach importance to the stock market. Such stakeholders include: The government (regulator), investors, fund managers, financial analysts and academicians. The findings from this study are important as follows:

1. *The government* as a regulator would be able to monitor the performance of the stock market, a signal of economic stability of a country.

2. *Investors* are very keen on the day to day performance of the stock market. The finding of this study would guide investors on when to invest if indeed there are changes on stock prices depending on which day.

3. *Financial analysts* offer advice to investors. Findings from the study would help them give sound information that will lead to investors making informed decisions.

4. *Fund Managers* are charged with the responsibility of identifying and investing in viable projects. Findings from the study will help them gauge the performance of the stock market hence know the right time to commit funds into projects.

5. *Academicians* want to contribute to the body of knowledge. This research will help in opening up opportunities for doing further research.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Efficient Market Hypothesis (EMH)

Efficient market hypothesis is an investment theory which states that it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information (Fama, Fisher, Jensen and Roll, 1969). According to the EMH, this means that stocks always trade at their fair value on stock exchanges, and thus it is impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. Thus, the crux of the EMH is that it should be impossible to outperform the overall market through expert stock selection or market timing, and that the only way an investor can possibly obtain higher returns is by purchasing riskier investments (Harvey, 1991). This theory has met a lot of opposition, especially from the technical analysts (Lakonishok and Marberly, 1990). Their argument against the efficient market theory is that many investors base their expectations on past prices, past earnings, track records and other indicators. Because stock prices are largely based on investor expectation, many believe it only makes sense to believe that past prices influence future prices (Haugen and Baker, 1996, Hirshleifer, 2001).

2.1.1 The Effect of Efficiency: Non-Predictability

The nature of information does not have to be limited to financial news and research alone; indeed information about political, economic and social events, combined with how investors perceive such information, whether true or rumored, will be reflected in the stock price (Hirshleifer, 2001). According to EMH, as prices respond only to information available in the market, and, because all market participants are privy to the same information, no one will have the ability to out-perform the market.

In efficient markets, prices are random, so no investment pattern can be discerned (Leuthold, 1998). A planned approach to investment, therefore, cannot be successful.

This "random walk" of prices, commonly spoken about in the EMH school of thought, results in the failure of any investment strategy that aims to beat the market consistently. In fact, the EMH suggests that given the transaction costs involved in portfolio management, it would be more profitable for an investor to put his or her money into an index fund (Lee, Shleifer and Thaler, 1990).

Fama's 1970 review (revisited in 1991) divides work on market efficiency into three categories:

        (1) Weak form

        (2) Semi-strong form

        (3) Strong form of market efficiency

The strong form suggests that securities prices reflect all available information, even private information. Seyhun (1986) provides sufficient evidence that insiders profit from trading on information not already incorporated into prices. Hence the strong form does not hold in a world with an uneven playing field. The semi-strong form of EMH asserts that security prices reflect all publicly available information. There are no undervalued or overvalued securities and thus, trading rules are incapable of producing superior returns. When new information is released, it is fully incorporated into the price rather speedily. The availability of intraday data enabled tests which offer evidence of public information impacting stock prices within minutes (Patell and Wolfson, 1984, Gosnell, Keown and Pinkerton, 1996). The weak form of the hypothesis suggests that past prices or returns reflect future prices or returns. The inconsistent performance of technical analysts suggests this form holds. However, Fama (1991) expanded the concept of the weak form to include predicting future returns with the use of accounting or macroeconomic variables. However, the evidence of predictability of returns provides an argument against the weak form (Shiller, 1998).

The EMH has provided the theoretical basis for much of the financial market research during the seventies and the eighties. In the past, most of the evidence seems to have been consistent with the EMH (Seyhun, 1968). Prices were seen to follow a random walk model and the predictable variations in equity returns, if any, were found to be statistically

insignificant. While most of the studies in the seventies focused on predicting prices from past prices (Malkiel,1977), studies in the eighties also looked at the possibility of forecasting based on variables such as dividend yield (Fama & French, 1988), P/E ratios (Campbell and Shiller ,1988) and term structure variables (Harvey , 1991). Studies in the nineties looked at inadequacies of current asset pricing models (La Porta, Lakonishok, Shleifer and Vishny, 1997).

The maintained hypothesis of EMH also stimulated a plethora of studies that looked, among other things, at the reaction of the stock market to the announcement of various events such as earnings (Ball & Brown ,1968), stock splits (Fama, Fisher, Jensen and Roll ,1969), capital expenditure (McConnell and Muscarella, 1985), divestitures (Klein 1986) and takeovers (Jensen and Ruback , 1983). The usefulness or relevance of the information was judged based on the market activity associated with a particular event. In general, the typical results from event studies showed that security prices seemed to adjust to new information within a day of the event announcement, an inference that is consistent with the EMH (Patell and Wolfson, 1984). Even though there is considerable evidence regarding the existence of efficient markets(Shiller, 1998,Grossman and Stiglitz,1980), one has to bear in mind that there are no universally accepted definitions of crucial terms such as abnormal returns, economic value, and even the null hypothesis of market efficiency. To this list of caveats, one could add the limitations of econometric procedures on which the empirical tests are based (Reiganum, 1981).

Fama's second review (1991) on Efficient Market Hypothesis reiterates that any investigation of market efficiency has at least two problems: The first is information and transaction costs and the other is the joint-hypothesis problem. Unlike the 1970 paper which he used the terms Weak-form, Semi-Strong form and Strong form, Fama (1991) focuses on three areas:

1. Tests for return predictability

2. Event studies

3. Tests of private information

When looking at return predictability, Fama (1991) points out the change in focus in this area. Formerly it was just testing short-run return predictability from past returns. Now it includes other variables such as dividend yields (D/P), Earnings/price (E/P), and term-structure variables as well as for longer horizons. He borrows the contributions of French and Roll (1986) who report that stock prices are more variable when the market is open. This has been interpreted by some as noise and an indication of market inefficiency (Basu, 1997). However, the size of the autocorrelations is small for short-run autocorrelations.

For longer-term horizons, Shiller (1984) and Summers (1986) present a view that stock prices take large slowly decaying swings away from fundamental values, but short-horizons have little autocorrelations. Tests of this model have been "largely fruitless." There has been some evidence of negative autocorrelations in the 3-5 year horizons but as Fama and French (1988) show these largely disappear when the 1926-1940 period is dropped.

Still on return predictability, Fama (1991) points out that any test of asset pricing models runs into the joint-hypothesis problem, where he emphasizes the fact that one can never know whether the market is inefficient or the model is wrong and that the choice of model may influence the findings. His conclusion on predictability is the absence of a pricing model. Not surprisingly multi-factor models work better (not surprising because researcher can look until they find something). Moreover, it is possible that all of the models are capturing the same risk factor but we do not recognize it yet.

On tests for private information, Fama (1991) suggests several different ways of investigating this:

1. Insider trading: insiders do beat the market (Jaffe, 1974 and Seyhun 1986). Insider trading is where insiders profit from trading on information not already incorporated into prices.

2. Security Analysts: Value Line and other anomalies suggest that analysts do provide some information. This is inconsistent with Efficient Markets if one assumes the absence of information costs, but is perfectly consistent if information is costly to obtain (Grossman Stiglitz, 1980).

3. Professional portfolio management: Results are largely consistent with the idea that on average people do not beat the market. There are some conflicting theories (Jaffe, 1974), but other researchers for example Fama and French (1995) agree with this conclusion.

Overall it appears the market is quite efficient but not perfectly so. There appears to be some predictability and some mean reversion in long-run returns, but not so much in the short-run tests.

The early euphoric research of the seventies was followed by a more cautioned and critical approach to the EMH in the eighties and nineties. Researchers repeatedly challenged the studies based on EMH by raising critical questions such as: Can the movement in prices be fully attributed to the announcement of events? (Patell and Wolfson, 1984), Do public announcements affect prices at all?(Bernard,1993) and what could be some of the other factors affecting price movements?(Cutler, Porteba and Summers,1989). For example, Roll (1988) argues that most price movements for individual stocks cannot be traced to public announcements. In their analysis of the aggregate stock market, Cutler, Poterba and Summers (1989) reach similar conclusions. They report that there is little, if any, correlation between the greatest aggregate market movement and public release of important information. More recently, Haugen and Baker (1996) in their analysis of determinants of returns in five countries conclude that none of the factors related to sensitivities to macroeconomic variables seem to be important determinants of expected stock returns.

2.1.2 The Current Debate

The accumulating evidence suggests that stock prices can be predicted with a fair degree of reliability (Fama, 1970). Two competing explanations have been offered for such behavior. Proponents of EMH (Fama and French, 1995) maintain that such predictability results from time-varying equilibrium expected returns generated by rational pricing in an efficient market that compensates for the level of risk undertaken. Critics of EMH (La Porta, Lakonishok, Shliefer, and Vishny, 1997) argue that the predictability of stock returns reflects the psychological factors, social movements, noise trading, and fashions or "fads" of irrational investors in a speculative market. The question about whether predictability of returns represents rational variations in expected returns or arises due to irrational speculative

deviations from theoretical values has provided the impetus for fervent intellectual inquiries in the recent years.

2. 2. The Challenge to Efficiency

The hitherto dominant paradigm in financial market research, the Efficient Market Hypothesis (EMH), has been put on trial recently and subjected to critical re-examination (Porteba and Samwick, 1995). The preliminary evidence indicates that the initial confidence in the Efficient Market Hypothesis might have been misplaced (Reiganum, 1981). It is observed that financial equilibrium models based on EMH fail to depict trading operations in the real world (Haugen and Baker, 1996). Various anomalies and inconsistent results call for refinement of the existing paradigm (Haugen and Baker, 1996).

In the real world of investment, however, there are obvious arguments against the EMH. There are investors who have beaten the market. Warren Buffet, whose investment strategy focuses on undervalued stocks, made millions and set an example for numerous followers (Dechow, Hutton, Meulberek and Sloan, 2000). There are portfolio managers that have better track records than others, and there are investment houses with more renowned research analysis than others (Gompers and Metrick, 2001). So how can performance be random when people are clearly profiting from and beating the market?

Studies in behavioural finance, which look into the effects of investor psychology on stock prices, also reveal that there are some predictable patterns in the stock market (Hirshleifer and Shumway, 2001). Investors tend to buy undervalued stocks and sell overvalued stocks, and, in a market of many participants, the result can be anything but efficient (Klein, 1986).

Patel, Zeckhauser and Hendricks (1991) argue that for most economists it is an article of faith that financial markets reach rational aggregate outcomes, despite the irrational behaviour of some participants, since sophisticated players stand ready to capitalize on the mistakes of the naive. Yet financial markets have been subject to speculative fads that are

hard to interpret as rational (Hirshleifer, 2001). Shiller (1998) reiterates that recent literature in empirical finance is surveyed in its relation to underlying behavioural principles, principles which come primarily from psychology, sociology and anthropology. In his article, the behavioural principles discussed are: prospect theory, regret and cognitive dissonance, anchoring, mental accounting, overconfidence, over and under reaction, gambling behaviour and speculation, attention anomalies and global culture.

Barber and Odean (1999) argue that the field of modern financial economics assumes that people behave with extreme rationality, but they do not. They point out that people's deviations from rationality are often systematic. Behavioural finance relaxes the traditional assumptions of financial economics by incorporating these observable, systematic and very human departures from rationality into standard models of financial markets. They highlight two common mistakes investors make: excessive trading and the tendency to disproportionately hold on to losing investments while selling winners. They further argue that systematic biases have their origins in human psychology. That the tendency for human beings to be overconfident causes the first bias in investors, and the human desire to avoid regret prompts the second.

Hirshleifer (2001) also makes his contribution that the basic paradigm of asset pricing is in vibrant flux. The purely rational approach is being subsumed by a broader approach based upon the psychology of investors. In this approach, security expected returns are determined by both risk and misevaluation. Hirshleifer's broader observation is that investor behaviour in natural and experimental markets report evidence consistent with a disposition effect, a greater readiness to realize gains than losses. Certain groups of investors change their behaviours in parallel, in some cases engaging in momentum trading that result in gain.

2.2.1 *Market Anomalies*

The EMH became controversial especially after the detection of certain anomalies in the capital markets. Some of the main anomalies that have been identified are as follows:

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Day of the Week Effect: Evidence from equity markets worldwide indicate that the day of the week anomaly appears to fade once the distribution of daily returns begins. Studies by Galai, Dan and Kedar-Levy, Haim "Day-of-the-Week Effect"(August, 2005) report highly significant pair wise weekend effects in high moments when comparing the first and last trading days of the week. He observes a pattern of high returns around the middle of the week (Tuesday and Wednesday) and a lower one towards the end of the week (Thursday and Friday). A probable explanation of the phenomena appears to be information dissemination: corporate announcements released after closing of the last trading day of the week spill -over to the opening of the first trading day, increasing its variability and carrying the closing sign (Harris, 1986).This indicates that Friday being the last trading day of the week has become significant in that Monday returns are a reflection of Friday returns. Such intra-day variability is a clear indication of market inefficiency.

The January Effect: Rozeff and Kinney (1976) were the first to document evidence of higher mean returns in January as compared to other months. Using NYSE stocks for the period 1904-1974, they find that the average return for the month of January was 3.48 percent as compared to only .42 percent for the other months. Later studies document that the effect persists in more recent years: Bhardwaj and Brooks (1992) for 1977-1986 and Eleswarapu and Reinganum (1993) for 1961-1990. The effect has been found to be present in other countries as well (Gultekin and Gultekin, 1983). The January effect has also been documented for bonds by Chang and Pinegar (1986). Maxwell (1998) shows that the bond market effect is strong for non-investment grade bonds, but not for investment grade bonds. More recently, Bhabra, Dhillon and Ramirez (1999) document a November effect, which is observed only after the Tax Reform Act of 1986. They also find that the January effect is stronger since 1986. Taken together, their results support a tax-loss selling explanation of the effect. This is a challenge to EMH in that intra-month returns can result in superior returns.

The Weekend/Monday Effect: French (1980) analyzed daily returns of stocks for the period 1953-1977 and find that there is a tendency for returns to be negative on Mondays whereas they are positive on the other days of the week. He notes that these negative returns are caused only by the weekend effect and not by a general closed-market effect. A trading strategy, which would be profitable in this case, would be to buy stocks on Monday and sell

them on Friday. Kamara (1997) shows that the S&P 500 has no significant Monday effect after April 1982, yet he finds the Monday effect undiminished from 1962-1993 for a portfolio of smaller U.S. stocks. Internationally, Agrawal and Tandon (1994) find significantly negative returns on Monday in nine countries and on Tuesday in eight countries, yet large and positive returns on Friday in 17 of the 18 countries studied. However their data do not extend beyond 1987. Steeley (2001) finds that the weekend effect in the UK has disappeared in the 1990s. The fact that there are trading strategies (buying stocks on Monday and selling on Friday) for higher returns is a challenge to market efficiency which purports that there are no trading rules to make excess returns.

Other Seasonal Effects

Holiday and **Turn of the month** effects have been well documented over time and across countries. Lakonishok and Smidt (1988) show that US stock returns are significantly higher at the turn of the month, defined as the last and first three trading days of the month. Ariel (1987) shows that returns tend to be higher on the last day of the month. Cadsby and Ratner (1992) find similar turn of the month effects in some countries and not in others. Ziemba (1991) finds evidence of a turn of the month effect for Japan when turn of month is defined as the last five and first two trading days of the month. Hensel and Ziemba (1996) and Kunkel and Compton (1998) show how abnormal returns can be earned by exploiting this anomaly. Lakonishok and Smidt (1988), Ariel (1990), and Cadsby and Ratner (1992) all provide evidence to show that returns are, on average, higher the day before a holiday, than on other trading days. The latter paper shows this for countries other than the U.S. Brockman and Michayluk (1998) describe the pre-holiday effect as one of the oldest and most consistent of all seasonal regularities. The fact that abnormal returns can be earned by exploiting this anomaly is clear indication of market inefficiency.

Small Firm Effect: Banz (1981) published one of the earliest articles on the 'small-firm effect' which is also known as the 'size-effect'. His analysis of the 1936-1975 period reveals that excess returns would have been earned by holding stocks of low capitalization companies. Supporting evidence is provided by Reinganum (1981) who reports that the risk adjusted annual return of small firms was greater than 20 percent. If the market were

efficient, one would expect the prices of stocks of these companies to go up to a level where the risk adjusted returns to future investors would be normal. But this did not happen.

P/E Ratio Effect: Basu (1977) shows that stocks of companies with low P/E ratios earned a premium for investors during the period 1957-1971. An investor who held the low P/E ratio portfolio earned higher returns than an investor who held the entire sample of stocks. These results also contradict the EMH. Campbell and Shiller (1988b) show P/E ratios have reliable forecast power. Fama and French (1995) find that market and size factors in earnings help explain market and size factors in returns. Dechow, Hutton, Meulbroek and Sloan (2001) document that short-sellers position themselves in stocks of firms with low earnings to price ratios since they are known to have lower future returns.

Value-Line Enigma: The Value-Line organization divides the firm into five groups and ranks them according to their estimated performance based on publicly available information (Buffet, Warren in *Fortune* April3, 1995). Over a five year period starting from 1965, returns to investors correspond to the rankings given to firms. That is, higher ranking firms earned higher returns. Several researchers (for example Stickel, 1985) find positive risk-adjusted abnormal (above average) returns using value line rankings to form trading strategies, thus challenging the EMH.

Over/Under Reaction of Stock Prices to Earnings Announcements: There is substantial documented evidence on both over and under-reaction to earnings announcements (Zarowin, 1991). DeBondt and Thaler (1985, 1987) present evidence that is consistent with stock prices overreacting to current changes in earnings. They report positive (negative) estimated abnormal stock returns for portfolios that previously generated inferior (superior) stock price and earning performance. This could be construed as the prior period stock price behavior overreacting to earnings developments (Bernard, 1993). Such interpretation has been challenged by Zarowin (1989) but is supported by DeBondt and Thaler (1990). Bernard (1993) provides evidence that is consistent with the initial reaction being too small, and being completed over a period of at least six months. Ou and Penman (1989) also argue that the market underutilizes financial statement information. Bernard (1993) further notes that such anomalies are not due to research design flaws, inappropriate

adjustment for risk, or transaction costs. Thus, the evidence suggests that information is not impounded in prices instantaneously as the EMH would predict.

Standard & Poor's (S&P) Index Effect: Harris and Gurel (1986) and Shleifer (1986) find a surprising increase in share prices (up to 3 percent) on the announcement of a stock's inclusion into the S&P 500 index. Since in an efficient market only information should change prices, the positive stock price reaction appears to be contrary to the EMH because there is no new information about the firm other than its inclusion in the index.

Pricing closed-end funds: The Investment Company Act of 1940 (USA) regards all investment funds that do not continuously issue and redeem their shares as closed-end funds. Unlike open-end funds, closed-end funds do not stand ready to sell or repurchase their securities at the net asset value per share. They float a fixed number of shares in an initial public offering and after that, investors wishing to buy or sell shares of a closed-end funds must do so in the secondary market. The prices in the secondary market are dictated by the market forces of demand and supply which may not be directly linked to the funds fundamental or net asset value. Malkiel (1977) argues that the market valuation of closed-end investment company shares reflects mispricing. As he notes, "The pricing of closed-end funds does then seem to provide an illustration of market imperfection in capital-asset pricing," (Malkiel, 847). In general, the funds have been shown to trade at a discount relative to their net asset values (See Malkiel, 1977; Brickley and Schallheim, 1985; Lee, Shleifer and Thaler, 1991). Between 1970 and 1990, the average discount on closed-end funds ranged between 5 to 20 percent. The existence of discounts clearly contradicts the value additivity principle of efficient and frictionless capital markets. Reports from the popular press have also commented on mispricing in the closed-end fund market. As Laderman notes in *Business Week* (March 1, 1993) that America's financial markets are the most efficient in the world. But there's one corner where pockets of inefficiency still exist: closed-end funds.

Weather: Few would argue that sunshine puts people in a good mood. People in good moods make more optimistic choices and judgments. Saunders (1993) shows that the New York Stock Exchange index tends to be negative when it is cloudy. More recently, Hirshleifer and Shumway (2001) analyze data for 26 countries from 1982-1997 and find that

stock market returns are positively correlated with sunshine in almost all of the countries studied. Interestingly, they find that snow and rain have no predictive power!

These phenomena have been rightly referred to as anomalies because they cannot be explained within the existing paradigm of EMH. It clearly suggests that information alone is not moving the prices, (Roll, 1984). These anomalies have led researchers to question the EMH and to investigate alternate modes of theorizing about market behavior. Such a development is consistent with Kuhn's (1970) route for progress in knowledge. As he states, "Discovery commences with the awareness of anomaly, i.e., with the recognition that nature has somehow violated the paradigm induced expectations..." (Kuhn, 52)

2.2.2 Empirical Studies on the Reverse Weekend effect:

The reverse weekend effect anomaly purports that Monday returns are significantly positive and larger than those on other days of the week. Previous studies in the financial literature have documented the existence of significantly negative Monday returns in stock markets (Schwert, 1990; Keim, 1987). For instances, Schwert (1990) examines the U.S. stock indexes from 1802 to 1987 and reports the existence of a weekend effect during this period. Keim (1987), who studies the U.S. indexes during the 1963- 1985 period, also reports the existence of a weekend effect. Kamara (1997) reports that the effect, while still exists, has diminished significantly since the introduction of the S&P 500 futures contract in 1982.

Other studies on the weekend effect include those by Cross (1973), French (1980), and more recently, Schwert (1990), Lakonishok and Maberly (1990), Abraham and Ikenberry (1994), and Wang, Li, and Erickson (1997). The results in these studies conclude that stock returns on Monday are significantly negative and they are lower than returns on other days of the week. However, Connolly (1989) points out that the weekend effect is not stable over time. It appears in some periods, disappears in certain periods, and reappears in others. In addition, Kamara (1997) reports that the effect has diminished significantly since the introduction of the S&P 500 futures contract in 1982.

Recent evidence from the stock markets of the United States indicates that the traditional weekend effect has reversed with Monday returns being significantly positive, (Brusa, Liu

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and Schulman, 2005) .This study examined the daily returns from U.S S & P 500 index and the Canadian S & P /TSX Composition index over the period 1988-2003.Consistent with findings of other empirical studies, the researchers find that there is indeed a reversal of the weekend effect in the U.S market. While there is a weak evidence based on non-parametric tests of this effect in the Canadian market, this is not supported by *t-tests* and the regression used by French (1980).

Studies by Brusa, Liu, and Schulman (2000, 2005) suggest that the weekend effect has reversed recently in the early nineties. Their study was done over an extended period of eleven years (1988 to 1998) with the aim of investigating Monday returns for four major stock market indexes: the Dow Jones Industrial Average (DJIA), the Standard and Poor's 500 indexes (S&P 500), the CRSP value-weighted index, and the NASDAQ stock index. They find that while Monday returns tend to be negative during the pre-1988 period, this weekend effect is reversed during the post-1988 period. The degree of the "reverse" weekend effect is related to firm size. While small firms still show diminishing weekend effect, large firms have strong "reverse" weekend effect. Their results indicate that the "reverse" weekend effect is not only a temporary phenomenon. Instead, it is a sustained anomaly that exists over an extended period in the recent market. They also examined whether the appearance of the "reverse" weekend effect can be attributed to the change in the stock ownership composition in the market. Previous studies of the weekend effect conclude that the trading activities of individual investors contribute to the existence of the "traditional" weekend effect (Lakonishok and Maberly, 1990; Abraham and Ikenberry, 1994). Furthermore, the study of Abraham and Ikenberry (1994) also reports that the trading behavior of individual investors is one of the factors contributing to the positive autocorrelation between Friday returns and the following Monday returns – i.e. positive (negative) returns on Friday tend to be followed by positive (negative) returns on the following Monday and this positive Friday-Monday autocorrelation is stronger for small and medium size companies than large companies.

The composition of the stock ownership in the U.S., however, has steadily shifted from individuals to institutions in the past few decades as noted by Poterba and Samwick (1995), and Gompers and Metrick (2001). For instance, the stock ownership by individuals has

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declined significantly from nearly 90 percent in the 1950s to less than 50 percent in the mid-1990s, while the stock ownership by institutions (pension funds, mutual funds, and insurance companies) has increased considerably from less than 8 percent to more than 40 percent during the same period (Poterba and Samwick, 1995 p.313). Moreover, by December 1996 "large" institutional investors – institutions having at least $ 100 million under management – held control over more than half of the U.S. equity market (Gompers and Metrick (2001)).

Since institutional investors behave differently from individual investors in many aspects, the documentation of the shift in stock ownership-composition from individuals to institutions raises an interesting question: Could the shift in stock ownership-composition explain, at least in part, the existence of the "reverse" weekend effect? For instance, if the trading activity of individual investors is one of the contributing factors to the existence of the "traditional" weekend effect (as documented by Lakonishok and Maberly,1990 and Abraham and Ikenberry, (1994), could the trading activity of institutional investors be related to the "reversed" weekend effect?

The conjecture of the association between the shift in stock ownership-composition and the reversal of the weekend effect becomes more plausible if we take into account the findings in the literature that the "reversed" weekend effect is documented mostly in stocks of larger and more liquid firms (Brusa, Liu and Schulman, 2005), which are also more favored by institutional investors (Gompers and Metrick, 2001), because these stocks cost less in trading for institutional investors (Kamara, 1997), and investing in these stocks is considered more "prudent" than investing in stocks of small firms (Del Guercio (1996)). Furthermore, the studies in the literature also report that the trading behavior of individual investors is one of the factors contributing to the positive autocorrelation between Friday returns and the returns on the following Monday (Abraham and Ikenberry (1994)). If the stock ownership-composition has shifted from individuals toward institutions, and institutions tend to invest in stocks of larger firms, then we may expect the Friday-Monday return autocorrelation for larger firms to be changed.

Brusa et al hypothesize that the trading of institutional investors in stocks of large firms contributes to the existence of the "reverse" weekend effect. They test this hypothesis and

the results in show that the trading activities of institutional investors are positively related to the positive Monday returns documented in the post-1988 period while the trading activities of individual investors are negatively related to Monday returns.

Finally, they examine the association between Monday returns and the previous Friday returns for stocks of large and small firms. They find significant differences in the Friday-Monday return autocorrelation between stocks of large and small firms. During the period in which the "reverse" weekend effect is detected (1988-1998), small stocks exhibit a positive autocorrelation between Friday and Monday returns – i.e. positive Friday returns tend to be followed by positive Monday returns, and negative Friday returns tend to be followed by negative Monday returns. However, the positive correlation between Friday and Monday returns does not exist for stocks of larger firms during the post-1988 period. While positive Friday returns still tend to be followed by positive returns on the following Monday, negative Friday returns are not followed by negative Monday returns.

Brusa's study entailed secondary data obtained from New York Stock Exchange where he used daily indices. He used the following regression model:

$$R_t = \beta_0 + \beta_1 MON_t + E_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where: R_t is the return on day t, β_0 is the intercept, β_1 is the coefficient on a dummy variable MON_t, that equals one on Monday and zero otherwise, and E_t is the error term. He used t-statistics to test the null hypothesis that $\beta_1 = 0$ (that is, the difference between average Monday returns and average returns throughout the week is zero).

In Kenya, Mokua (2003) in a study entitled "The Existence of the Weekend Effect on the NSE" used a sample of 43 companies listed continuously in the NSE for 5 years from 1st April 1996 to 31st March 2001. Secondary data was obtained from the NSE, daily transaction prices were extracted from NSE records and bid prices were used as an approximation of the transaction prices. The data collected were analyzed using linear regression and comparison of means done under independent sample *t-test*. F-statistic test was done to determine the equality of means across all the 5 days from Monday through Friday. His

study concluded that Monday returns are not significantly lower than the other days nor are Friday returns significantly higher than the other days of the trading week. His findings also depict the absence of the weekend effect on the NSE.

This study aimed at inquiring into the existence of the reverse weekend effect at the NSE.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Population of the Study

The population of the study consisted of all the companies quoted at the Nairobi Stock Exchange as at 31 st December 2005.Only those companies that trade in equity stocks were included since the study sought to investigate equity stock market behaviour. The population of listed firms whose shares were traded at the NSE as at 31 st December 2005 stood at 54.

3.2 Sampling Frame

The sample included companies listed continuously for 5 years from 1st January 2001 to 31st December 2005 and for which data on stock returns was available. Thirty two (32) companies satisfied the sampling criteria. A list of the sample companies is shown in Appendix 1. The sample was further subdivided into two; large and small companies (appendix 2). A subjective judgment was done where a company was considered large if its market capitalization was above Ksh 5 billion, otherwise it was considered small.

3.3 Data and Study Period

We used secondary data obtained from the Nairobi Stock Exchange and daily transaction prices extracted from the NSE records. Kiweu (1991) in his pilot study shows that the NSE bid prices are close to the transaction prices. In this study too, we used bid prices as an approximation of transaction prices. A duration of five years from 1st January 2001 to 31 December 2005 is used due the fact that reverse weekend effect is a recent phenomenon.

3.4 Data Analysis

The daily bid prices were then transformed into daily stock returns using the formula below

$$\acute{\alpha}j = \frac{(Po-Pj)}{Pj}$$

Where: $\acute{\alpha}j$ is the daily stock return of stock j

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Po is the daily closing price

Pj is the daily opening price

To test for the significance and magnitude of the daily returns, independent samples test were used in the evaluation of the null hypothesis, in which all Monday returns were compared with the rest of the days (that is Tuesday, Wednesday, Thursday and Friday). Regression analysis method was used where weekly returns were regressed against daily returns. The t-statistics and coefficients of the variables were compared.

We examined daily returns using the methodology developed by Connolly 1989) and later used in the literature (for example by Chang, Pinegar and Ravichandran, 1993).

The methodology was based on the following regression model:

$$R_t = \beta_{1t}\,\dot{\alpha}_1 + \beta_{2t}\,\dot{\alpha}_2 + \beta_{3t}\,\dot{\alpha}_3 + \beta_{4t}\,\dot{\alpha}_4 + \beta_{5t}\,\dot{\alpha}_5 + E_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where:

R_t is the weekly return

β_i (i=1 ,2,3,4 & 5) is the coefficient for each day of the week and Et is the error term.

$\dot{\alpha}_1 = \dot{\alpha}_2 = \dot{\alpha}_3 \dots\dots\dots \dot{\alpha}_5 =$ Return for each day of the week

The hypothesis is:

H_0: $\beta_1 > 0$.................positive coefficient

H_1: $\beta_1 < 0$.................negative coefficient

The regression model used is a slight modification from Brusa's because he used share indices while in our case we used share prices.

We examined the significance of β_1 and the sign of the coefficient to determine whether β_1 is larger than the rest of the coefficients. If β_1 is positive with a high t-statistic, the result suggests that Monday mean returns are not only significantly positive but also significantly

greater than other days of the week. The null hypothesis is therefore rejected and the results support the hypothesis for the existence of a "reverse" weekend effect at the NSE.

3.4.1 Autocorrelation Test

Auto-correlation test is a reliable measure for testing of either dependence or independence of random variables in a series. The serial correlation coefficient measures the relationship between the values of a random variable at time t and its value in the previous period, $t-1$. Auto correlation test provides evidence whether the correlation coefficients (δ_i) for lagged variables are significantly different from zero. The test is based on the following regression of equation (3):

$$\Delta R_t = R_{t-1} + \delta_1 \Delta R_{t-1} + \delta_2 \Delta R_{t-2} + \delta_3 \Delta R_{t-3} + \ldots\ldots + \delta_n \Delta R_{t-n} \ldots\ldots\ldots(3)$$

Where:

$$\delta \quad = \quad \text{Coefficient of the error term}$$

$$R_t \quad = \quad \text{Residual from the regression}$$

$$\delta_i \quad = \quad \text{Coefficient of the lagged residuals}$$

$$\Delta R_t \quad = \quad R_t - R_{t-1}$$

We used the t-statistic to test the significance of the coefficients. Our null hypothesis was: There is no autocorrelation (H$_0$: $\delta_1 = \delta_2 = \delta_3 = 0$)

3.4.2 Test for Heteroscedasticity

The heteroscedasticity test was based on the ARCH model below:

$$\delta^2_{t} = \alpha_1 \mu^2_{t-1} + \alpha_2 \mu^2_{t-2} + \ldots + \alpha_n \mu^2_{t-n} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (4)$$

Where δ^2 = variance $^{\text{of the}}$ error term

μ^2 = squared lagged residuals

The null hypothesis was: There is no heteroscedasticity (H_0: $\delta_1 = \delta_2 = \delta_3 = 0$)

We applied the t-test to determine the significance of the coefficients

4.0 RESULTS, DISCUSSION, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

4.1 Introduction

The daily returns for Monday through Friday were analysed. The theory of reverse weekend effect holds that Monday returns are significantly positive and larger than those on other days of the week (Brusa, Liu and Schulman, 2005). The hypothesis for positive Monday returns was tested. Using a sample of 32 companies, we did a regression analysis of weekly returns and daily returns from Monday to Friday.

4.2 Regression Analysis Results for Weekly Returns Vs Daily Returns

Table 1 is a summary of regression analysis in which weekly returns of all companies were regressed against daily returns for Monday, Tuesday, Wednesday, Thursday and Friday.

Table 1: Regression Analysis Results for All Sample Companies

Observations	8320

ANOVA	

	df
Regression	5
Residual	8315
Total	8320

	Coefficients	Standard Error	t-Statistic	P-value
Intercept	-0.0863	0.0101	-7.8923	0.0001
Monday	-0.6314	0.3000	-2.1066	0.0352
Tuesday	-1.0379	0.3175	-3.2690	0.0012
Wednesday	-0.5303	0.2673	-1.9840	0.0473
Thursday	-0.4402	0.2360	-1.8650	0.0622
Friday	0.0799	0.2208	0.3619	0.7175

Total observations were 8,320. The null hypothesis was tested at 95% level of significance. The critical value at 95% level of significance is 1.96. As shown above, results indicate that Monday returns have a t-statistic of -2.1066 with a corresponding coefficient of -0.6314. Therefore Monday returns are significant since the t-statistic is higher than the critical value. The coefficient however is negative. These results contradict the theory of reverse weekend effect.

As stated in Chapter Three, we then analyzed the data according to company sizes. *According to Brusa Liu and Schulman (2005), stocks of large firms are associated with the* reverse weekend effect. Large firms in our case are those that have a market capitalization of Ksh 5 billion and above, the rest are considered small. According to the criteria used, large companies in the sample are fifteen (15) and the small ones are seventeen (17). These companies have been listed in appendix 2.

Table 2: Regression Analysis Results for Large Companies

Observations	3900			
ANOVA				
	df			
Regression	5			
Residual	3895			
Total	3900			
	Coefficients	Standard Error	t- Statistic	P-value
Intercept	-0.0552	0.0160	-3.4535	0.0006
Monday	-1.3506	0.4851	-2.7844	0.0054
Tuesday	-1.7534	0.4464	-3.9282	0.0001
Wednesday	-0.1186	0.4691	-0.2528	0.8005
Thursday	-0.2970	0.4176	-0.7110	0.4771
Friday	0.2710	0.2629	1.0311	0.3026

Table 2 shows the results of the regression analysis done for the fifteen companies, where weekly returns were regressed against daily returns. Total observations were 3,900. With a critical value of 1.96, Monday returns are statistically significant (-2.7844). The coefficient for Monday returns is however negative (-1.3506). In fact it is second the lowest after Tuesday (-1.7534). Again the results do not depict the existence of reverse weekend effect, a contradiction to Brusa, Liu and Schulman's (2005) claim that reverse weekend effect is associated with stocks of large companies.

Table 3: Regression Analysis Results for Small Companies

Observations	4420			
ANOVA				
	df			
Regression	5			
Residual	4415			
Total	4420			
	Coefficients	Standard Error	t- Statistic	P-value
Intercept	-0.1110	0.0149	-7.4529	0.0930
Monday	-0.2045	0.3786	-0.5403	0.5891
Tuesday	-0.3795	0.4892	-0.7758	0.4379
Wednesday	-0.6911	0.3234	-2.1371	0.0326
Thursday	-0.4756	0.2848	-1.6701	0.0950
Friday	-0.3793	0.4090	-0.9276	0.3536

The same regression analysis procedure was done for the small companies and the results are as shown in table 3. Total observations were 4,420. Monday returns are not significant since the t-statistic (-0.5403) is lower than the critical value (1.96) and the coefficient is also not positive.

Even after segregating companies into large and small, Monday returns though significant (in the large sample), do not have a positive coefficient. The results from the analysis do not depict the existence of reverse weekend effect.

Results from the autocorrelation indicate that weekly returns lagged 1 and 2 times have coefficients of 1 except for lag 3 with a coefficient of 0. The t-statistics are large and exceed the critical value hence we reject the null hypothesis that there is no autocorrelation. The p-values are also highly significant.

The results from the heteroscedasticity test show that $\alpha_1=\alpha_2=\alpha_3=0$, hence we reject the null hypothesis of no heteroscedasticity. Therefore heteroscedasticity is not present in weekly returns.

4.3 Discussion

Given the pivotal role played by the stock market in mobilizing funds and instilling confidence in market participants about the performance of a given economy, this study sought to use the Nairobi Stock Exchange (NSE) as a case to determine the existence of reverse weekend effect. We wanted to establish whether Monday returns are higher than for the other days of the week. A sample of thirty- two firms and further two sub-samples of fifteen and seventeen firms were used to conduct the study. Our findings showed that Monday returns are not higher than for the other days of the week.

The results from this study have implications to both institutional and individual investors. Speculative investors will buy shares for short term gain, holding them for a short period then dispose at a gain. Institutional investors, on the other hand are mainly after dividends and capital gains over a long period of time. Where investors have long term motives, they are likely to wait until share prices stabilize.

This study therefore, made a contribution towards resolving the empirical issue as to whether Monday would be the best day to dispose stocks. Investors should in fact be warned that Monday is the worst day (after Tuesday) to dispose stocks. They should not rely

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on mere speculation that Monday returns are higher than for the other days. Furthermore, investing in the stocks of large firms does not guarantee higher returns. While making investment decisions, other factors (other than firm size) could be considered, for instance a firm's performance in terms of profitability and its performance in the stock market.

For the government, it is evident from the results of this study that stock market anomalies at the Nairobi Stock Exchange may not be existent. For instance, we do not find the existence of reverse weekend effect. This implies that government's regulations are improving the efficiency of the Nairobi Stock Exchange. The government should therefore put in place more regulations so that the stock market becomes a fair playing ground with minimal cases of exploitation. The government is in a better position to monitor the performance of the stock market and hence ensure the economic stability of the country.

Investors mostly rely on financial analysts to provide sound information that would enable them make informed investment decisions. From this study, it would be misleading for financial analysts to advice investors that disposing stocks on Monday guarantees higher returns. Financial analysts should device other ways in which investors can make higher returns. They can for example help investors assess the present value of future dividends, provide knowledge of future income flows and advice them to hold their investments until the stock prices are stable.

Fund managers identify opportunities in which to invest in viable projects. The absence of reverse weekend effect as indicated in this study implies that the stock market is fairly efficient. If the reverse weekend effect existed, fund managers could benefit from arbitraging by selling stocks on Monday and selling them on other days when prices are low. In this case therefore, there are minimal cases of price differentiation and no maximization of portfolio especially on Mondays since returns are significantly negative.

For academicians, findings from this study should enable them focus on other areas of research on stock market anomalies that have not been investigated.

In general the findings from this study imply that Monday does not guarantee higher returns. Thus there no opportunities for investors to develop trading strategies to earn excess stock returns; earning higher than average profits will only be by chance. Therefore, the results of this study support the findings of Muragu (1997) that the Nairobi Stock Exchange is efficient.

4.4 Conclusion.

The objective of this study was to investigate whether the NSE exhibits the reverse weekend effect. Knowledge of this will enable investors know when to buy, hold or dispose securities. Numerous studies have been undertaken which bring out the existence of significant seasonality in stock returns. Findings in the developed markets have produced results which suggest that seasonality exists. A number of reasons have been attached to the occurrence of seasonality at stock markets. Such explanations include timing of dividends, investors' reactions to stock market information and institutional factors.

On the basis of the regression analysis done on the weekly returns Vs daily returns, we could not find evidence of the reverse weekend effect. Thus on the basis of the tests carried out, this study concluded that there is no reverse weekend effect at the Nairobi Stock Exchange. Our results contradict those of Brusa, Liu and Schulman (2005) and consistent with the study by Mokua (2003) on the lack of strong evidence on weekend effect (a market anomaly) on stock prices at the NSE.

4.5 Limitations and Recommendations

The study covered a period of five years from 1st January 2001 to 31st December 2005.It is possible that the shorter period could have affected the findings in this study. It is important to conduct a similar study that covers a longer period, say ten years or more that would be long enough to depict any patterns in the stock returns.

Some quoted companies at the NSE were not included in the sample due to incomplete data; others were not continuously listed throughout the study period. This reduction in the sample size may have affected the calculations in this study.

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Appendices

Appendix 1
List of Sampled Companies

AGRICULTURAL SECTOR

Kakuzi

Rea Vipingo

Sasini Tea & Coffee Ltd.

COMMERCIAL AND SERVICES SECTOR

CMC Holdings

Kenya Airways

Nation Media Group

Uchumi Supermarkets

FINANCE AND INVESTMENT SECTOR

Barclays Bank

CFC Bank

ICDC Investments Co. Ltd

Housing Finance Corporation of Kenya Ltd

Jubilee Insurance Co. Ltd

Kenya Commercial Bank

National Bank of Kenya

National Industrial Credit Ltd

Pan Africa Insurance Ltd.

Standard Chartered Bank Ltd

INDUSTRIAL AND ALLIED SECTOR

Athi River Mining

British American Tobacco

Bamburi Cement Ltd

BOC Kenya Ltd

Carbacid Investments Ltd

Crown Berger Kenya Ltd.

Diamond Trust Kenya Ltd.

East Africa Cables Ltd

East Africa Portland Ltd

Firestone (EA) Ltd

Kenya Oil Co. Ltd

Kenya Power & Lighting Co. Ltd

Total Kenya Ltd.

Unga Group Ltd

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

East African Breweries

Appendix 2

Large Companies	Small Companies
1. Bamburi	1. Athi River Mining
2. British American Tobacco	2. BOC
3. Barclays Bank of Kenya	3. Crown Berger Kenya Ltd
4. CFC	4. CMC
5. East Africa Breweries	5. Diamond Trust Kenya Ltd
6. East Africa Portland Ltd	6. East Africa Cables
7. Firestone	7. HFCK
8. Kenya Commercial Bank	8. ICDC
9. Kenya Airways	9. Jubilee
10. Kenya Oil Co. Ltd	10. Kakuzi
11. Kenya Power & Lighting Co. Ltd	11. NIC
12. National Bank of Kenya	12. Panafric
13. Standard Chartered Bank of Kenya	13. Rea Vipingo
14. Total	14. Sasini
15. Nation Media Group	15. Serena
	16. Uchumi
	17. Unga