JANUARY EFFECT ON STOCK RETURNS: EVIDENCE FROM NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

THIS RESEARCH PROJECT IS MY ORIGINAL WORK AND HAS NOT BEEN SUBMITTED TO ANY OTHER UNIVERSITY FOR ACADEMIC AWARD.

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..

DEDICATION

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ABSTRACT

The presence of the seasonal or January effect in stock returns has been reported in several developed and emerging stock markets. Over the last couple of decades, there has been a steadily growing interest in new and different forms of investment. The objective of this study was to investigate the existence of January effect on stock returns: evidence from Nairobi Securities Exchange. The target population for this study included 50 companies listed in the Nairobi Securities Exchange as at 31 December 2011. The study was carried out focusing on a period of ten years up to 2011. This study utilized secondary data. Data on the market share prices was obtained from the share prices as reported by N.S.E. Data collected was analyzed using simple linear regression and correlation analysis.

The study concluded that January effect has no significant relationship with the stock returns at NSE. In particular the study established that although other studies find that volatility tends to be higher in January, this study finds it to be period-specific and mostly in value-weighted return series, but not in equal-weighted return series. This is true for both the unconditional and conditional return volatility.

The study findings indicate that there is no significant relationship between the mean monthly January Effect on stock returns and the mean monthly stock returns of February through December. Comparisons between our economy and other economies and stock exchanges to find out the reasons why the fluctuations are either positive or negative need to be done. A research on the macro-economic and other factors to find out the other causes of these fluctuations should also be done to shed more light on why there are these fluctuations.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The presence of the seasonal or January effect in stock returns has been reported in several developed and emerging stock markets. Over the last couple of decades, there has been a steadily growing interest in new and different forms of investment. Stocks, bonds and other forms of equity have become common commodities for the typical private investor. A market previously reserved for the rich and affluent has become the interest of the masses (Ajayi et al., 2004).

In the context of financial markets and especially in the case of equity returns, several seasonal effects that create higher or lower returns depending on the time have been noted. They are called anomalies because they cannot be explained by traditional asset pricing models (Wong, Ho, and Dollery 2007). Examples of such patterns include: the January effect, the Day-of-the week effect and the Week-of-the-month effect. The appearance of such anomalies violates the weak form of market efficiency because prices of assets are not random but predictable based on some calendar effect. This allows investors to develop trading strategies and in return make abnormal profits on the basis of such anomalies. For example, investors may be willing to sell securities on Fridays and willing to buy on Mondays in order to take the advantage of these effects.

The presence of seasonality in stock returns violates the weak form of market efficiency because equity prices are no longer random and can be predicted based on past pattern (Wachtel, 1942). This facilitates market participants to devise trading strategies hence fetch abnormal profits on the basis of past pattern. One of the

explanations put forward for the existence of seasonality in stock returns is the tax-loss-selling hypothesis. In the USA, December is the tax month. Consequently, the financial houses sell shares whose values have fallen to book losses to reduce their taxes. As a result of this selling, stock prices decline. However, as soon as the December month ends, people start acquiring shares and therefore stock prices bounce back. This leads to higher returns in the beginning of the year, that is, January month. This is called 'January Effect'. In India, March is the tax month hence 'April Effect'.

1.1.1 Month of the Year Effect

Seasonality effects in stock markets refer to a diverse set of findings concerning calendar ''anomalies" Thaler (1987) in the market. Collectively they show that returns are consistently higher on some days of the week, or at some times of the month, or in some months of the year, than others. These patterns are not limited to US equity markets, but appear in futures, Treasury bills, debts and exchange rates, and in non-US countries (Pettengill, 2003). This effect implies a higher return in July as opposed to January.

Seasonality or calendar anomalies such as January effect and day of the week effect have remained a topic of interest for research for a long time in developed as well as developing countries. Wachtel (1942) reported seasonality in securities returns for the first time. Rozeff and Kinney (1976) documented the January effect in New York Exchange securities for the period 1904 to 1974. They found that average return for the month of January was higher than other months implying pattern in securities returns. Keim (1983), along with seasonality, also studied size effects in securities returns. He found that returns of small firms were significantly higher than those of large firms in January month and attributed this finding to tax-loss-selling and information hypothesis. A similar conclusion was found by Reinganum (1983),

however, he was of the view that the entire seasonality in securities returns cannot be explained by tax-loss-selling hypothesis. Gultekin and Gultekin (1983) examined the presence of securities market seasonality in sixteen industrial countries. Their evidence shows strong seasonality in the securities markets due to January returns, which are exceptionally large in fifteen out of sixteen countries. Brown et al. ((2009)) studied the Australian securities market seasonality and found the evidence of December-January and July-August seasonal effects, with the latter due to a June-July tax year.

Keim (1983) studied calendar effect in FTSE 100, Mid 250 and 350 indices for the period 1986 and 1992. He found calendar effect in FTSE 100. Fountas and Segredakis (2002) studied 18 markets and reported seasonal patterns in returns. The reasons for the January effect in securities returns in most of the developed countries such as US and UK attributed to the tax-loss selling hypothesis, settlement procedures, and insider trading information.

Another effect as illustrated by Lakonshok et al. (1987) is window dressing, which is related to institutional trading. To avoid reporting to many losers in their portfolios at the end of year, institutional investors tend to sell securities in Decembers. They buy these securities after the reporting date in January to hold their desired portfolio structure again.

One of the implicit assumptions made in past seasonality research is that seasonality effects are relatively stable through time. The labels on many of these findings emphasize this stability: The Weekend Effect, The Monday Effect and The January Effect. Researchers have acknowledged that seasonality may manifest differently for different markets, and have found relationships between market variations in these

effects. For instance, Agrawal and Tandon (1994) found seven markets in their sample exhibited lowest returns on Mondays, as typically found in US data, whereas eight markets had lowest returns on Tuesdays.

1.1.2 Stock Returns

If a stock market is operationally efficient there is little or no friction in the trading process. Information on prices and volumes of past transactions is widely available and price sensitive information is both timely and accurate; thus information dissemination is fast and wide. Liquidity, is such that it enables market participants to buy or sell quickly at a price close to the prior (last traded) price. Also, there is price continuity, such that prices do not change much from one transaction to another unless significant new information becomes available.

According to the Efficient Market Hypothesis (EMH), an operationally efficient stock market is expected to be externally and informational efficient; thus "security prices at any point in time are an unbiased reflection of all the available information" on the security's expected future cash flows and the risk involved in owning such a security (Reilly and Brown 2003: 57). Such a market provides accurate signals for resource allocation as market prices represent each security's intrinsic worth. Market prices can at times deviate from the securities' true value, but these deviations are completely random and uncorrelated.

Price changes are only expected to result from the arrival of new information. Given that there is no reason to expect new information to be non-random, period-to-period price changes are expected to be random and independent. In other words, they must be un-forecastable if they are properly anticipated, i.e. if they fully incorporate the expectations and information of all market participants. Many studies document

patterns of seasonality in stock returns. Seasonality can be found in intraday returns, weekly returns, monthly returns and annual returns. Since most seasonal do not exceed the average bid-ask spreads of stocks, Fama (1991) alleges that this phenomenon may be caused by seasonal in the probabilities that measured prices are at ask or bid, due to seasonal in investors' trading patterns.

1.1.3 January Effect on Stock Returns

January returns of investments are significantly higher than any other month during the year. This return seasonality has been widely documented for common stocks and closed-end funds both in the USA and in other countries. For example, Ritter (1988) and Haugen & Jorion (1996) document this return seasonality in US stocks, Athanassakos (1992) shows this seasonality in Canadian stocks, and Brauer and Chang (1990) document that closed-end fund prices increase in January.

The January effect is a calendar-related market anomaly in the financial market where financial security prices increase in the month of January. This creates an opportunity for investors to buy stock for lower prices before January and sell them after their value increases. Therefore, the main characteristics of the January Effect are an increase in buying securities before the end of the year for a lower price, and selling them in January to generate profit from the price differences. The recurrent nature of this anomaly suggests that the market is not efficient, as market efficiency would suggest that this effect should disappear (Siegel & Jeremy (1994).

The January Effect was first observed in, or before, 1942 by investment banker Sidney B. Wachtel. It is the observed phenomenon that since 1925, small stocks have outperformed the broader market in the month of January, with most of the disparity occurring before the middle of the month (Jorion, 1996).

The most common theory explaining this phenomenon is that individual investors, who are income tax-sensitive and who disproportionately hold small stocks, sell stocks for tax reasons at year end (such as to claim a capital loss) and reinvest after the first of the year. Another cause is the payment of year-end bonuses in January. Some of this bonus money is used to purchase stocks, driving up prices. The January effect does not always materialize; for example, small stocks underperformed large stocks in January 1982, 1987, 1989 and 1990.

When looking at liquidity, empirical studies used different proxies. In the Canadian market Elfakhani and Lung (2003) noted that both the number of transactions and the trading volume increased, whereas bid-ask spreads decreased following stock split announcements Gupta and Kumar (2007) found that there was no announcement effect associated with stock split in India. Baker and Gallagher (1980), Lakonishok and Lev (1987), and Lamoureux and Poon (1987) argued that the executives used the split to protect their interests from takeover threats. Larger investor base made it difficult for potential acquirers to control the company's stake.

1.2 Statement of the Problem

Value stocks earn higher expected returns than growth stocks, this appears to be a troublesome anomaly for rational expectations, because according to conventional wisdom, growth options hinge upon future economic conditions and must be riskier than assets in place. In a widely used corporate finance textbook, Grinblatt and Titman (2001, p. 392) contend that "Growth opportunities are usually the source of high betas, because growth options tend to be most valuable in good times and have implicit leverage, which tends to increase beta, they contain a great deal of systematic risk." Imad A. Moosa, (2007) also predicts that growth options are always riskier than assets in place, as these options are "leveraged" on existing assets. Growth stocks,

which derive market values more from growth options, must therefore be riskier than value stocks, which derive market values more from assets in place, yet historically growth stocks earn lower average returns than value stocks.

Calendar effect connotes the changes in security prices in securities market following certain trends based on seasonal effects. Such trends or consistent patterns occur at a regular interval or at a specific time in a calendar year. Presence of such anomalies in any securities market is the biggest threat to the concept of market efficiency as these anomalies may enable securities market participants beat the market by observing these patterns. This notion again violates the basic assumption of efficient market hypothesis (EMH) that no one can beat the market and earn the profit in excess of market. Daily securities returns are also different from each other at different points of time during a month.

Several international studies that examined stock and fund markets outside of continental America (Jaffe & Westerfield, 1985) have confirmed seasonality in the United Kingdom, Japan, Canada and Australia. According to Claessons (1987) and Graah-Hagelbäck & Kroon (2005) the studies performed in Sweden clearly verify the findings internationally through the confirmations of both the January effect and the July effect. Worth noting is that the mostly unknown and unexamined summer effect has been found in the Stockholm Stock Exchange (Graah-Hagelbäck & Kroon, 2005). More recently, Basher and Sadorsky (2006) have also found divergences between day-of-the-week effects in stock markets in emerging economies. In their analysis of the Shanghai and Shenzhen markets, Gao and Kling (2005, p. 75) claimed that ‘‘the year-end effect was strong in 1991 – but disappeared later”. Most studies on stock market seasonality have relied on return differences across calendar times.

Locally, Atiti, (2004) carried an empirical analysis of momentum in prices at the Nairobi Stock Exchanges. Onyuma (2009) examined the NSE 20 Index of Kenyan Stock Market and he found that Monday and Friday present the lowest negative and highest positive returns respectively. To the researchers' knowledge, no study has been done on seasonal effects covering three different seasons. Therefore, the researcher investigated the January effects on the stock markets trend anomalies for companies listed in NSE. Hence giving answer to the January effect on stock returns at the Nairobi Securities Exchange.

1.3 Objective of the Study

The objectives of this study were to investigate the existence of January effect on stock returns: evidence from Nairobi Securities Exchange.

1.3.1 Specific objectives

i. To find out the effect of Time-of-the-Month of January Effect on stock returns.

ii. To establish the effect of Tax Loss selling on stock returns.

1.4 Value of the Study

The study is of value to the following:

Individual and potential investors

Individual and potential investors wishing to invest in stock exchange will find the report useful in giving guidance on investment hence investing knowledgeably. Investors will also be in a position to know exactly at what time of the month of January they can do their investments so as to make profit. This study would be beneficial to shareholders and to potential investors while investing in shares at the Nairobi Securities Exchange so that they can make correct decision at the right time.

Ministry of finance

Ministry of finance could use the findings on this study in reviewing the policies governing operation of the stock exchange. The government through the Ministry of Finance can use the findings of the study in sensitizing its citizens on how to invest wisely.

The stockbrokers

The stockbrokers will find the report valuable as it will assist them strengthen their internal governance that will install investor confidence. Stockbrokers can also use the findings of the study when educating potential investors on profitable time of the month of January to make investments at.

Academicians and Researchers

Academicians and Researchers will find the study useful especially when researching further on related areas. They will also use the findings to improve on the gaps in the study. Academicians will use the findings as an educational reference especially to do with areas of January effects on stock returns. In addition, other academic researchers may need the study findings to stimulate further research in this area of seasonal effects and as such form a basis of good background for further researches.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical review, empirical review, comparison in the local context and the summary.

2.2 Theoretical Review

2.2.1 Disclosure theory

Disclosure theory differentiates between mandatory and voluntary approaches. Mandatory reporting, especially on a more standardized basis, is justified to bridge the deficit of relevant information to users for comparative analysis purposes. It is also less burdensome in comparison to other forms of regulation. It can also act as a powerful deterrent against agency conflicts and also provides assurance to stakeholders concerning the company's social, safety, and environmental impact. This may need to be weighed against possible prohibitive cost burden to preparers.

Voluntary disclosure may be more cost sensitive, but it appears to suffer from biasness associated with the problems of selective dissemination and the adoption of creative accounting in the earnings report. Empirical findings from the 1970s and the 1990s consistently show that annual reports are of no material use or interest to many shareholders. Such reports continued to suffer from the absence of a more viable conceptual framework and the lack of response to the needs of newly emerging users seeking more information on the social, environmental, and safety impact of businesses (Villiers, 2007).

Enhanced transparency through mandatory disclosure would ergo help to reduce conflicts of interest, deter the abusive use of management power, prevent fraud,

protect investors, promote informed decision-making, accountability and legitimize corporate actions on social and other related issues (Benston *et al.*, 2006; Villiers, 2007).

Although Corporate Social Responsibility (CSR) reporting is immensely helpful to corporate stakeholders, it is confronted with various conceptual and procedural issues. This probably explains why the European Union (EU) is yet to make it a compulsory component of financial reporting and has left this to member states to respond in their own terms. On the other hand, the EU recognizes the Basel II Accord for operational disclosure and minimum capital support for securitizations when it issued the Capital Adequacy Directive applicable to the financial services sector. This is broadly similar to OFR type reporting but incorporate more details on financial risks.

2.2.2 Signaling Theory

Ross (2008) argues that trade-off models adopted by traditional theorists do not offer a satisfactory solution to financial structure choice. He posits that it's difficult to specify exactly what the costs of bankruptcy are, particularly when it's in the interest of all parties to simply reorganize the firm. Ross (2008) also contends that Modigliani and Miller (MM'S) theory implied that the market know the random return stream of the firm and value this stream to set the value of the firm. He posits that what is valued in the market place is the perceived stream of the firm. Borrowing from MM's argument he stated that changes in financial structure can alter the market perception. By changing the financial structure, the firm changes its perceived risk class even though the actual risk class remains unchanged.

Ross concluded that choice of capital structure signals information to the market and that the signals will be validated in a competitive market. The implication of this

theory is that managers decide on the capital structure of their company in a way that a positive signal will be sent to the market so as to increase the firms value. This is only achieved if management issue debt securities in a way that the market will not perceive the issue as too large to invite possibilities of financial distress as this may pose a negative signal.

2.2.3 Efficient Market Hypothesis (EMH)

The efficient market hypothesis suggests that if a market is found to be efficient neither technical analysis nor fundamental analysis is worthwhile. A full discussion of the generally positive market reaction to an open-market repurchase would include the efficient markets theory. This theory can assist in explaining the indications of more than one underlying theory, specifically, the asymmetrical information hypothesis and the signaling hypothesis. In the case of an open-market buyback, an announcement can be viewed as a positive signal because managers have access to relevant and favorable information about the firm's value that is not known to other parties (Sander & Carpenter, 2003). In an efficient market, including the semi-strong form of market efficiency, stock prices fully reflect all available information. In the situation of a firm announcing a share repurchase, an efficient market would suggest that stock prices react efficiently and immediately in an unbiased manner to the new information conveyed in the announcement. In an efficient market, the new price would reflect the value of the new information and a wealth transfer would not occur between long-term stock holders and those willing to immediately sell shares. In an efficient market, the stock would not be over or undervalued after an announcement to repurchase shares.

Lorie and Hamilton (1973: 72) qualify this by adding that the analysis will only be worthwhile "if there is sound originality in the process of analysis." Academicians

have, over the years, done much to prove that stock prices move in a random and unpredictable way; hence there is no point to knowledgeable analysis and portfolio management. Professionals on the other hand know, purportedly from experience, that their expertise is by no means made obsolete by the fact that markets can be proved to be efficient. Since they have never had to decide on what to buy or sell, or had to explain an investment loss to an irate client, academicians – and their plethora of learned journals and seminars – are considered inherently and eminently 'unqualified to comment' on real world matters (Crowell, 1997). Investment analysts are normally divided into technical analysts and fundamental analysts, based on their tools of investment analysis. However, most of the investors do not use either of the two exclusively. For example, speculators may put more emphasis on technical analysis, but they are at the same time mindful of the economic environment and the fundamentals surrounding the shares they are speculating on. On the other hand, long-term investors are more concerned with the macroeconomic picture, industrial (sectoral) prospects and company fundamentals, but as market timing is important technical analysis plays an important role in timing their purchases and sales (Lampen, 2001).

2.3 Empirical Review

2.3.1 The Turn-of-the-Month (TOM) Effect

Different researchers have used different event windows to study Turn-of-the-month-effect. Ariel (1987) while evaluating turn-of-the-month effect, defined his event window as (-1, +4) i.e. last working day of previous month and first four days of upcoming month. He proved the existence of high returns for this event window for value weighted CRSP index for the period of 1963-1981.

Evidence of turn-of-the-month effect for USA, Canada, Switzerland, West Germany, UK and Australia has also been found, however, no such effect has been reported for Japan, Hong Kong, Italy, and France (Cadsby and Ratner, 1992). Existence of turn-of-month effect has also been proved for stock markets of eighteen countries in 1970s (Agrawal and Tandon, 1994).

Wong, Ho, Dollery (2007) investigated the monthly-effect in Malaysian securities Market for period 1994-2006 by partitioning data into 3 sub-periods. Their results revealed the existence of monthly effect in different periods but not on the whole, such as February effect was there in pre-crisis period and January effect in post-crisis period. Bahadur and Joshi (2005) proved persistent Month of the year anomaly for Nepalese Securities Exchange for period 1995-2004. Chia' et al. (2006) also conducted a study on Malaysian Securities Exchange and confirmed no January effect or any other monthly effect exists.

Thomas (2002) also found a significant Month-of-the-year effect in Swedish Securities market for period 1987-1996. Agathee (2008) showed lowest average returns in March and highest average returns in month of June for Mauritian Securities Exchange. Gao and Kling (2005) reported strong year end effect in 1991 which disappeared later. In Shanghai and Shenzhen, with February as the year ends, high returns can be observed in March and April.

The very first evidence found for the existence of January effect is that of Wachtel (1942). He studied US securities market and found that returns in month of January are relatively higher. After that Rozeff and Kinney (1976) analyzed returns of securities listed on New York Securities Exchange for the period 1904 to 1974 and found that returns in first 15 days of January are higher than rest of year.

Chia-Shang, Tung Liu, Rathinasamy (2004) using Markov-switching model analyzed the monthly securities returns for 1926-1992 but did not find any significant January effect. However, for low capitalization small firms, very strong January effect existed. Grinblatt, M. and Titman, S. (2001) Confirmed higher return in January for the securities having accrued capital losses in last year. Imad A. Moosa (2007) found that January effect is in fact low price effect and January returns for low price shares are lower as compared to high priced shares, after transaction cost being considered. Keim (1983) checked out the relationship of size effect and seasonality and found that around half of the difference between rates of returns (for large and small firms) takes place in month of January. Also he established that Small firm returns in January are significantly higher than the large firm returns.

A recent study conducted by Imad .A. Moosa (2007) by using monthly average returns or U.S. Securities for period of 1970 to 2005 revealed that a significant January effect existed except for the period 1990-2005 where negative July effect dominated. While examining Tokyo Securities Exchange, Japan for January and size effects, Kato and Schallheim, (1985) found that both of these effects are present there and are just similar to the U.S. Securities Market. Berges'et al. (1984) found the presence of January effect for Canadian Securities over the period 1951-1980. Balaban (1995) investigated month-of-the-year effect in Turkey. By employing percentage returns of Istanbul Securities Exchange composite index for 1988-1993, the study reported significantly high returns for three months: January, June and September. However, returns of January are almost double than the compounded returns of June and September.

Mika Rossi (2007) examined calendar anomalies in securities returns for South America, Argentina, Brazil, Chile and Mexico for 1997 - 2006. By dividing data into

two sub periods and then analyzing it, it was found that Returns for the Month of January are higher in Argentina only. Nassir and Mohammad (1987) presented evidence from Malaysian securities market where the average January returns were found significantly positive and higher as compared to other months during the period 1970-1986. Another study conducted by Ho (1999), revealed significantly higher returns for month of January for six out of eight emerging Asian Pacific securities markets from 1975 to November 1987.

While Examining Amman Securities Exchange, Jordon, Maghayereh (2003) found no evidence of monthly seasonality as well as January effect. Pandey (2002) also found the existence of January effect for India with January not being the first-month of tax year. One of the salient facts in finance is the documented seasonality in stock returns. Specifically, recent losers tend to experience fortune reversals in January (hence, the January effect), whereas recent winners tend to continue and expand their fortunes in December (hence, the December effect).

2.3.2 Tax Loss Selling

This provides the basis for January effect as it states that in December being the end of tax year; investors tend to sell out the securities held as they want to realize capital losses. This helps them in reducing tax paid by them on their gains. As a result of this downward trend in market, stock prices go down. As the new tax year starts in January, investors again start to purchase the securities and this upward trend pushes the stock prices up (Reinganum; 1983). Evidence for the existence of January effect as a result of tax loss selling activities at tax year end has also been provided by Starks'et al. (2004) in terms of Municipal Bond Closed End Fund. They explained that there is a positive correlation between abnormal returns of municipal Bond Closed End Fund and year end trading volume whereas the correlation between year

end trading activities and current and previous year returns is negative. Study also found the significant selling pressure in December and buying pressure in January. Investors sell out stocks in December at capital losses and re-invest their money in tax advantaged fund in month of January to balance their losses in December.

The repurchase rate for buying the stocks back depends upon the extent of loss, firm size and the time of sale i.e. how late sale takes place in a year (Grinblatt'et al, 2004). Confirmation of January effect as a result of Tax loss Hypothesis has also been provided by Poterba and Weisbenner (2001) also supported tax loss hypothesis by confirming November effect with October 31st being end of tax year for Mutual Funds after U.S tax reform act of 1986. However, Brown' et al. (1983) denied this concept as his study found seasonality in January-December and July-August with June 30th as the tax year end. As there is no explanation for August and December peaks in returns, his study rejected tax loss hypothesis.

2.4 January Effect on Stock Returns

Alagidede (2006) rejects the month-of-the-year effect in Kenya, Morocco and Tunisia, but he finds higher positive returns on Friday in Zimbabwe. Some other studies present the same conclusions. In examining the effect in foreign securities markets, Marrett and Worthington (2009) extended the weekend effect to study a general holiday effect in Australia. They found that from 1996 to 2006 the Australian market exhibits a positive pre-holiday effect most pronounced in small securities.

Kamaly and Tooma (2009) examined securities markets in 12 Arab countries over the period 2002-2005. They found that a significant daily returns effect associated with the first and last days of the trading week (different Arab countries have different trading weeks, with most closed on Fridays) exists in the four most developed (Egypt,

Bahrain, Kuwait, and UAE) markets. Basher and Sadorsky (2004) examined securities returns in 21 emerging countries on four continents over the period 1992-2003. Among these countries, Monday mean returns are generally negative, but the Monday effect is significant in only four countries: Turkey, Thailand, Taiwan, and Malaysia. These effects persist even after adjusting for market risk. Generally speaking, post-2003 studies do not widely report a weekend effect among foreign markets.

Finally, studies seeking to document the month of the year effect in US securities prices have noted and explored the shift of January returns to positive and a movement of effects to other days. Galai *et al.* (2008) argue that most of the traditional Monday effect is driven by extreme values in the data. When they examined S&P 500 index returns controlling for outliers, the Monday effect turns positive and significant. Doyle and Chen (2009) examined 11 major securities markets over the period 1993-2007. They reported a "wandering weekday" effect in that, the day of the week showing systematically high or low returns is very sensitive to the choice of sub-period. Empirical studies, however, show that only a small proportion of the January effect can be attributed to earnings announcements.

2.5 Summary

In some cases there has also been confirmation of a July effect as with Al-Saad and Moosa (2005). This effect implies a higher return in July as opposed to January. Similar studies have taken place in Sweden with the Swedish stock exchange. Amongst others we find Claessons (1987) and GraahHagelbäck and Kroon (2005).

The studies performed in Sweden clearly verify the findings internationally through the confirmations of both the January effect and the July effect. Worth noting is that

the mostly unknown and unexamined summer effect has been found in the Stockholm stock exchange (Graah-Hagelbäck & Kroon, 2005).

Moreover, pre-2003 studies almost uniformly reject the utility of developing a trading rule based on the January effect. While the effects are statistically significant, their practical size is small enough that with even minimal transaction costs and taxes, profit opportunities vanish. One exception is trading within certain tax-advantaged retirement accounts, which in some cases can be done at essentially zero cost for the investor.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section describes the methodology that was used: the research design, the target population, data collection and data analysis procedure, in conducting the study. The study revolved around the January effect at the Nairobi Securities Exchange.

3.2 Research Design

The study adopted a descriptive survey design. Such a research design was used to obtain information concerning the current state to describe what exists in respect to variables or conditions in a situation. It enabled the researcher to obtain information. It is also useful in identifying variables and hypothetical constructs and it was used to test theories. The approach involved gathering data that describes events and then organizes, tabulates, depicts and describes data. It uses description as a tool to organize data in patterns that emerge during analysis. This method is considered appropriate because the study involved interacting with the population of interest for them to describe the January effects on the stock markets trend anomalies for companies listed in Nairobi Securities Exchange.

3.3 Target Population

The target population for this study was the 50 companies (See appendix 1) listed in the Nairobi Securities Exchange as at 31 December 2011. The study was carried out for ten years up to 2011.

3.4 Data Collection

This study was facilitated by the use of secondary data. Dividend data was extracted from published reports of listed companies. This information was obtained at the

N.S.E library and from the companies' libraries. Data on the market share prices was obtained from the share prices as reported by N.S.E.

3.5 Data Analysis

Data collected was analyzed using simple linear regression and correlation analysis. The significance of the effects of January effect was tested by the regression equation of the form given below:

Mean returns for each month of each year was calculated from these logarithmic returns. In order to find out this effect, regression equation with dummy variables was used as was used by Bahadur and Joshi (2005), and Pandey (2002).

$$Rt= \beta0+\beta1d2t+\beta2d3t+\beta3d4t+\beta4d5t+\beta5d6t+\beta6d7t+\beta7d8t+\beta8d9t+\beta9d10t+\beta10d11t+\beta11d12t+\varepsilon t$$

Where:

Rt = Mean return of stock index for the month t

dit = Dummy variable for all the months except the month i

βi = Coefficients for the mean returns of months.

εt = Error term

In this equation, month of the year dummy variables was used to test seasonality. Values of one and Zero were assigned to these dummy variables. The variable, d_{it} was assigned value of "one" if return for i month was there. A value of "Zero" was assigned for returns of rest of the months. In this model:

d2t = dummy variable for February,

d3t = dummy variable for March,

d4t = dummy variable for April,

d5t = dummy variable for May,

d6t = dummy variable for June,

d7t = dummy variable for July,

d8t = dummy variable for August,

d9t = dummy variable for September,

d10t = dummy variable for October,

d11t = dummy variable for November,

d12t = dummy variable for December.

Month of January was not included here because it was our bench mark month. β_0 in this equation denotes the mean returns for month of January. Coefficients β_1 to β_{11} denote the difference of mean returns of February through December with the mean returns of January. These coefficients are a key to measure incremental effect of a particular month with respect to its bench mark month.

Significance of the model

This model is significant for testing January effect on stock returns. For analyzing this effect guidelines of Kohers and Patel (1999) and Bahadur and Joshi (2005) are followed. 28th trading day of last month to 7th trading day of next month were considered as first third of the month.

CHAPTER FOUR

ANALYSIS OF THE FINDINGS

4.1 Introduction

This study sets to find out the January effect on stock returns of companies listed in the Nairobi Securities Exchange. The study was guided by the following objectives; to find out the effect of Time-of-the-Month of January Effect on stock returns and to establish the effect of Tax Loss selling on stock returns. The principal data for this study came from the secondary materials for monthly stock files. For each year from 2002 to 2011, the researcher obtained share, monthly volumes, and monthly returns for a sample of 50 companies quoted at NSE (most of which were established in the early- to mid-2002). NSE 20 index was used as proxy for the market. To calculate excess market return, the risk free rate of return was estimated from The Government Treasury Bill rate which is obtained from the Central Bank of Kenya.

The main data variable for this study was the NSE index. The NSE index was used to measure the adjustment of returns in the NSE from each trading day. An increase in the NSE indicated that the NSE performance is on an upward trend with share prices of most shares increasing NSE returns, principally the NSE 20 share index and its derivatives (measures of volatility) were analyzed to capture trends of January effect in the market for the study period. The percentage increase or decrease in the NSE index before and after January was calculated and a comparison done with the rest of the months.

4.2 Reliability Analysis

This study carried out a reliability analysis and from the findings Cronbach's alpha was 0.991, which means that 99.1% of the NSE data was reliable for analysis.

Table 4.1 Reliability Statistics

Cronbach's Alpha	N of Items
0.991	12

4.3 Descriptive Statistics of the Average Monthly Ratios

The table below reports descriptive statistics of central tendency for the monthly average returns for the 50 companies for the period 2002-2011

Table 4.2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
JAN	545	.00	477.19	63.1655	75.66295
FEB	545	.00	494.40	62.6591	75.56710
MARCH	545	.00	484.30	60.7541	74.00306
APRIL	545	.00	449.20	60.2077	72.44938
MAY	544	.00	431.05	62.2411	73.61396
JUNE	545	.00	429.67	63.0419	75.07997
JULY	545	.00	448.00	63.4436	74.34178
AUGUST	545	.00	489.23	63.8411	75.72319
SEPTEMBER	545	.00	510.14	63.5184	74.72312
OCTOBER	545	.00	482.86	63.7116	76.50669
NOVEMBER	545	.00	532.96	66.7147	81.82800
DECEMBER	545	.00	437.90	63.6324	75.35633
Valid N (list wise)	544				

From the study findings it can be noted that the mean of debt equity ratio was highest in the month of November with a mean of 66.7147 and a standard deviation of 81.82800 this was followed by August with a mean 63.8411 and a standard deviation of 75.72319.

On the average all the months tend to exhibit a tendency of all the means and standard deviations being more or less equal thereby implying that the corporate tax rate was constant. It can be noted that the corporate tax rate from 2002 to 2011 was stable during this period although the mean fluctuated increasing and decreasing in an alternating pattern over the years, effect of Tax Loss selling on stock returns was

therefore insignificant. A comparison of the means using the T test reveals that the differences in the means were insignificant for the period 2002 to 2011 as illustrated below;

Table 4.3 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
JAN	545	63.1655	75.66295	3.24104
FEB	545	62.6591	75.56710	3.23694
MARCH	545	60.7541	74.00306	3.16994
APRIL	545	60.2077	72.44938	3.10339
MAY	544	62.2411	73.61396	3.15617
JUNE	545	63.0419	75.07997	3.21607
JULY	545	63.4436	74.34178	3.18445
AUGUST	545	63.8411	75.72319	3.24362
SEPTEMBER	545	63.5184	74.72312	3.20079
OCTOBER	545	63.7116	76.50669	3.27719
NOVEMBER	545	66.7147	81.82800	3.50513
DECEMBER	545	63.6324	75.35633	3.22791

The table above reveals that there is little difference between the means and standard deviations and again except for the month of November all other months have a more or less equal standard error of the mean at 3.5053 whereas the rest of the months have a standard error of the mean osciliating around 3.2 thereby indicating that the mean monthly averages were similar from month to month.

4.4 Regression Analysis

The model summary table below reports the strength of the relationship between the independent and the dependent variable.

Table 4.4 ANOVA Model Summary

ANOVA(b)						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	3074741.191	11	279521.926	3981.197	.000(a)
	Residual	37351.995	532	70.211		
	Total	3112093.185	543			
a Predictors: (Constant), December, February, August, November, June, September, April, October, July, March, May						
b Dependent Variable: January						

From the table 4.4 above, the significance value of the F statistic 3981.197 implies that the variation explained by the model is not due to chance. This signals the models' efficiency in estimating the relationship between the dependent and the independent variables.

The residual sum of squares is nearly 10% of that of the total sum of squares indicates that there are no major unexplained sources of variation. The level of significance therefore, indicates that that the null hypothesis is true. That is to say there is no significant difference between the mean stock returns of January with those of months y1, y2…….y12

4.5 Coefficient of Determination

Table 4.5 R square

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.994(a)	.988	.988	8.37917
A Predictors: (Constant), December, February, August, November, June, September, April, October, July, March, May				

The table 4.5 above shows that R, the correlation coefficients has a value of .994 this signifies a linear positive correlation between the observed and model-predicted values of the dependent variable. The coefficient of determination R square, the coefficient of determination yielded a value of .988. This implies that 98.8% of the variation in January is explained by the model or that the model is 98.8 % efficient in estimating the relationship between January and the rest of the months.

4.6 Analysis of Variance (ANOVA)

Table 4.6 (ANOVA) Coefficients

Coefficients(a)						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**	**B**	**Std. Error**
1	**(Constant)**	.938	.487		1.925	.055
	February	1.191	.029	1.189	41.494	.000
	March	-.293	.046	-.287	-6.374	.000
	April	.121	.067	.116	1.798	.073
	May	-.032	.066	-.031	-.484	.629
	June	.032	.044	.032	.743	.458
	July	.001	.040	.001	.036	.971
	August	-.016	.022	-.016	-.737	.461
	September	.018	.031	.018	.590	.555
	October	-.035	.036	-.035	-.961	.337
	November	.001	.020	.001	.031	.975
	December	.001	.012	.001	.055	.956
Dependent Variable: January						

This suggests that amongst all the other variables only February is not related to January. In summation the linear model for estimating the effect stock returns and effect of Tax Loss selling on stock returns variables can be expressed as;

$X=0.938+ D2+D3+D3+D4+D5+D6+D7+D8+D9+D10+D11+D12 + \varepsilon_{it}$

Thus $X=0.938+ 1.191+-0.293+0.121+-0.032+0.032+0.001+-0.016+0.018+-0.035 +0.001+0.001 + \varepsilon_{it} = 0.704$

4.7 Test of Hypothesis

This study was guided by the following hypotheses:

1. *Ho*: there is no significant relationship between the mean monthly January Effect on stock returns and the mean monthly stock returns of February to December
2. *H1*: there is a significant relationship between January Effect on stock returns and the mean monthly stock returns of February to December

From the study findings there is significant relationship between the mean monthly January Effect on stock returns and the mean monthly stock returns of February to December. The null hypothesis is therefore rejected and the alternative accepted as type II error.

From this study findings there is a significant relationship between the mean stock returns of January with those of months and y1, y2…….y12

4.8 Correlation Analysis

This study sets to find out the relationship between January and the other months. A pared variable samples correlations were done and below are the findings.

Table 4.7 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	JAN & DECEMBER	545	.749	.000
Pair 2	JAN & FEB	545	.993	.000
Pair 3	JAN & MARCH	545	.974	.000
Pair 4	JAN & APRIL	545	.959	.000
Pair 5	JAN & MAY	544	.947	.000
Pair 6	JAN & JUNE	545	.926	.000
Pair 7	JAN & JULY	545	.904	.000
Pair 8	JAN & AUGUST	545	.860	.000
Pair 9	JAN & SEPTEMBER	545	.864	.000
Pair 10	JAN & OCTOBER	545	.840	.000

There is a strong positive correlation between January and the rest of the months, while the strongest correlation was between January and February at 0.993 the least were between January and December with a correlation of 0.749. The correlations for paired variables indicate there are no significant difference between January and the other months.

A Correlations Matrix was generated to display the inter item correlations between the months of the year (see appendix II).

From the study findings the Correlations matrix generally shows a strong correlation between the remainder 11 months of the year. The months with the strongest correlations are between October and November (r = 0.909) while Between April and May at (r = 0.949). From the correlations matrix it can be concluded that there is no January effect on stock.

4.9 Summary and Interpretation of the Findings

This study sets to find out the January effect on stock returns of companies listed in the Nairobi Securities Exchange. The study was guided by the following objectives; to find out the effect of Time-of-the-Month of January Effect on stock returns and to establish the effect of Tax Loss selling on stock returns.

In order to test the January effect on stock returns of the companies this, study used secondary data from the NSE. The study findings show that there is no significant relationship between the mean monthly January Effect on stock returns. This is contrary to the studies that show that there would be seasonality in stock returns if the average returns were not the same in all periods.

The month-of-the-year effect would be present when returns in some months are higher than other months. In the USA and some other countries, the year-end month (December) is the tax month. Based on this fact, a number of empirical studies have found the 'year-end' effect and the 'January effect' in stock returns consistent with the 'tax-loss selling' hypothesis. It is argued that investors, towards the end of the year, sell shares whose values have declined to book losses in order to reduce their taxes. This lowers stock returns by putting a downward pressure on the stock prices. As soon as the tax month ends, investors start buying shares and stock prices bounce back. This causes higher returns in the beginning of the year, that is, in the month of January. The 'tax loss selling' is ineffective in Kenya and as such it has no effect in the stock prices thus contrary to the 'tax loss selling' hypothesis.

In the US market, a number of studies have found the seasonal or the year-end effect in stock. Wachtel (1942) was the first to point out the seasonal effect in the US markets. Rozeff and Kinney (1976) found that stock returns in January were

statistically larger than in other months. Locally, these study findings are in agreement with the study by Alagidede (2006) who in a study of Kenya, Morocco and Tunisia, rejects the month-of-the-year effect in Kenya. These findings are centrally to the findings on the issue of the seasonality of stock returns has been investigated in many other developed countries. The existence of seasonal effect has been found in Australia (Officer, 1975; Brown, Keim, Kleidon and Marsh, 1983), the UK (Lewis, 1989), Canada (Berges, McConnell, and Schlarbaum, 1984; Tinic, Barone-Adesi and West, 1990) and Japan (Aggarwal, Rao and Hiraki, 1990). Boudreaux (1995) reported the presence of the month-end effect in markets in Denmark, Germany and Norway. In a study of 17 industrial countries with different tax laws, Gultekin and Gultekin (1983) confirmed the January effect. Jaffe and Westerfield (1989) found a weak monthly effect in stock returns of many countries.

This study findings show that on the average all the months tend to exhibit a tendency of all the means and standard deviations being more or less equal thereby implying that the corporate tax rate was constant. It can be noted the corporate tax rate from 2002 to 2011 was stable during this period although the mean fluctuated increasing and decreasing in an alternating pattern over the year. This study finding is supported by JPW (1987) who examined the issue by using the monthly price series of the Cowles Commission Industrial Index.

The index price is computed by value-weighting the average of the monthly high and low price of each stock in the index.' JPW detect a January seasonal in the monthly returns of the index for the periods before and after the US War Revenue Act.2 Consequently, they conclude that the simultaneous occurrence of the January effect and the turn-of-the-tax-year is a mere coincidence. From the study findings there is no

significant relationship between the mean monthly January Effect on stock returns and the mean monthly stock returns of February to December.

From the results, it is evident that all the months except November have a significant relation with January. The month of November in particular has strong average return and it is worth noting that December has been better than January, which contradicts two popular myths: The December Sell-off, and the January Effect although there are lots of exceptions to the pattern. There have been both bad and good months, and of course the biggest trend of all is that the market goes up through time. So the experience here is that the January Effect on stock returns as well as long-term buy does not affect the NSE.

The test of correlation between the month January and the period of 11 months under consideration and volatility of the market shows that there was little association between these two variables. The correlation coefficient between the year of study and relative variation in January is weak. The results are also not significant for the test of significance that volatility depends on the month being studied.

The correlations for paired variables indicate there are no significant difference between January and the other months. A correlations Matrix was generated to display the inter item correlations between the months of the year generally shows a strong correlation between the remainder 11 months of the year. The months with the strongest correlations are between October and November (r= 0.909) while Between April and May is at (r= 0.949). From the correlations matrix it can be concluded that there is no January effect on stock since all other 11 months exhibit more or less similar mean returns.

The study provides a study of the January effect by examining the monthly mean stock indices, an analysis of variances (ANOVA) test was used to find if there were significant differences between the independent variables. A parametric test, 1-way ANOVA, was employed because the data conforms to an ordinal scale and because of the sample size. The test was used with a significant level of 1%, so the null hypothesis is rejected if the result of the test is less than 1%.

The hypotheses in this study are as follows:

1. Ho: There is no significant relationship between the mean monthly January Effect on stock returns and the mean monthly stock returns of February to December.
2. H1: There is a significant relationship between January Effect on stock returns and the mean monthly stock returns of February to December.

The results of the analysis of variances (ANOVA) test indicate that all months except the month of February with 1.189 had a value less than 1%. So the null hypothesis is rejected because the result of the test is less than 1%. There is therefore, a significant relationship between January Effect on stock returns and the mean monthly stock returns of February to December.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This chapter gives a summary of the study findings, conclusion and policy recommendations. It also presents the limitations of the study and suggestions for further research. The data was analyzed by use of SPSS package to produce the correlation as well as regression analysis. Tables were used to describe the data and draw conclusions on the findings. The research problem was developed in chapter one and supported with a literature review in chapter two. The research methodology was outlined in chapter three and the findings presented in the previous chapter.

The study used correlation coefficient describing the association between movements of two variables. It describes the variables movements either in the same direction positive association or in different direction negative association. This study has as well used coefficient of determinant, which depicts how the movement in one variable can be explained by the movements in the other in percentages. This coefficient depicts the effects of one variable over another. From the correlation analysis, the subsequent matrix for correlations for paired variables indicated there are no significant difference between January and the other months. The correlations generally showed a strong correlation between the remainder 11 months of the year. The months with the strongest correlations are between October and November (r= 0.909) while Between April and May at (r= 0.949). From the correlations matrix it can be concluded that there is no January effect on stock since all other 11 months exhibit more or less similar mean returns.

A parametric test, 1-way ANOVA, was employed because the data conforms to an ordinal scale and because of the sample size. The test was used with a significant level of 1%, so the null hypothesis is rejected if the result of the test is less than 1%. The results of the analysis of variances (ANOVA) test indicate that all months except the month of February with 1.189 had a value less than 1%. The analysis concluded that there is a significant relationship between January Effect on stock returns and the mean monthly stock returns of February to December

5.2 Conclusion

In this study, we have tried to determine whether the effect of Time-of-the-Month of January Effect on stock returns and to establish the effect of Tax Loss selling on stock returns suggested in the literature review yield substantially the same characteristics for companies listed in the NSE

Elsewhere it has been demonstrated that they is a significance difference in the share stock volatility between the month of January and other months for example, in the Us a recent study by using monthly average returns or U.S. Securities for period of 1970 to 2005 revealed that a significant January effect existed except for the period 1990-2005 where negative July effect dominated. While studies on the Tokyo Securities Exchange studies found that both of these effects are present there and are just similar to the U.S. Securities Market. There has been evidence in similar studies of the presence of January effect for Canadian Securities.

The findings give an insight into the January effect on stock returns of companies listed in the Nairobi Securities Exchange. The study was guided by the following objectives; to find out the effect of Time-of-the-Month of January Effect on stock returns and to establish the effect of Tax Loss selling on stock returns. According to

the findings presented in the previous chapter, the study has shown that the correlation coefficient between January and the rest of the months is positive this by extension implies that January has no effect on the average stock prices of the other months. The study findings are in agreement with Alagidede who in a study of Kenya, Morocco and Tunisia rejected the month-of-the-year effect on stock returns.

This study employed linear model for estimating the effect of January in terms of other months and from the results of the regression analysis this study presents the same conclusions. From the preceding analysis presented above evidence shows that the positive January effect has paled into insignificance. On the other hand, economic reasoning suggests that financially significant anomalies would tend to disappear once traders become aware of them and begin to exploit them. Apart from this, the vanishing January effect can be attributed to: (i) changes in accounting standards that do not make as great a distinction as in the past between realized and unrealized capital gains and losses; (ii) changes in the tax treatment of realized and unrealized gains/losses; and (iii) lower marginal tax rates, which dampens the incentive to engage in tax motivated trading.

5.3 Policy Recommendations

Comparisons between our economy and other economies and stock exchanges to find out the reasons why the fluctuations are either positive or negative need to be done. A research on the macro-economic and other factors to find out the other causes of these fluctuations should also be done to shed more light on why there are these fluctuations. This is important to be able to determine in advance what to expect in the market scene. A research on the effect of regime changes such as experienced in Kenya should be looked into and other major events to determine the effects of the event to the stock and bond prices.

The Nairobi Stock Exchange is not extensively researched and a lot of work needs to be done to provide information to stake holders, traders and the public at large. As seen earlier the stock exchange plays an important role in any country's development. A lot of information about this market needs to be known to attract more players and also for the existing players to commit more of their funds in the market to increase turnover. This study undertook to find the relationship between effect of January on stock returns and bond returns .The results show that there is no correlation between the January effect on stock returns and the average of all shares returns. Different stock exchanges show different types of relations.

The mixed results from the NSE are an indicator that the stock is yet to develop to internationally acclaimed standards. The NSE should therefore endeavors to build on its existing suite of products and services in order to meet the evolving needs of our domestic and international investors. A partnership with International bourses can illustrate commitment to meeting this need. It is a crucial part of the efforts of the Nairobi Securities Exchange to evolve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments.

5.4 Limitations of the Study

Due to the unique nature of each industry in the NSE and variances in accounting methodologies among them, the mean monthly stock prices should normally be used for comparisons within the same industry.

Comparisons of monthly stock prices within different industry can also be misleading as mean monthly prices ignore the effect of debt. If a company can issue debt at a lower interest rate than the rate of return on its investments, it could increase its share

price. However, higher debt also increases the risk of failure for the company. Generally, companies with higher debt, as measured by the debt to liquidity ratio, will have better prices. An investor could get a better sense of the investment by considering the Return on assets, which mitigates the influence of debt

There is a possibility of share price volatility to be different and hence the results of the finding, if the daily share prices for each company are taken and select the high, low and closing for each day rather than the monthly prices.

Some of the calendar months had less than 22 working days as a result of holidays. Moreover, some shares were inactive or not active in some periods. This made the analysis of data to be done for less than intended period.

5.5 Suggestions for Further Research

This study may be viewed as a starting point for several other studies related to it. Further research can be carried out in the following areas: -

It can be replicated in future with changes of measure from monthly to daily share prices. The length of period over which the measures are computed may be important. The range divided by the mid-range particularly is likely to be quite satisfactory for short periods and unsatisfactory for longer periods.

It could be profitably extended by an experiment to determine whether any of the suggested volatility measures approximate investment decision-makers subjective weighting of stock as to risk, since volatility has been used as a risk surrogate.

It is important that a similar study be conducted with a bigger sample and time horizon by using advanced time series models to enhance our understanding of the

association between the January Effect on stock returns and to establish the effect of Tax Loss selling on stock returns

Some of the listed categories of shares are very few in numbers and thus, their effect on the stock returns cannot be said to be significant. Secondly, the stock market is not developed since the share prices seems to rise significantly in the last years of this study that is in 2002 and 2011, thus more realistic associations can be adduced in those years as compared to the previous years. The time period of study is also short due to lack of significant information in the past years.

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APPENDICES

APPENDIX 1: LISTED COMPANIES AT NAIROBI SECURITIES EXCHANGE

Eaagads Ltd

Kapchorua Tea Co. Ltd

Kakuzi

Limuru Tea Co. Ltd

Rea Vipingo Plantations Ltd

Sasini Ltd

Williamson Tea Kenya Ltd

COMMERCIAL AND SERVICES

Express Ltd

Kenya Airways Ltd

Nation Media Group

Standard Group Ltd

TPS Eastern Africa (Serena) Ltd

Scangroup Ltd

Uchumi Supermarket Ltd

Hutchings Biemer Ltd

Longhorn Kenya Ltd

TELECOMMUNICATION AND TECHNOLOGY

Access Kenya Group Ltd

Safaricom Ltd

AUTOMOBILES AND ACCESSORIES

Car and General (K) Ltd

CMC Holdings Ltd

Sameer Africa Ltd

Marshalls (E.A.) Ltd

BANKING

Barclays Bank Ltd

CFC Stanbic Holdings Ltd

Diamond Trust Bank Kenya Ltd

Housing Finance Co Ltd

Kenya Commercial Bank Ltd

National Bank of Kenya Ltd

NIC Bank Ltd

Standard Chartered Bank Ltd

Equity Bank Ltd

The Co-operative Bank of Kenya Ltd

INSURANCE

Jubilee Holdings Ltd

Pan Africa Insurance Holdings Ltd

Kenya Re-Insurance Corporation Ltd

CFC Insurance Holdings

British-American Investments Company (Kenya) Ltd

INVESTMENT

City Trust Ltd

Olympia Capital Holdings ltd

Centum Investment Co Ltd

Trans-Century Ltd

MANUFACTURING AND ALLIED

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Carbacid Investments Ltd

East African Breweries Ltd

Mumias Sugar Co. Ltd

Unga Group Ltd Ord

Eveready East Africa Ltd

Kenya Orchards Ltd

A.Baumann CO Ltd

APPENDIX II- Correlations Matrix

Correlations												
Control Variables			**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**
January	**February**	**Correlation**	1.000	.703	.520	.459	.375	.349	.309	.314	.314	.293	.229
		Significance (2-tailed)	.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
		df	0	541	541	541	541	541	541	541	541	541	541
	March	**Correlation**	.703	1.000	.830	.744	.614	.550	.443	.422	.420	.388	.309
		Significance (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000	.000	.000	.000
		df	541	0	541	541	541	541	541	541	541	541	541
	April	**Correlation**	.520	.830	1.000	.939	.762	.693	.569	.559	.549	.506	.428
		Significance (2-tailed)	.000	.000	.	.000	.000	.000	.000	.000	.000	.000	.000
		df	541	541	0	541	541	541	541	541	541	541	541
	May	**Correlation**	.459	.744	.939	1.000	.871	.795	.648	.596	.598	.544	.484
		Significance (2-tailed)	.000	.000	.000	.	.000	.000	.000	.000	.000	.000	.000
		df	541	541	541	0	541	541	541	541	541	541	541
	June	**Correlation**	.375	.614	.762	.871	1.000	.915	.736	.565	.543	.491	.421
		Significance (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000	.000	.000	.000
		df	541	541	541	541	0	541	541	541	541	541	541
	July	**Correlation**	.349	.550	.693	.795	.915	1.000	.865	.699	.671	.616	.509
		Significance (2-tailed)	.000	.000	.000	.000	.000	.	.000	.000	.000	.000	.000
		df	541	541	541	541	541	0	541	541	541	541	541
	August	**Correlation**	.309	.443	.569	.648	.736	.865	1.000	.791	.747	.688	.554
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.	.000	.000	.000	.000
		df	541	541	541	541	541	541	0	541	541	541	541
	September	**Correlation**	.314	.422	.559	.596	.565	.699	.791	1.000	.936	.823	.717
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.	.000	.000	.000
		df	541	541	541	541	541	541	541	0	541	541	541
	October	**Correlation**	.314	.420	.549	.598	.543	.671	.747	.936	1.000	.909	.790
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.	.000	.000

		df	541	541	541	541	541	541	541	541	0	541	541
	November	**Correlation**	.293	.388	.506	.544	.491	.616	.688	.823	.909	1.000	.766
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.	.000
		df	541	541	541	541	541	541	541	541	541	0	541
	December	**Correlation**	.229	.309	.428	.484	.421	.509	.554	.717	.790	.766	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.
		df	541	541	541	541	541	541	541	541	541	541	0