THE EMPIRICAL RELATIONSHIP BETWEEN TRADING VOLUMES AND RETURNS VOLATILITY AT THE NAIROBI STOCK EXCHANGE

BY:

GAKURU FLORENCE KARUNGARI

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DECLARATION

I hereby declare that this project paper is my original work and has not been presented for a degree in any other University

Signed: ---------------------------   Date : ----28/11/2006----

FLORENCE KARUNGARI GAKURU

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

Signed: ---------------------------   Date : ----28/11/2006----

MR. ANYANGU
Department of Accounting and Finance
Faculty of Commerce, University Of Nairobi

DEDICATION

To my Dad, Mum, Brothers, Sisters and Friends.

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ABSTRACT

The relationship between Trading Volume and Stock return volatility can lead to many insights in financial theory, particularly the Black – Scholes type derivative pricing formula. Knowledge of this relationship helps explain how returns are generated and the implications for inferring return behavior from trading volume data. Over the past ten years, much work has been done, mostly in developed stock markets, trying to understand this relationship.

This paper presents an empirical analysis of the relationship between trading volume and returns volatility at the Nairobi Stock Exchange. Research was carried out on 20 companies, which constitute the NSE 20 Share Index that remained listed at the NSE and traded over five year period under study (1998 – 2002). The study used Regression as well as Correlation to determine whether there exists a relationship and the degree of association between trading volume and returns volatility.

Daily trading volumes were used to construct monthly trading volume data while daily returns to construct monthly returns data. Return Volatility was arrived at through computation of Standard deviation of monthly returns. Correlation coefficient and Coefficient of Determination were used to find the relationship between returns volatility and trading volumes for the period under study.

The findings show that there was no relationship between trading volume and returns volatility of the companies that constitutes NSE 20 Share Index. Specifically past history of the series cannot be used to predict the future in any meaningful way.

CHAPTER ONE: INTRODUCTION

1.1 Background

Empirical investigations on stock markets traditionally focus primarily on stock prices and their behavior over time. However, due to some undesirable stochastic properties of stock prices, e.g. non-stationarity, most researchers focus on stock returns rather than stock prices. Based on the available set of information about a firm, its stock return reflects investors' expectations on the future performance of that firm. The arrival of new information causes investors to adapt their expectations and is the main source for price and return movements. However, since investors are heterogeneous in their interpretations of new information, stock returns may remain unchanged even though new information is revealed to the market. This will be the case if some investors interpret it as good news whereas others find it to be bad news. Changes in prices therefore reflect the average reaction of investors to news.

On the other hand, stock returns may only change if there is positive trading volume. As with returns, trading volume and volume changes mainly reflect the available set of relevant information on the market. Unlike stock prices and returns, however, a revision in investors' expectations always leads to an increase in trading volume which therefore reflects the sum of investors' reactions to news. Studying the joint dynamics of stock returns and trading volume therefore improves the understanding of the microstructure of stock markets.

Market folklore suggests that trading volume is positively related to stock return volatility. While there is substantial anecdotal evidence supporting these links, there is little scientific evidence in this area, particularly in Kenya. A major limitation has been the lack of substantial theory linking trading volume directly to stock returns. However, more recently, researchers have examined indirect links through models of

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information arrival and stock returns. Examples include Kyle (1985), Easley and O'Hara (1987), Admati and Pfleiderer (1988), Barclay, Litzenberger and Warner (1990), Foster and Viswanathan (1990), Brock and Kleidon (1992), Barclay and Warner (1993) and Romer (1993). These papers are generally based on information economics and tend to be focussed toward micro-structure issues. The association between stock return volatility and trading volume has been analyzed by several authors since the 1980's (Karpoff, 1987; Brock; Lebaron, 1996; Lee; Rui, 2002; Mestel; Gurgul; Majsdoz, 2003).

Recently, stochastic time series models of conditional heteroscedasticity have been applied to explore this relationship (Lamoureux; Lastrapes, 1990; Andersen, 1996; Brailsford, 1996; Gallo; Pacini, 2000; Omran; Mckenzie, 2000). The studies mostly conclude that there is evidence for a strong relationship (contemporaneous as well as dynamic) between return volatility and trading volume. However, there is reported evidence using intraday data from the Dow Jones Industrial Average stocks of only significant lead/lag relations but not of contemporaneous correlation between return volatility and trading volume (Darrat; Rahman; Zhong, 2003).

A recent study scrutinizes the empirical relationship between stock returns, return volatility and trading volume on the Austrian stock market (Mestel; Gurgul; Majdosz, 2003). The authors find only weak support for a contemporaneous and dynamic relationship between stock returns and trading volume, implying that forecasts of one of these variables cannot be improved by knowledge of the other. Besides, they find evidence of a strong contemporaneous relationship between return volatility and trading volume and that return volatility contains information about upcoming trading volume.

Stock return volatility rises more following stock price declines ("bad news") than following stock price increases ("good news"). There are a host of popular explanations for this well-known "asymmetry" in stock return volatility. The "leverage effect" posits that a firm's stock price decline raises the firm's financial leverage, resulting in an increase in the volatility of equity. Others have suggested that this negative relationship between returns and return volatility stems from natural time-variation in the risk premium on stock returns. That is, an unexpected increase in volatility today leads to upward revisions by market participants of future expected volatility and, therefore, upward revisions of the risk premium, which compensates them for greater risk. But, a higher risk premium leads to a greater discounting of future expected cash flows (holding those cash flows constant) and, therefore, lower stock prices or negative returns today. While these explanations are popular, the empirical evidence to support them has been limited in scope and two relatively new studies have suggested that these perspectives may be biased by the fact that they focus on aggregate market returns and not those of individual stocks.

Duffee (1995) explicitly studies stock returns and volatility of individual firms and finds that the negative relationship between changes stock return variances and stock returns stems from the fact that the relationship between volatility today and returns today is actually strongly positive, but that between volatility tomorrow and returns today is negative. He finds this regularity for large and small capitalization firms and similar for firms with little and high financial leverage. In addition to de-bunking the leverage and risk premium hypotheses for the asymmetric effect in volatility, he offers another related to the option properties of growth opportunities, rather than assets in place, for a firm. In other words, growth opportunities are "real options" on future cash flows from assets in place and firms with greater volatility would have more valuable growth opportunities and higher equity value. A newer study by Shin and Stulz (2000) also performs a firm-level analysis but they decompose risk into its market and firm-specific components. They show that changes in market risk are

positively correlated with changes in firm value, but changes in firm-specific risk are negatively correlated with changes firm value, and this new regularity applies mostly to small firms and equally for low- and highly-leveraged firms. They suggest that this finding is not consistent with Duffee's "growth option" theory and appeal to capital structure and risk management theories that relate to the ease of access to capital markets (especially for large firms) and of economies of scale in setting up risk management programs.

Investors in stock are interested in return on their investments. Stock prices however, vary and this has implications on the stock returns. Investors, money managers, traders and other participants of financial markets when making decisions rely heavily on their ability to assess risk and potential profitability of financial assets. Guided by the risk-return tradeoff, investors accept higher risk of an asset only if its potential return is also higher. Therefore, the problem of risk and return measurement and forecasting becomes of a tremendous importance from the practical standpoint, at the same time being an extremely challenging issue for the academic world. The analysis of trading volume, return and volatility, which is the most general measure of asset risk, constitutes one of most important, ample, but still contradictory and inconclusive in many branches of empirical finance literature.

Stocks are influenced by many other factors in the economy the direction of influence underlying the asset-pricing literature is the traditional one – from the economy to the stock market. A similar focus is found in the literature, which explores the response of aggregate stock prices and therefore returns to the (expected) inflation rate as indicated by the Early work of Bodie (1976), Fama and Schwert (1977), Jaffe and Mandelker (1976) and Nelson (1976) as quoted by black (2000). Similar studies assess the response of the stock market (often, but not always, at an aggregate level) to other macro variables such as those which capture monetary and fiscal policy

shocks (Pearce and Roley, (1985), Jain, (1988), Aggarwal and Schirm, (1992), and Singh (1993) as quoted by black (2000). Alternatively it can be seen as an extension to the macroeconomic level of the work on the relationship between stock prices and dividends initiated by Campbell et al (1987).

Index numbers are applied in the measurement of movements at the stock market. An Index number effectively summarizes hundreds of price movements. There are both price and volume index. The volume of shares traded might be as important as the change in a market index since substantial price increases and decreases are often accompanied by heavy trading activity. To this extent a positive correlation between purely share price based index and volume based index is hypothesised. The volume of shares traded is the total number of shares traded on the Stock Exchange on a particular day, which together with the total value of all shares traded, (that, is turnover) gives a measure of the amount of business activity on the Stock Exchange.

The amount of daily volume on a security can fluctuate on any given day depending on the amount of new information available about the company, whether options contracts are set to expire soon, whether the trading day is a full or half day, and many other possible factors. Of the many different elements affecting trading volume, new information provided correlates the most to the fundamental valuation of the security. This information can be a press release or a regular earnings announcement provided by the company, or it can be a third party communication, such as a court ruling or a release by a regulatory agency pertaining to the company. Because of what can be inferred from abnormal trading volume, the analysis of trading volume and associated price changes corresponding to informational releases has been of much interest to researchers.

Volume is a basic element for stock decisions. In the trading world, it oftentimes is said that when it comes to the stock market, price is king, but volume is queen. Volume is considered in ones portfolio management. It is important to remember that high volume stocks tend to have a far better liquidity than the lower volume counterparts. As a result, when it comes to developing a profitable investment strategy, these high volume stocks tend towards having an advantageous entry and exit price for most people involved in stock trading. The high volume stocks, can lessen the likelihood that you will face a devastating loss in the stock market.

Investors are greatly concerned in the value, which their investments will bring thus the question of stock returns is very important. Stock returns are the gains, which an investor will gain from any stock, which include capital gains and dividends. The risk or likelihood of future returns is also important to the investor. Merton (1973) shows that risk-averse investors demand extra compensation for bearing extra risk, ceteris paribus. Following Merton (1980), the behavior of assets returns is related to the properties of the financial markets in two distinct ways. First, asset returns directly depend on how well the financial system carries out its main functions: the facilitation of the trading, hedging and diversification of risk, the provision of liquidity, the monitoring of managers and exertion of corporate control. For instance, shortage of liquidity may exaggerate asset price movements. Higher transaction costs may require a higher gross rate of return. Surprisingly, these issues have not received any serious attention before. Secondly financial markets, price assets indirectly through macroeconomic fundamentals and the relationship between macroeconomic performance and financial development has been the subject of a substantial body of recent research. A presumption seems to have emerged that financial development leads to higher economic growth (Bacchetta and Caminal, 2000). The truth is that there are a multitude of factors impacting on the market on any given day, hour, or

even minute, from corporate earnings releases to political news, to general market sentiment to and economic data.

Stock market volatility refers to the degree to which price of a security, commodity or market rises and falls within a short term period (Mullins, 2000). Glen (1994) refers to volatility as the frequency and magnitude of price movement. Volatility is a measure of the range of an asset price about its mean level over a fixed amount of time (Abken and Nandi 1968). It follows that volatility is linked to the variance of an asset price. If a stock is labeled as volatile then the price will vary greatly over time. Conversely, a less volatile stock will have a price that will deviate relatively little over time. Since volatility is associated with risk, the more volatile that a stock is, the more risky it is. Consequently, the more risky a stock is, the harder it is to say with any certainty what the future price of the stock will be (Criss 1996) When people invest, they would like to have no risk. The least amount of risk that is involved, the better the investment is. Since almost every investment has some risk, investors have looked for ways to minimize risk.

Volatility is a great concern for investors or for anyone dealing with money. Investors like to know how much volatility, or risk, that they are exposed to. Volatility in general reflects the importance of variability or dispersion around central tendency. Thus, it dictates the extent and likelihood of possible return realizations hence helps give a feel for what the possible range of values that a stock will be in. Thus, when an investor knows how much volatility he is exposed to, he can make informed decisions on his investments.

1.2 Statement of the problem

Researchers have long established an empirical relationship between trading volume and stock return volatility. The premise underlying theoretical and empirical models is that price movements are caused by the arrival of new information and by the process that incorporates new information into market prices. Some of the news is public (e.g. unemployment statistics, earnings announcements), but most of the news is private (including interpretations of the public information) and this latter type of event motivates trade in response to the arrival of new information. Empirical work with intraday, transactions-based data has shown systematic patterns in the relationship between stock return volatility and trading volume, the number of transactions, the bidask spread, or market liquidity, in general. As a result, a whole new branch of Finance, "market microstructure," has been spawned by these theories and the evidence. The challenge of this field, however, is that the specification of the process is still ad hoc. That is, one can only show an association between stock return volatility and trading activity and not that one drives the other.

Harris (1989) reported that there was a positive correlation between returns, variance and volume traded. This was supported by Gallant, Rossi and Tauchen (1992) and Jones, Kaul and Lipson (1994), Cornell (1981) and Bassembinder and Seguin (1992). The volatility is found to be high during the hours when the informations were at its peak (French & Roll 1986; Oldfield & Rogalski 1980; Stoll & Whaley 1990). Trading volume (measured by both number of stocks traded and number of transactions) were found to be high immediately after the announcement of profit (Brown, Clinch & Foster1992; Cready & Mynatt 1991; Kiger 1972; Morse 1981) and quickly eased back during the first hour. Barclay and Litzenberger (1988) found that new equity issues announcement was followed by a drop in prices and an increase in volume that was abnormal. An intraday study by Muhammed, Fauzias and Othman (1995) also support the volatility behaviour in the Kuala Lumpur Stock Exchange. On the other hand, Jain

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(1988) found that macroeconomic announcements, including money supply, consumer's price index, industrial output and unemployment statistics did not show similar abnormality.

Karpoff (1986) forwarded a theory that relates returns and volatility with volume traded, which resulted in an asymmetric relationship between volume and price change. However, Karpof (1987) repeated the study empirically and found a weak evidence to support the relationship between volume and return, and further suggested a model that relates trading volume, return and volatility. However the relationship between trading volume, return and volatility in the Kenyan stock market is not known since no known study has been under taken to establish this relationship between between trading volume, return and volatility at the Nairobi Stock Exchange.

1.3 Objective of the study

The objective of this study is to analyze the relationship between trading volume and stock returns volatility at the Nairobi Stock Exchange (NSE).

1.4 Importance of the study

Recent investigations on the volatility of stock returns have been dominated by time series models of conditional heteroskedasticity and have found strong support for GARCH effects. These findings are important in the field of applied finance for at least three reasons. First, the estimated return variances are used as risk measures and enter directly into Black-Scholes type derivative pricing formulas. Second, heteroskedasticity must be taken into account for tests of market effeciency to produce reliable test statistics. Third, most asset pricing theories relate expected returns to the joint second order movements of returns as well as other stochastic

processes and, therefore, efficient estimating and testing must take into account the heteroskedasticity property of returns.

Though, not as important the effect of information on movements in stock volumes in short run current, future forecasts of the current and future trading volume can also be ascertained. Stock return-volume relation can be used as basis of trading strategy and as evidence for and against the efficiency or otherwise of stock markets. Understanding volume - returns relationship and volatility has important practical implications in several areas.

Portfolio Managers

Asset allocation between stocks is one of the fundamental decisions that portfolio managers and individual investors must make.

Traders / Investors

The objective of trading in stocks for the average trader is to realize capital gains. Understanding the stock volume, return, volatility relationship, information content and the correlation is a useful tool to investors / traders when making decisions on risk management and derivative valuation. Thus the importance of this study is that it will enable investors to understand more on the generation of returns, their distribution and volatility. Improving investor information may result in improvement of investment choice. Thus if more and more investors make better choices the market will allocate funds to the best investment, thus enabling it primary purpose. Investment advisors will be better placed in advising their clients about the best portfolio combination to invest in stocks.

Management

It is important for managers of listed companies to realize the benefits associated with high volume stocks and volatility. Such stocks gain popularity leading to increased analyst following. The management of listed company will therefore see the need to increase their volume of stock traded.

Academicians

To improve the existing academic body of knowledge.

CHAPTER TWO: LITERATURE REVIEW

After the event studies by Ball and Brown (1968) and Fama et. al. (1969), many similar studies emerged in the areas of finance, accounting and economy. These studies were done from four angles, i.e., information contents, market efficiencies, model evaluation and matrix information (Bowman 1983; Damodran 1985).

2.1 Empirical studies on Trading Volume and Return Volatility relationship

The analysis of the relationship of trading volume, return and volatility is a topic considered for long. The initial analysis centres upon Karpoff's (1986,1987) model of the volume-price change relationship. Karpoff attempts to provide a theory, which directly links returns with trading volume. Karpoff's model ultimately leads to an asymmetric relationship between volume and price change. Empirical tests have generally supported the model Karpoff (1987) and Jain and Joh (1988). Another model which predicts an asymmetric relationship between trading volume and price changes is that originally proposed by Epps (1975) and developed by Jennings, Starks and Fellingham (1981).

There are a number of empirical papers that provide indirect evidence on the relationship between trading volume and stock returns. It is well documented that returns on the New York Stock Exchange (NYSE) tend to follow a U-shaped pattern during the trading day Harris (1986, 1989), McInish and Wood (1985, 1990a) and Wood, McInish and Ord (1985). Intraday volatility also follows a U-shaped pattern Lockwood and Lin (1990). Similar results have been reported for the Hong Kong Stock Exchange Ho and Cheung (1991), the London Stock Exchange Yadav and Pope (1992), the Tokyo Stock Exchange Chang, (1990) suggest that this relationship does not necessarily follow. The empirical facts generally lend greater support to the

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Admati and Pfleiderer model. Fukuda, Rhee and Takano (1993) and the Toronto Stock Exchange McInish and Wood (1990b). Furthermore, the futures market Chan, Chan and Karolyi (1991) and the options market Peterson (1990) also exhibit similar U-shaped patterns in both the level and variance of returns.

Jain and Joh (1988), Wei (1992) and Wood, McInish and Ord (1985) show that trading volume (measured as the number of shares traded) follows a U-shaped pattern during the trading day. Hence, considering the similar patterns observed for both volume and variance, a positive correlation between the variance of returns and trading volume may be inferred. Further support is offered by Harris (1987) who finds a positive correlation between changes in volume (measured as the number of transactions) and changes in squared returns for individual NYSE stocks. This relationship was found to be stronger for interday intervals than intraday intervals. Cornell [1981] also finds a positive correlation between changes in volume and changes in absolute price in various futures market contracts.

Generally it is known that prices react to the arrival of new information. Studies relating to the association of prices, volume traded and the arrival of information can be found in Bamber (1986), Barclay and Litzenberger (1968), Brown, Clinch and Foster (1992), Cready and Mynat (1991), Jain and Joh (1988), Kiger (1972), Morse (1981) and Winsen (1976). All of these studies, in general, found that there is a relationship between volume traded and arrival of information. Korpoff (1987) suggested that, due to the fixed supply of securities in any fixed point, the results of previous studies were due to the demand for securities. The difference in the demand for securities depends on the micro-structure including trading cost, strength of information, number of investors and number of securities in the market (Jennings, Starks & Flemming 1981). However, these studies were limited due to the problem of evaluating the information. The arrival of new information increases the volume traded and subsequently changes the price. Since the information could be bad or

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good, the price change can be negative or positive but the volume traded will never be negative.

While a large number of studies has found evidence in favor of GARCH effects in stock returns, there is no consensus on the underlying economic explanations for the autoregressive effect on the conditional variance. One of the possible theoretical explanations is the mixture of distribution hypothesis, hereafter MDH, put forward by Clark (1973), Epps and Epps (1976), Tauchen and Pitts (1983), and more recently Lamoureux and Lastrapes (1990). According to the MDH a serially correlated mixing variable measuring the rate at which information arrives to the market explains the GARCH effect in the returns. This linkage has been documented among others for the US stock market (Lamoureux and Lastrapes (1990), Kim and Kon (1994), Andersen (1996), Gallo and Pacini (2000)) and the UK stock market (Omran and McKenzie (2000)). In general, the bulk of empirical studies has found support that the inclusion of trading volume in GARCH models for returns results in a decrease of the estimated persistence or even vanishes it.

Bessembinder and Seguin (1992) document evidence which supports a positive relationship between volume and volatility, however this relationship was significantly weakened by the introduction of futures trading in 1982. Subsequent to the introduction of futures trading, Bessembinder and Seguin report a positive relationship between expected futures trading volume and equity market volatility. In a related study into financial and commodity futures, Bessembinder and Seguin (1993) confirm the positive relationship between volume and volatility and document an asymmetric volatility response to unexpected shocks in trading volume. Positive unexpected shocks to trading volume were found to induce an average increase in volatility of 76 percent, while negative unexpected shocks to trading volume induce a smaller response in volatility.

Of note is that Woodruff and Senchack (1988) find that bad news earnings announcements are associated with a smaller number of transactions but that the average volume per transaction is larger than trades following good news earnings announcements. This result indicates that different measures of volume can provide conflicting results, and goes some way to explaining the inconsistent findings.

French and Roll (1986) show that volatility is higher during trading hours. On an equivalent hourly basis, French and Roll document that volatility during trading hours on the NYSE is far greater than during weekend non-trading hours and conclude that the greater variance during trading time is due to the arrival of private (rather than public) information. Supportive evidence can be found in Oldfield and Rogalski (1980) and Stoll and Whaley (1990). Houston and Ryngaert (1992) show that market closures during the week affect the pattern of volume and volatility during the week but that the total volume and volatility over the week is constant.

Harris and Raviv (1993) showed that large trading volume tends to announce large subsequent absolute price changes that is high volatility. In particular, they showed that the stocks that experienced unusually high (low) trading volumes outperform (are outperformed by) the stocks, which had normal trading volume. This effect appeared to grow over time, especially for the high – Volume stocks.

Studies have shown that returns, especially in the short run, are not normal and the typical distributions are volatility clustering or autoregressive conditional heteroskedasticity (ARCH) (Bollerslev, Chou & Kroner 1992). The ARCH model was suggested to overcome the problem of group volatility. According to this model, if the arrival of news is serially correlated, the innovation for information process will result in the momentum of the squared daily returns (Lamourex & Lastrapes 1990). The ARCH model in this case will overcome the problem of continuous volatility.

Lamourex and Lastrapes (1990) found that the Generalized ARCH model is most suitable for the existence of continuous volatility.

It is also found that high stock volume is linked with volatility and positive relation between stock returns and volume. Morse (1980) found that the serial correlation of returns in high volume and high volume periods tend to have positively autocorrelated returns. Le Baron (1992a) and Sentana and Wadhwani (1992) showed that autocorrelation of daily stock returns change with the variance of returns. Duffee (1992) established the relation between serial correlation and trading volume in aggregate monthly data. Campbell, Grossman and Wang (1993) examined the relationship between aggregate stock market trading volume and the serial correlation of daily stock return. They found that a stock price decline on high volume day is more likely than a stock price decline on low volume day to be associated with an increase in the expected stock return. Omran and Mckenzie (2000) investigated the relation between volume of trade and conditional variance of trade and found the significant relation between timing of innovational outliers in returns and volume.

2.2 Capital Markets

The capital market has been acknowledged all over the world as vital for long-term economic growth. A strong positive correlation exists between the level of sophistication of a country's capital market and its level of economic growth and development (Levine, 1997). Countries with well-developed capital markets generally tend to enjoy higher economic growth and development than those with underdeveloped capital markets. The potential in the Kenyan capital market is far from being fully utilized. There is a lot of un-invested capital that could be tapped into the capital market either by long term investors or speculators as evidenced by the over subscription of initial public offers (I.P.Os).

Capital markets are essential to preventing underutilization and waste of resources in an economy faced with declining real value of its currency. In most emerging markets today, capital markets afford the opportunity to millions of savers to invest their savings in various productive assets that act as a hedge against erosion of purchasing power. The ability to buy a claim on a fraction of a real asset and the concomitant diversification possibilities for an investor with limited resources is valuable to individuals as well as the society as a whole.

The availability of financial capital is a prerequisite for development and transformation of any nation's economy hence many African countries have invested in developing capital markets as institutions for mobilizing external capital inflow and domestic savings. The development of domestic capital markets provides an opportunity for greater funds mobilization, improved resource reallocation and provision of relevant information for investment appraisal (Black et al 1988). Although stocks represent long-term finance from the point of view of the firms receiving the funds they need, these may not necessarily be long-term investments on the part of the individual members of the public who acquire them. The reason is that stocks can be freely traded among members of the public after issue by the firm. The "market" in which existing stocks are exchanged is referred to as the stock market. This is in contrast with the capital market in which new capital is raised i.e. new stocks are sold.

Murinde (1993) showed that funds raised in emerging markets enable firms to decrease their over reliance on debt finance and to increase overall efficiency. Capital markets are essential for preventing under utilization and waste of resources in an economy faced with declining real value of its currency. Capital markets represent a fundamental element of the financial system of any modern economy and they play an important role in the allocation of capital within the economy. Therefore public

authorities responsible for economic policy as well as private sector agents who are active in the capital markets have a vested interest in capital markets that are both efficient and stable.

2.3 The Role of the Stock Exchange in the Economy

The Stock Exchange is a market that deals with the exchange of securities issued by publicly quoted companies, corporate bodies and the Government. The major role that the stock exchange has played, and continues to play in many economies is that it promotes a culture of thrift, or saving. The very fact that institutions exist where savers can safely invest their money and in addition earn a return, is an incentive to people to consume less and save more. The stock exchange improves the access to finance of different types of users by providing the flexibility for customization. This is made possible as the financial sector allows the different users of capital to raise capital in ways that are suited to meeting their specific needs. For example, established companies can raise short-term finance through commercial paper while small companies can raise long term capital by selling shares. The Government and even municipal councils can raise funds by floating various types of bonds as an alternative to foreign borrowing .The stock exchange assists in the transfer of savings to investment in productive enterprises as an alternative to keeping the savings idle. It should be appreciated that in as much as an economy can have savings, the lack of established mechanisms for channeling those savings into activities that create wealth would lead to misallocation or waste of those savings. Therefore, even if a culture of saving were to be encouraged, the lack of developed financial markets may lead to economic stagnation. Stock markets promote higher standards of accounting, resource management and transparency in the management of business. This is because financial markets encourage the separation of owners of capital, on the one hand, from managers of capital, on the other. This separation is important because of the recognition of the fact that people who have the money may not necessarily have the

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best business ideas, and people with the best ideas may not have the money and because the two need each other, the stock exchange becomes the all-important link.

The stock exchange provides investors with an efficient mechanism to liquidate their investments securities. The very fact that investors are certain of the possibility of selling out what they hold, as and when they want, is a major incentive for investment as it guarantees mobility of capital in the purchase of assets. Dewotor (2001) argues that a robust stock market assists in the rational and efficient allocation of capital, which is a scarce resource. The fact that capital is scarce means systems have to be developed where capital goes to the most deserving user. An efficient stock market sector will have the expertise, the institutions and the means to prioritize access to capital by competing users so that an economy manages to realize maximum output at least cost. This is what economists refer to as the optimum production level. If an economy does not have efficient financial markets, there is always the risk that scarce capital could be channeled to non-productive investments as opposed to productive ones, leading to wastage of resources and economic decline.

2.4 Trading Volume

Trading volume represents the total amount of trading activities or contracts that change hands in a given commodity market for a single trading day. Trading volume is also a measure of the quantity of shares that change owners for a given security. Volume gives you important insight into the strength of the current market direction for the option's underlying stock. The greater the amount of trading during a market session the higher will be the trading volume (Xiangmei.et al., 2003).

2.4.1 Measurement of Trading Volume

The volume, or market breadth, is measured in shares and tells you how meaningful the price movement in the market is. Trading volume is relative and needs to be compared to the average daily volume of the stock in question. A large percentage of change in price accompanied by larger than normal volume is a solid indication of market strength in the direction of the change but large percentage increases in price accompanied by small trading volumes are less likely to indicate a market direction. In fact, they may indicate that a reversal is likely in the near term. Given the inconsistency in the measurement of trading volume and the inconsistent results of previous research which have employed different measures of trading volume, daily trading volume is measured three ways:

• The daily number of equity trades;

• The daily number of shares traded;

• The daily total Kenyan shilling value of shares traded.

2.4.2 Factors influencing Trading Volume

Market indicators meet the demand for measures of stock market performance. Such indicators quantify movements in stock market prices, and act as a standard in evaluating the returns on money invested in the stock market. Return on stock prices and trading volume are two prime indicators of trading activity in a stock market. These factors are jointly determined by the same market dynamics and may contain valuable information about a security. While the return on stock prices are widely studied for the purpose of forecasting and analyzing information contained in the historical prices, there is little agreement on interpretation of past trading volume about a security.

Volume is a measure of the quantity of shares that change owners for a given security. The amount of daily volume on a security can fluctuate on any given day depending on the amount of new information available about the company, whether options contracts are set to expire soon, whether the trading day is a full or half day, and many other possible factors. Of the many different elements affecting trading volume, the one which correlates the most to the fundamental valuation of the security is the new information provided. This information can be a press release or a regular earnings announcement provided by the company, or it can be a third party communication, such as a court ruling or a release by a regulatory agency pertaining to the company. The abnormally large volumes are mostly due to differences in the investor's view of the valuation after incorporating the new information. Because of what can be inferred from abnormal trading volume, the analysis of trading volume and associated price changes corresponding to informational releases has been of much interest to researchers.

2.4.3 Impact of Trading Volume on Price

Karpoff (1987) cites a number of reasons why price-volume relation is important. First, empirical evidence on price-volume relation is helpful to analyze differing theories of information dissemination in financial markets. Second, understanding the joint distribution of returns and volume is important for statistical inference in event studies. Third, joint dynamics between returns and volume are also important to examine the distribution of returns. Finally, the information content of trading volume is important for understanding the validity of technical analysis, which assigns a special to trading volume (Blume et al. 1994).

Schwert (1990) argues that volume induces price changes because price changes are an important input into trading strategies. A belief in price persistence will result in many investors wishing to trade in the same direction when there is a price

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movement. This "herd" mentality becomes a self-fulfilling prophecy as the increased trading exacerbates the change in price, which in turn influences more investors to trade in the same direction. However, this argument relies upon price persistence, which implies that a random walk in price changes is invalid.

Informed traders will transact when new information (both public and private) becomes available. However, trading based on private information is difficult to identify, and hence trading volume has generally been examined in the context of public information. Woodruff and Senchack [1988] find a high level of volume (measured by both number of stocks traded and number of transactions) immediately following earnings announcements. Similar results have been reported by Brown, Clinch and Foster (1992), Cready and Mynatt (1991), Kiger (1972) and Morse (1981). This high level of volume disappears quickly (within the first hour).

2.5 Stock Returns

The stock returns are the gains, which an investor will gain from owning stock and they arise from two sources: dividends and other cash distributions, and capital gains. The risk or likelihood of future returns is also important to the investor. A total return index for stocks can be computed by assuming that all cash distributions, and capital gains are continually reinvested in the stock. This index would be akin to the accumulation of a pension plan that reinvested all dividends and capital gains in the stock (or group of stocks), or to the reinvestment of all distributions back into a mutual fund. Over time, the total return on stocks has exceeded that of any other class of asset.

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2.5.1 Measurement of Stock Returns

Stock returns are measured as the change in value plus any cash distributions during the period, expressed as a percentage of the beginning of period investment value. returns will be adjusted for bonus issue, stock splits and stock purchases. Stock market performance is usually measured by the percentage change in the stock price or index value, that is, the returns, over a set period of time.

2.5.2 Factors influencing Stock Returns

The study of economic variables is very important. Economic problems have repercussions on other investment variables and are the main causes of investor worries. The stock market becomes bearish when economic troubles emerge. Domestic macroeconomic factors influences stock price movements in the stock exchange, such as extreme variations in exchange rates and high inflation, can have significant effects on stock price indices (Choudry, 2001 as quoted by Jennifer and Bruce 2001). Past studies have shown that interest rates have a significant impact on stock returns Pearce and Roley (1985) and Hashiem, Zadah and Taylor (1988) found causal impacts of interest rate on stock returns. Dwyer and Herfer (1990) used changes in interest rates, unexpected changes in industrial production and changes in the exchange rate of five industrial countries using monthly data from 1973-1987 and found that only domestic interest rates had significant relationship with stock returns.

One of the most significant harbingers of stock returns is that of newly released economic data. Significant economic indicators of relevance to stock market investors are that of gross domestic product (GDP), inflation, exchange rate, and interest rates Jason (2000). Inflation is perhaps the most significant indicator for securities markets because it determines the erosion of the real value of your investment, and the

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necessary rate of return to compensate yourself for this erosion. (Jason 2000). The GDP is used as a key indicator of economic activity and future economic prospects thus any significant change in the GDP, either up or down, can have a major effect on stock market investors' sentiment. If investors believe that the economy is improving, and corporate earnings are improving along with it, then they are more likely to bid stock prices to higher levels. Conversely an actual or expected decline in GDP is very likely to run in parallel or in advance to a declining stock market.

With the GDP used as a key indicator of economic activity and future economic prospects, any significant change in the GDP, either up or down, can have a major effect on stock market investors' sentiment. If investors believe that the economy is improving, and corporate earnings improving along with it, then they are more likely to bid stock prices to higher levels. Leading to improvement on stock returns. Improvement in the economic environment shows that the company can be able to make more profits and thus be able to pay more dividends to the investors boosting the returns on the stock. Mukherjee et al (1997) related stock price return and out put or GDP growth. Mandaza (2002) showed that the changes in GDP are reflected in the Zimbabwean stock returns while other researchers have concluded that changes in the GDP must be reflected in the stock returns of companies. Keran (1971) as quoted by Zhanje (2001) concluded that growth in the GDP is a significant determinant in the stock returns in Canadian Stock.

Inflation is perhaps the most significant indicator for securities markets because it determines the erosion of the real value of the investment, and the necessary rate of return to compensate the investor for this erosion. Studies in the past have shown that inflation is a significant determinant of stock returns (Lee et al, 2000 and Chen et al 1986). Canover (1997) Schwert (1981) identified inflation rate as an explanatory variable for returns Kagume (1991) found inflation to have a negative but significant

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effect on stock returns. In Kenya the major causes of inflation has been drought, which has caused prices of consumer goods to be very high. High, unexpected inflation has a significant negative impact on stock market returns. Most countries suffered their worst stock market declines, as measured in real values, during a period of high inflation or hyperinflation as stocks and other financial assets failed to keep up with the increases in prices. In most cases, the real value of stocks declined by over 75% during these inflationary bouts. High inflation is usually accompanied by political and economic chaos, which reduce the earnings of corporations, and thus stock markets returns. Not only does inflation destroy the value of stocks and other financial assets, but dividends fail to keep up with the inflation, further reducing investors' total return. Market Stock prices are more variable than prices of most other assets, which means that the returns can change dramatically from year to year. Even after adjusting for the direct impact of inflation, there are other problems that should be considered. In countries where capital gains are taxed, inflation reduces the after-tax return relative to what would have occurred in a non-inflationary world.

Theory has explained that a change in the exchange rates would affect a firm's foreign operation and overall profits, which, in turn, would affect its stock prices. The nature of the change in stock prices would depend on the multinational characteristics of the firm. Conversely, a general downward movement of the stock market will motivate investors to seek for better returns elsewhere. This decreases the demand for money, pushing interest rates down, causing further outflow of funds and hence depreciating the currency (Ramasamy and Yeung 2001). Aggarwal (1981) found a significant positive correlation between the US dollar and US stock prices. Exchange rate depreciation has adverse effects on industries that depend on imported raw materials, as their costs will rise. On the other hand, exporters benefit since they receive more money. It is noted from many authors that stock prices are ultimately determined by shareholders expectation of a future income stream in form of dividends .The fundamental approach argues that investors value the dividends the stock will pay.

The value of this dividend stream should be the value of the stock. The value of the dividend stream itself, which, given the uncertainty of its future, entails an educated guess about what the firm will pay at some later date. It is by nature a forward-looking, expected-value calculation that buyers must make. The fundamental price of a stock may thus fluctuate for two reasons, namely expectations about dividends may change, or the required rate of return may change. That is, future cash flows may vary, or the way investors value those flows may vary. It is common knowledge that slow dividend growth may depress a stock's price, but it is also true that uncertainty about those dividends or an increase in bond and bank rates can have the same effect. Studies by Chen, Roll, and Ross (1986) identified statistically significant relationship between stock market returns and dividend yield.

Dividends are the part of monetary returns that an investors gains from his investments thus increase in this returns will increase the equity returns thus make equity attractive. However dividends are not declared from thin air they must be given from the earnings that a company makes. Thus the profitability of the company will determine the continued declaration of the dividends (Haubrich. J1997). Dividends are not just declared they have to be declared out of earnings current or retained. This makes earnings growth more fundamental than dividend growth. The optimist maintains that increased earnings will eventually result in larger dividends, justifying today's high stock prices. The optimist focuses on earnings growth. If growth remains strong, the dividends may likewise stay at a consistently high level, since investors expect earnings to continue rising. It is argued in the bird in hand theory that investors would rather have their income in dividend now rather than later (retained earnings). However the tax rate on dividends could be so much higher than capital gains tax, which could lead to preference of retained earnings. In Kenya capital gains tax is zero, while that of dividends is 5%for residents and 10% for non-residents thus it is a major

factor to consider as an investor. Tsuyoshi (1997) showed that there is a relationship between earnings per share and stock returns.

The government's policies determine whether buy-and-hold or market timing is the best strategy for investors. If the government provides a stable economic and political environment, buy-and-hold can be an effective long-term investment strategy; however, if uncertainty and chaos are the norm, and if inflation is a general phenomenon, market timing or outright avoidance are the best strategies.

Countries with corporatist policies that favor state-run firms, encourage import substitution, discourage free trade, and limit the growth in the size of firms that might compete with government-approved industries have generally provided very poor returns to investors. Countries that favor economic growth, exports, and provide a stable political and economic environment have provided strong returns to investors. Investors received the best returns in countries that provided a supportive economic and political environment in which earnings could increase, and inflation did not add to the uncertainty of the economic environment. The worst returns occurred in countries that provided no or little support to private business. Economic and political chaos, inflation, government ownership of the largest corporations, overbearing government regulation, barriers to trade, and other policies which limit corporate profits all hurt investors.

2.6 Trading Volume - Stock Return Relationship:

Examining the relation between returns and volume, a positive contemporaneous correlation was found by Rogalski (1978) using monthly stock and warrant data and by Epps (1977) using transactions data. To explain such results, Epps (1977) proposed a theoretical framework consistent with his findings. His framework implied the ratio

of volume to returns should be greater for price increases than for price decreases, which was supported by empirical evidence in Smirlock and Starks (1985). Smirlock and Starks (1985) have investigated the lagged relation between price changes and volume employing individual stock transactions data. They have documented a strong positive lagged relation between absolute price changes and volume. In addition, Hiemstra and Jones (1994) found a new result through the use of nonlinear Granger causality. They found a significant positive relation going in both directions between stock returns and trading volume.

Prior research proposes three hypotheses to account for the positive relation between stock returns and trading volume. Epps (1975, 1977) suggests that there might be behavioral reasons why investors are more willing to trade in rising markets than in falling markets. However, putting into investors' utility functions a greater desire to trade on up ticks is not a very satisfactory solution to this puzzle. Another theory that is difficult to incorporate into a model of rational investors is proposed by Harris (1986, 1987). He notes that if the expected stock-price change conditioned on the arrival of an arbitrary information `event' is positive, the arrival of many events (and therefore high volume) corresponds to an increase in the stock price.

A more plausible hypothesis is described in Karpof (1988), who argues that constraints on short sales raise the costs of trading when stock prices are falling. He tests this hypothesis by examining the correlations between returns and trading volume on various commodity futures contracts, which have no asymmetry in costs for going long versus going short. He finds insignificant correlations for the futures contracts he examines and concludes that the absence of short-sale constraints is the reason. However, at most this evidence indicates that explanations for the positive correlation between stock returns and volume must not be generic explanations applicable to all assets.

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Karpoff suggests the following four reasons for considering trading volume and its relationship to return. First, it adds insight to the structure of financial markets. The correlations can provide information regarding rate of information flow in the marketplace, the extent that prices reflect public information, the market size, and the existence of short sales and other market constraints. Second, studies that use a combination of price and volume data to draw inferences need to properly understand this relationship. For example, trading volume is often used to determine whether or not a price change was due to any informational content, and also whether investor interpretations of information are consistent or differing. Some researchers have used volume and price changes to determine that shareholders hold securities primarily because of dividend yields. Beaver asserts that the volume corresponding to a price change due to new information indicates how much investors differ in the interpretation of the new data. As one can imagine, the validity of many of these inferences rely on the relationships between price and volume. Third, understanding the price-volume relationship in futures and other speculative markets is vital for one to determine why the distribution of rates of return appear kurtotic. One theory is that rates of return are characterized by a class of distributions with infinite variance, known as the stable Paretian hypothesis. Another theory is that the data comes from a mixture of distributions which each have different conditional variances, known as the mixture distribution hypothesis. Research has shown that price data is generated by a stochastic process with changing variances, which can be predicted or estimated by volume data. These price-volume analyses support the mixture of distribution hypothesis in the following way. If we measure changes in volume data as a proxy for variances at different events, we observe that the distribution of returns exhibit different conditional variances. As a result, our return data follows a mixture of distributions. Fourth, price variability affects trading volume in futures contracts. This interaction determines whether speculation is a stabilizing or destabilizing factor on futures prices. The time to delivery Options contracts expire on the third Friday of

each month, unless that date is a holiday. The degree of peakedness of a distribution. It is a normalized form of the fourth central moment of a distribution.

2.7 Stock Market Volatility

Being an emerging market, the Nairobi stock exchange has been known to experience significant market volatility over years. Stock market volatility refers to the degree to which price of a security, commodity or market rises and falls within a short term period (Mullins, 2000). Glen (1994) refers to volatility as the frequency and magnitude of price movement.

One commonly used measure of volatility is the standard deviation of returns, which measures the dispersion of returns from an average. If the stock market is efficient, then the volatility of stock returns should be related to the volatility of the variables that affect asset prices. One candidate variable is dividends. But research conducted in the early 1980s suggests that variation in dividends alone cannot fully account for the variation in prices (see LeRoy and Porter 1981 and Shiller1981). Prices are much more variable than are the changes in future dividends that should be capitalized into prices. Asset prices apparently tend to make long-lived swings away from their fundamental values. This fact turned out to be equivalent to the finding that, at long horizons, stock returns displayed predictability. Thus, the literature on excess volatility broached the possibility that the stock market may not be efficient. In the excess volatility literature, the researchers understood that the dividends that are capitalized in the stock price arrive in the future and need to be "discounted" back to the present using a discount rate. In the early research it was assumed that this discount rate was constant. However, discount rates depend on investors' preferences for risk, which could very well change over time. Therefore, stock market volatility may not be excessive.

Previous research has shown that an individual firm's stock return volatility rises after stock prices fall. Two popular explanations of this finding are the leverage effect and time-varying risk premiums. The leverage effect predicts that a decrease in a firm's stock price reduces the value of equity, and therefore, increases the debt ratio of the firm. As a result, the risk associated with the firm increases, causing higher stock return volatility. The time-varying risk premium argues that an expected increase in stock return volatility increases the risk of holding the stock. To compensate for the additional risk, investors require a higher expected risk premium. As a consequence, we should observe an immediate stock price decline.

2.7.1 Recent Volatility cases at Nairobi Stock Exchange: A brief overview

In Kenya, investors counted their loses after a deepening bear run on the Nairobi stock exchange that affected some Kshs. 25 billion in share holder wealth since the year 2004 started (Daily Nation, Wednesday April 7, 2004). The volatility of return at the Nairobi stock exchange indicate symptoms of structural problems at local bourse small deal hunters mainly classified in term of frequency of transactions dominated the Kenyan stock market. They were responsible for the bullish run that was experienced largely in the year 2003. Yet in 2004, they were stampeding out of their investment position in droves it whereas, their institutions peers endeavored to weather out the volatility pressures as they held onto their long positions. It has been noted that two digit price fall resulting from transaction as small as 100 shares in it self a serious case of volatility have taken place at Nairobi stock exchange.

2.7.2 Controlling Stock Volatility

Volatility is often considered excessive if it cannot be explained by uncertainty of future real dividends. Understanding the causes of markets volatility has important policy implication on the imposition of price limits on financial assets. There are a

number of things causing volatility. Arbitrage is simultaneous or almost simultaneous buying and selling of an asset, to profit from price discrepancies this causes market to adjust prices and above all, has the effect of causing information to be more quickly assimilated into the market price. This is a peculiar result because arbitrage requires no more information than mere existence of a price discrepancy.

Another source of stock volatility is technology this comprises of more timely information dissemination improved technology to make trade and the variety of financial instruments. The faster information is disseminated the quicker market can react to both negative and positive news. Improved trading technology makes it easier to take advantage of arbitrage opportunity and the resulting price alignment arbitrage cause. Finally the array of financial instrument available provides investors with more opportunity to move their money into more kinds of investments position as investment condition changes.

Other identified factors locally are inflation, money supply, interest rates and exchange rates. Her findings indicated these micro economic variables do impact on the performance of stock price at the Nairobi stock exchange affecting stock marketing volatility.

2.7.3 Explaining Trading Volume with Non-Market Volatility

Traders trade on news. When nothing happens in the market, trading is light; when news arrives, both volatility and volume rise. It is suggested that the amount of news is higher on days when the market rises. When the market falls, it is more likely that there is one kind of big news about the common shock. Therefore the positive relation between trading volume and the aggregate market return may be as a result of a greater flow of information affecting stock prices when the aggregate return is positive than when it is negative.

2.8 Volume – Volatility Relations Of Stocks

There two theoretical explanations for the observed volume – volatility relations of stocks. These are, the sequential information arrival hypothesis (SIAH) of Copeland (1976), Jennings et al (1981) and Smirlock and Starks (1985); and the Mixture of Distribution Hypothesis (MDH) advanced by Clark (1973), Harris (1987) and Andersen (1996).

2.8.1 Sequential Information Arrival Hypothesis

SIAH assumes that traders receive new information in a sequential, random fashion. From an initial position of equilibrium where all traders posses the same set of information, new information arrives in the market and traders revise their expectation accordingly. However, traders to information are part of a series of incomplete equilibria. Once all traders have reacted to the information signal, a final equilibrium is reached.

2.8.2 Mixture Of Distribution Hypothesis

The MDH hypothesis implies an alternative volatility – Volume nexus, in which the relation is critically dependent upon the rate of information flow into the market. The model assumes that the joint distribution of volume and volatility is bi-variate normal condition upon arrival of information. All traders simultaneously receive the new price signals. As such, the shift to a new equilibrium is immediate and there will be no immediate partial.

This is contrary to the SIAH, which assumes that there are intermediate equilibria en route to the final equilibrium. Thus, under the MDH, there should be no information content in past volatility data that can be used to forecast volume (or vice versa) since

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these variables contemporaneously change in response to the arrival of new information.

2.9 Trading Volume – Conditional Volatility

Empirically, the bulk of the relation between volume and the signed market return is explained by variations in non-market volatility. There are two types of models of stock returns that produce an asymmetric relation between stock returns and stock return volatility. One has symmetric shocks and asymmetric time variation in conditional moments, and the other has asymmetric shocks. In the first type, the main idea is that stock returns have symmetric conditional distributions, but the conditional expectation of the market's return covaries with conditional non-market volatility. This is the spirit of the regime-switching GARCH model in Ang and Chen (2000). We can envision a return-generating process that switches between a state characterized by high-expected returns and high non-market volatility, and a state characterized by the reverse pattern.

The relation between market returns and non-market volatility tells us the increase in non-market volatility on a day when the market rises is not persistent, which is inconsistent with a regime-switching story. More directly, we can simply look at the ability of non-market volatility to predict one-day-ahead market returns. The predictive ability is not statistically significant for either industry-level or firm-level non-market volatility. Some other explanation is needed to account for the positive relation between the market's return and non-market volatility. Because there is a positive contemporaneous relation between the return on the market and non-market volatility, a univariate regression of the market's return on lagged non-market volatility produces a statistically significant positive relation. The reason is that lagged volatility picks up part of the serial correlation.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Population

The population of interest is all the companies listed at the Nairobi Stock Exchange during the period of the study (1998 to 2002). The listed companies were fifty-four (54).

3.2 Sample

A convenient sample of 20 companies, which constitute the NSE 20 Share Index was surveyed. The companies included in constituting the NSE 20 share index are large in size, actively trading and trade in huge volumes of shares as compared with the other listed companies.

3.3 Data Collection

The study relied entirely on secondary data, which was obtained from the records of companies quoted at the Nairobi Stock Exchange. Data for a period of five years, 1998 to 2002 was used. The data series therefore comprised of trading volumes, stock prices and dividends for each month.

3.4 Data Analysis

This paper analyzes the relationship between trading volumes and stock returns volatility. The variables that were used in this study are:

1. Stock returns
2. Trading volume
3. Volatility

Stock Returns

According to Gitman (2000), return is the total gain or loss experienced on an investment over a period of time. The expression for calculating Stock returns of each company were estimated using:

$$R_e = \frac{P_1 - P_0 + D}{P_0}$$

R_e – Stock returns

P_1 – closing price

P_0 – opening price

D - dividends

Return being change in stock price (capital gains) and dividends in relation to price at a time of reference (Original price). The daily returns were averaged to come up with monthly return.

Trading Volume

The volume, or market breadth, is measured in shares and tells you how meaningful the price movement in the market is. A large percentage of change in price accompanied by larger than normal volume is a solid indication of market strength in the direction of the change but large percentage increases in price accompanied by small trading volumes are less likely to indicate a market direction. Daily trading volume is measured three ways:

• The daily number of equity trades;
• The daily number of shares traded;
• The daily total Kenyan shilling value of shares traded.

In this research the daily number of shares was used for trading volume.

Volatility

Volatility refers to the degree to which price of a security, commodity or market rises and falls within a short term period (Mullins, 2000). Glen (1994) refers to volatility as the frequency and magnitude of price movement. Volatility is a measure of the range of an asset price about its mean level over a fixed amount of time (Abken and Nandi 1968).

For the market return volatility, the mean-adjusted monthly standard deviation based on the daily index returns was calculated. The daily index returns are calculated in the same way as the monthly returns. The expression for calculating Stock returns volatility of each company is estimated using:

$$\delta = \sqrt{\dfrac{\Sigma\{x - \overline{x}\}}{n-1}}$$

Where:

δ – Standard Deviation

x – Frequency

$\overline{x}$ – Mean

n – Number of Frequency

The advantage of using the mean-adjusted monthly standard deviation as a proxy for the market return volatility is that it is capable of truly reflecting the dispersion of the daily index returns from its monthly average.

Spur (1973) stated that when masses of numerical information are to be analyzed, some means of summarization must be found which reveals their major characteristics. Statistical analysis meets this need. It is a means of summarizing the essentials features and relationships of the data and then generalizing from these observations to determine broad patterns of behavior or future tendencies.

The technique used in this study was regression analysis. Regression analysis measures the pattern of relationship and the closeness of the relationship in absolute terms. Frequently, correlation analysis is used along with Regression Analysis to measure how well the regression line explains the variations of the dependent variable. The data (panel data) that was analyzed included trading volume and stock return for 20 companies (Appendix 2) that remained listed and traded over the five – years period, 1988 – 2002. A simple regression model $(RV_t = A + BV_t)$ was used to establish whether a relationship existed between trading volume and stock return volatility. This technique of analysis was significant as it revealed the Coefficients of

Determination (R^2) and Coefficients of Correlation (R) between the two variables under investigation. The hypothesis was tested at a 5% significant level while the strength of the regression model was put to the test using F-statistic as a measure.

Correlation analysis will be used to correlate the changes in stock returns volatility with those of trading volume. Correlation measures the degree of association between two variables, which are not necessarily independent. This technique will be used since it does not imply causation but rather shows how two variables move together.

The first step involved using a regression is to establish whether there exists a relationship between trading volume and return volatility for the companies. The first objective (to establish and document the relationship between trading volume and stock returns volatility) was achieved by determining the coefficient of Correlation and Coefficient of determination for all individual companies. The regression model is in the forms:

$$V_t = A + 0RV_t$$

Where:

A – Is the intercept of the regression model, which presents the trading volumes of a company.

B – Is the slope, which represents the degree in which the stock returns volatility of a company changes as the trading volume changes.

RVt – Stands for stock return volatility on day t.

Vt – Stands for trading volume on day t.

The second step entailed using F- test to determine the significance of the predictor model. The hypothesis was tested at 5% level of significance, which is sufficient for our confidence in the out come of the test. A coefficient of the predictor variable was

considered significant if it had a value greater or equal to the critical value under consideration.

The third step in investigating the relationship between trading volume and stock returns Volatility was calculated Correlation Coefficient (Corr) for all the companies in the sample.

The correlation model used is in the form:

Corr [Vt, RVt] = COV [Vt, RVt] / (SD[Vt] . SD[RVt])

RVt (Vt) – Stands for stock returns volatility (trading volume) on day t.

Cov – Denotes Covariance, and

SD - Abbreviates Standard deviation.

A positive Correlation (Corr) will imply that trading volume and stock returns volatility move in the same direction.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This section is presentation of the detailed data analysis that was carried out and includes the findings of the research.

The study proceeds to test for relations between Trading volume and Returns volatility. To construct the monthly trading volume and stock return volatility data, we hand-collect the daily data for the entire sample period, from 1998 to 2002. $(P_t - P_{t-1}) / P_{t-1}$ is used determine the monthly returns, and the mean-adjusted monthly standard deviation based on the daily index returns of the companies that constitute the 20 NSE share index to arrive at the returns volatility is calculated.

The results from regression, provides empirical evidence regarding the relationship among returns volatility and trading volume for the companies that constitute the 20 NSE share index. The coefficient of Correlation and Coefficient of determination for all individual companies is determined after which F- test is applied to determine the significance of the predictor model. The hypothesis is tested at 5% level of significance. Correlation Coefficient (Corr) is calculated for all the companies in the sample.

4.2 Return Volatility – Volume Analysis for 1998

Table 1:

Correlations

Correlations		RVt	Vt
Pearson Correlation	RVt	1.000	-0.029
	Vt	-0.029	1.000
Sig. (1-tailed)	RVt	.	0.343
	Vt	0.343	.
N	RVt	203	203
	Vt	203	203

Table 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.029	0.001	-0.004	4.619	0.001	0.164	1	201	0.686

a) **Predictors: (Constant), Vt**

The above tables (1 & 2) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for the year 1998. In this case $R^2 = 0.001$ implying that variability in stock return volatility is as a result of 0.1% changes in trading volume. The Correlation Coefficient = 0.029 implies that there is insignificant correlation between Trading Volume and Stock returns volatility for the year 1998. The results for R is positive this shows that Trading Volume and Stock returns volatility move in the same direction.

Table 3

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.494	1	3.494	0.164	0.686
	Residual	4288.823	201	21.337		
	Total	4292.317	202			

a)   **Predictors: (Constant), Vt**
b)   **Dependent Variable: RVt**

Table 4

Coefficients (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.567	0.327		10.899	0.000	2.922	4.213		
	Vt	-0.001	0.002	-0.029	-0.405	0.686	-0.004	0.003	1.000	1.000

a)   **Dependent Variable: RVt**

Tablets 3 and 4 provide evidence regarding the applicability and strength of the regression model – **RVt = A+BVt** where **RVt** stock return volatility, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F=0.163) and Sig.=0.686 tell us that this regression model insignificant in forecasting stock returns. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns volatility for the year 1998.

4.3 Return Volatility – Volume Analysis for 1999

Table 5

Correlations

Correlations		RVt	Vt
Pearson Correlation	RVt	1.000	-0.127
	Vt	-0.127	1.000
Sig. (1-tailed)	RVt	.	0.039
	Vt	0.039	.
N	RVt	193	193
	Vt	193	193

Table 6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	0.127	0.016	0.011	1.854	0.016	3.151	1	191	0.077

a) Predictors: (Constant), Vt

The above tables (5&6) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for the year 1999. In this case $R^2 = 0.016$ implying that variability in stock returns Volatility is as a result of 1.6% changes in trading volume. This figure is too small to suggest relationship between the two variables. There is insignificant correlation between Trading Volume and Stock returns volatility as R = 0.13. The fact that R is positive shows that Trading Volume and Stock returns volatility move in the same direction.

Table 7

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.833	1	10.833	3.151	0.077
	Residual	656.595	191	3.438		
	Total	667.428	192			

a   Predictors: (Constant), Vt
b   Dependent Variable: RVt

Table 8

Coefficients (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.847	0.139		13.290	0.000	1.573	2.121		
	Vt	-0.001	0.001	-0.127	-1.775	0.077	-0.002	0.000	1.000	1.000

a) **Dependent Variable: RVt**

Tablets 7 and 8 provide evidence regarding the applicability and strength of the regression model – **RVt =A+BVt** where **RVt** represents stock return volatility, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F =3.151) and Sig.= 0.077 tell us that this regression model is significant in forecasting stock returns volatility. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns volatility for the year 1999.

4.4 Return Volatility – Volume Analysis for 2000

Table 9

Correlations

Correlations		RVt	Vt
Pearson Correlation	**RVt**	1.000	0.126
	Vt	0.126	1.000
Sig. (1-tailed)	**RVt**	.	0.038
	Vt	0.038	.
N	**RVt**	197	197
	Vt	197	197

Table 10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.126	0.016	0.011	2.083	0.016	3.162	1	195	0.077

a) Predictors: (Constant), Vt

The above tables (9 & 10) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for the year 2000. In this case $R^2 = 0.011$ implying that variability in stock returns Volatility is as a result of 1.1% changes in trading volume. This figure is too small to suggest relationship between the two variables. There is insignificant correlation between Trading Volume and Stock returns volatility as R = 0.126. The fact that R is positive shows that Trading Volume and Stock returns volatility move in the same direction.

Table 11

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.713	1	13.713	3.162	0.077
	Residual	845.713	195	4.337		
	Total	859.425	196			

a   Predictors: (Constant), Vt
b   Dependent Variable: RVt

Table 12

Coefficients (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.397	0.152		9.194	2.57E-17	1.10E+00	1.70E+00		
	Vt	0.001	0.001	0.126	1.778	7.69E-02	-1.51E-04	2.92E-03	1.000	1.000

a) **Dependent Variable: RVt**

Tablets 11and 12 provide evidence regarding the applicability and strength of the regression model – **RVt= A+BVt** where **RVt** stock return volatility, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F=3.162) and Sig. 0.077 tell us that this regression model is useful in forecasting stock returns volatility. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns for the year 2000.

4.5 Return Volatility – Volume Analysis for 2001

Table 13

Correlations

Correlations		RVt	Vt
Pearson Correlation	RVt	1.000	-0.035
	Vt	-0.035	1.000
Sig. (1-tailed)	RVt	.	0.313
	Vt	0.313	.
N	RVt	199	199
	Vt	199	199

Table 14

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0.035	0.001	-0.004	1.096	0.001	0.237	1	197	0.627

The above tables (13 & 14) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for the year 2001. In this case $R^2 = 0.001$ implying that variability in stock returns Volatility is as a result of 1.0% changes in trading volume. This figure is too small to suggest relationship between the two variables. There is insignificant correlation between Trading Volume and Stock returns volatility as $R = 0.035$. The fact that R is positive shows that Trading Volume and Stock returns volatility move in the same direction.

Table 15

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.285	1	0.285	0.237	0.627
	Residual	236.654	197	1.201		
	Total	236.939	198			

a   **Predictors: (Constant), Vt**
b   **Dependent Variable: RVt**

Table 16

Coefficients (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.169	0.083		14.139	0.000	1.006	1.332		
	Vt	0.000	0.000	-0.035	-0.487	0.627	-0.001	0.001	1.000	1.000

Tablets 15 and 16 provide evidence regarding the applicability and strength of the regression model – **RVt =A+BVt** where **RVt** represents stock return volatility, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F=0.237) and Sig.= O.627 tell us that this regression model cannot be used in forecasting stock returns since it is 23.7% accurate. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns volatility for the year 2001.

4.6 Return Volatility – Volume Analysis for 2002

Table 17

Correlations

Correlations		RVt	Vt
Pearson Correlation	RVt	1.000	0.038
	Vt	0.038	1.000
Sig. (1-tailed)	RVt	.	0.298
	Vt	0.298	.
N	RVt	197	197
	Vt	197	197

Table 18

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.038	0.001	-0.004	4.237	0.001	0.281	1	195	0.597

a) Predictors: (Constant), Vt

The above tables (17 & 18) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for the year 2002. In this case $R^2 = 0.001$ implying that variability in stock returns Volatility is as a result of 1.0% changes in trading volume. This figure is too small to suggest relationship between the two variables. There is insignificant correlation between Trading Volume and Stock returns volatility as R = 0.038. The fact that R is positive shows that Trading Volume and Stock returns volatility move in the same direction.

Table 19

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.036	1	5.036	0.280	0.596
	Residual	3501.005	195	17.953		
	Total	3506.041	196			

a   **Predictors: (Constant), Vt**
b   **Dependent Variable: RVt**

Table 20

Coefficients (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.942	0.314		6.193	0.000	1.323	2.560		
	Vt	0.001	0.001	0.038	0.530	0.597	-0.002	0.003	1.000	1.000

a) Dependent Variable: RVt

Tablet 19 and 20 provide evidence regarding the applicability and strength of the regression model – **RVt = A+BVt** where **RVt** represents stock return, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F=0.028) and Sig.=0.596 tell us that this regression model is insignificant in forecasting stock returns. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns Volatility for the year 2002.

4.7 Return Volatility – Volume Analysis for 1988 - 2002

Table 21

Correlations

Correlations		RVt	Vt
Pearson Correlation	RVt	1.00	-0.02
	Vt	-0.02	1.00
Sig. (1-tailed)	RVt	.	0.26
	Vt	0.26	.
N	RVt	989	989
	Vt	989	989

Table 22

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.020	0.000	-0.001	3.223	0.0004	0.4127	1	987	0.521

a   Predictors: (Constant), Vt
b   Dependent Variable: RVt

The above tables (20 & 21) provide us with evidence regarding the Coefficient of Determination (R^2) and the Correlation (R) Coefficient for five years 1998 - 2002. In this case $R^2 = 0.000$ implying that variability in stock returns Volatility is as a result of 0.0% changes in trading volume. This figure is too small to suggest relationship between the two variables. There is insignificant correlation between Trading Volume and Stock returns volatility as R = 0.02. The fact that R is positive shows that Trading Volume and Stock returns volatility move in the same direction.

Table 23

Model Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.288	1	4.288	0.413	0.521
	Residual	10254.898	987	10.390		
	Total	10259.187	988			

a   **Predictors: (Constant), Vt**
b   **Dependent Variable: RVt**

Table 24

ANOVA (b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	2.011	0.106		18.946	1.53 E-22	1.803	2.220		
	Vt	0.000	0.000	-0.02	-0.642	5.21 E-01	-0.001	0.001	1.000	1.000

Tablets 22 and 23 provide evidence regarding the applicability and strength of the regression model – $RVt = A+BVt$ where **RVt** represents stock return, **Vt** represents trading volume, B is the slope, and A is constant. F –statistic was used to measure the strength of regression model. The results (F=0.413) and Sig.=0.521 tell us that this regression model is insignificant in forecasting stock returns. At a significant level of 5% we conclude that there is no relationship between trading volume and stock returns volatility for five year 1998 - 2002.

The general picture shown by the research findings is that no model can effectively be employed to focus return volatility. In all years under review (1998-2002) we are 95% sure that there is no relationship between trading volume and stock returns volatility.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section gives a summary of the entire research, conclusions based on the findings and recommends areas for further research.

5.1 Summary of findings and conclusions

Stocks being the major items of trade in the Nairobi Stock Exchange have to be looked at in depth. How return volatility affect trading volume is important to the players in the market. The study has been concerned with the relationship of Stock returns Volatility and Trading Volume for the period 1998 to 2002.

This study has employed the use of correlation coefficient, which describes the association between movements of two variables in this case, stock return volatility and trading Volume. It describes their movement either in the same direction positive association or in different direction negative association. This study has also employed the use of coefficient of determination, which shows how much the movement in one variable can be explained by the movements in the other in percentages. This coefficient shows the effect of one variable over another.

The results of the correlation between tock return volatility and trading Volume of different years as measured in the course of different months from 1998 to 2002 shows one can only show an association between stock return volatility and trading activity and not that one drives the other. However, the relationship in the long run, that is as measured over the five years, indicates that there is a positive relationship between tock return volatility and trading Volume.

5.1.2 Recommendations

The Nairobi Stock Exchange has been extensively researched and a lot more needs to be done to provide more information to stake holders, traders and the public at large. As seen earlier the stock exchange plays an important role in any countries development. A lot of information about this market needs to be known to attract more player and also for the existing player to commit more of their funds in the market to increase turnover. This study undertook to find the relationship between stock returns volatility and trading volumes. The results show that there is a positive relationship between the stock returns volatility and the trading volume. Different stock exchanges show different types of relations.

5.1.3 Limitation of the study

Carrying out research is not always a bed of roses. The researcher is constantly faced with challenges, which may, in one way or another, have an impact not only on the process itself, but also on the outcome of the research. Limitations of this study include: First, not all companies remained listed at the NSE over the period under study. Some were de-listed. This means that only those that remained listed over the research period could be included in the study.

Second, some listed firm did not trade for an entire year while others consistently traded over the entire research period. Those that did not trade for such a long periods were excluded from the study.

Third, preparing the data for analysis was more than a handful. This involved finding the standard deviation on daily returns before arriving at the return volatility for particular companies stock.

5.1.4 Suggested areas for further research

For more robust results further work is required in this area, which utilizes better proxy variables and is conducted at the intraday level before firm conclusions can be reached.

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.

In this time of modernized Information and Communication Technology (ICT) markets all over the world are gaining greater efficiency. ICT allows for more effective, faster means of information dissemination

Bearing in mind a researcher may feel the need to establish whether the recent adoption of electronic trading by the NSE has allowed for prices to adjust more quickly to news entering the market.

REFERENCES

1) Alessandro .B (2001) **"Determinants of the Implied Volatility Function on the Italian Stock Market" LEM Working Paper Series Laboratory of Economics and Management Sant'anna School of Advanced Studies, Pisa – Italy.**

2) Andersen, T.G. (1996) **"Return volatility and trading volume: An information flow interpretation of stochastic volatility".** *Journal of Finance* 51 (1): 169-204.

3) Ayako. D.M. (1995) '**An Emperical Investigation into the Relationship between Trading Volume and Stock Returns of Companies quoted at the NSE'. Unpublished Theses University of Nairobi.**

4) Bala .R and Yeung M (2001) **"The Causality Between Stock Returns and Exchange Rates:" Revisited, University of Nottingham, Malaysia Campus.**

5) Black. A and Patricia .F, (2000), **"US Stock Prices and Macroeconomic Fundamentals" Department of Accountancy and Finance University of Aberdeen, Scotland**.

6) Brailsford, T.J. (1996) **"The empirical relationship between trading volume, returns and volatility ".** *Accounting and Finance* 35 (1): 89-111.

7) Brock W.A.; Lebaron, B.D. (1996) **"A dynamic structural model for stock return volatility and trading volume".** *The Review of Economics and Statistics* 78 (1): 94-110.14.

8) Chao.C and Zhong-Guo.Z (2001),"Stock Returns, Volatility, and Trading Volume: Evidence from the Chinese Stock Markets" International Journal Of Business, 6(2), 2001 ISSN: 1083-4346 JEL: G12, G15.

9) Colm.K and Kevin.D (1998), "The Causes of Stock Market Volatility in Australia," Applied Financial Economics, 1998, pp597–605 University of Technology, Sydney, Australia.

10) Fama, E. F and French.K.R, (1989), Business Conditions and Expected Returns on Stocks and Bonds, Journal of Financial Economics 25, pp.23–49.

11) Giulio .C and Giovanna .P (2001), "The Impact of the Argentine Default on Volatility Co-Movements in Emerging Bond Markets" Dipartimento di Scienze Economiche, Università di Firenze

12) Grossman, S., Stiglitz, J., (1980). The Impossibility of Informationally Efficient Markets. American Economic Review 70, pp.393-408.

13) Harris.D and Martin K.H, (2002),"Financial Development and Stock Returns. A cross Country Analysis, Department of Economics (VWI) University of Bern.

14) Hui .G (2002), "Stock Market Returns, Volatility, and Future Output Changes in Economic Fundamentals. The Federal Reserve Bank of St. Louis.

15) Jennifer .P and Bruce.H, (2001) "Integration and the Asymmetric Transmission of Volatility: A Study of Equity Markets in Sub-Saharan Africa" Birkbeck, University of London.

16) John. K (2001), "Stock Market Volatility" FRBSF Economic Letter Number 2002-32, October 25, 2002.

17) Kagume. J.W. (1991) 'Determinants of Stock Market Prices in Kenya'. Unpublished Theses University of Nairobi.

18) Kariithi .J (2001) The Role of the Nairobi Stock Exchange in Kenya web site www.nse.com.

19) Mariana .M and Semmler.W (1998)"The Determinants of Stock Price Volatility: An Industry Study" JEL Classification: L11.

20) Mark .G and Tobias. J (2000), "Predicting Stock Price Movements From Past Returns: The Role of Consistency and Tax-Loss Selling" Journal of Financial Economics 00 (2003) 000-000 JEL classification: G11; G12; G14.

21) Ndugu.K (1997); "The Theoretical Relationship Between Share Price and Their Major Underlying determinants". Unpublished Theses University of Nairobi.

22) Odhiambo. O (1998),"Determining the Accuracy of The Nairobi Stock Exchange 20-Share Index" Electronic Publications from Nairobi University, Kenya. http://www.fiuc.org/iaup/sap.

23) Shamila. J.S (2002),"**Revisiting Stock Market Liberalization and Stock Returns: Some New Evidence from Emerging Market Economies, JEL Classification**: G14; G15.

24) leifer, A. and Vishny, R., (1997). **A Survey of Corporate Governance. Journal of Finance** Sh 52, pp.737- 783.

25) Singh, R. A. (1993), '**Response of Stock Prices to Money Supply Announcements: Australian Evidence**', Accounting and Finance, 33, pp. 43-59.

26) Tandesse, S. (2001), "**The Information and Monitoring Role of Capital Markets: Theory and International Evidence**" The University of South Carolina, JEL Classification: G3, G34, G14.

27) **International Evidence**" The University of South Carolina, JEL Classification: G3, G34, G14, E44, O16.

28) UK Bodie .Z, (1976), '**Common Stocks as a Hedge Against Inflation**', Journal of Finance, 31, pp. 459-470.

APPENDICES

Appendix 1: List Of The NSE 20 Share Index

	NAME OF COMPANY	CODE
1.	Bamburi Cement Ltd.	BAMBURI
2.	British American Tobacco Kenya	BAT
3.	Barclays Bank Ltd.	BBK
4.	BOC Kenya Ltd.	BOC
5.	Diamond Trust Bank Kenya	DTK
6.	East African Breweries Ltd.	EABL
7.	Firestone. E. A	FIRESTONE
8.	George Williamson Tea Kenya Ltd.	GWK
9.	Kakuzi Ltd.	KAKUZI
10.	Kenya Commercial Bank	KCB
11.	Kenya Airways	KQ
12.	Kenya Power & Lighting CO. Ltd	KPLC
13.	NIC Bank Ltd.	NIC
14.	National Media Group	NMG
15.	Sasini Tea & Coffee Ltd.	SASINI
16.	Standard Chartered Bank	STANCHART
17.	TPS Serena	SERENA
18.	Total Kenya Ltd.	TOTAL
19.	Uchumi Supermarket Ltd.	UCHUMI
20.	Unilever Tea Kenya Ltd.	UNILEVER

Appendix 2: Trading Volume And Stock Return Volatility Data

1998

Security	Pt	Vt	Pt+1	Vt+1	RVt	Vt
BAMBURI						
JAN	36.50	5,681	40.00	8,040	2.31	41.52
FEB	40.00	33,479	34.50	728	0.32	-97.83
MAR	36.00	1,766	40.00	385	2.70	-78.20
APR	39.50	300	32.00	4,837	4.83	1,512.33
MAY	30.00	75	33.00	4,353	5.64	5,704.00
JUN	35.25	960	35.00	750	4.91	-21.88
JUL	35.25	900	34.00	29	1.81	-96.78
AUG	30.00	2,650	35.00	5,000	6.80	88.68
SEP	28.00	2,269	34.00	1,350	4.54	-40.50
OCT	27.75	3,200	25.00	1,625	1.77	-49.22
NOV	28.00	500	30.00	8,461	2.54	1,592.20
DEC	26.00	5,000	28.00	198	5.11	-96.04
BAT						
JAN	50.00	750	53.00	100	3.97	-86.67
FEB	51.00	719	50.00	100	1.32	-86.09
MAR	50.00	100	45.00	670	3.27	570.00
APR	45.00	730	44.00	238	5.00	-67.40
MAY	44.00	2,459	45.00	550	7.33	-77.63
JUN	45.00	300	45.00	780	2.77	160.00
JUL	45.00	355	45.00	1,500	6.94	322.54
AUG	45.00	2,464	48.00	2,540	15.53	3.08
SEP	47.00	231	51.00	300	8.30	29.87
OCT	50.00	563	55.00	136	2.18	-75.84
NOV	55.00	6,000	56.00	804	17.88	-86.60
DEC	55.00	2,110	76.00	800	4.32	-62.09
BBK						
JAN	113.00	2,160	121.00	286	6.93	-86.76
FEB	115.00	190	113.00	837	0.00	340.53
MAR	126.00	319	95.00	411	4.28	28.84
APR	95.00	276	92.00	732	4.48	165.22
MAY	90.00	564	92.00	551	6.15	-2.30

MAY	90.00	564	92.00	551	6.15	-2.30
JUN	102.00	642	105.00	308	7.61	-52.02
JUL	100.00	744	97.00	223	2.19	-70.03
AUG	96.00	576	100.00	328	3.22	-43.06
SEP	100.00	370	97.00	993	21.21	168.38
OCT	97.00	225	98.00	288	2.17	28.00
NOV	99.00	403	99.00	202	24.03	-49.88
DEC	101.00	526	120.00	365	20.42	-30.61
BOC						
JAN	65.00	40	65.00	-	2.01	-100.00
FEB	65.00	750	69.00	500	2.02	-33.33
MAR	69.00	100	69.00	450	0.19	350.00
APR	69.00	1,870	68.00	1,250	3.33	-33.16
MAY	65.00	2,250	66.00	5,000	1.39	122.22
JUN	66.00	12,928	67.00	3,000	2.05	-76.79
JUL	58.00	183	70.00	22,050	0.39	11,949.18
AUG	68.00	400	68.00	250	3.70	-37.50
SEP	68.00	9,875	70.00	15,000	4.45	51.90
OCT	70.00	250	71.00	144	6.26	-42.40
NOV	71.00	4,000	71.00	850	3.77	-78.75
DEC	71.00	5,900	71.00	576	1.98	-90.24
DTK						
JAN	22.00	22,062	23.00	433	0.85	-98.04
FEB	22.00	4,400	22.00	197	0.76	-95.52
MAR	22.00	425	22.00	2,000	0.66	370.59
APR	20.00	300	20.00	275	1.89	-8.33
MAY	21.00	6,775	20.00	3,925	2.57	-42.07
JUN	23.00	325	23.00	11,301	2.41	3,377.23
JUL	22.00	1,953	20.00	7,031	1.78	260.01
AUG	20.00	5,000	20.00	500	2.60	-90.00
SEP	19.00	2,812	20.00	500	2.28	-82.22
OCT	20.00	1,250	19.00	916	0.73	-26.72
NOV	21.00	783	21.00	1,354	1.98	72.92
DEC	20.00	4,118	20.00	112	1.87	-97.28

EABL

JAN	49.00	29,338	48.00	700	10.23	-97.61
FEB	51.00	840	30.00	986	9.67	17.38
MAR	51.00	40	51.00	500	0.00	1,150.00
APR	51.00	1,000	49.00	-	14.43	-100.00
MAY	48.00	180	41.00	150	5.87	-16.67
JUN	50.00	155	52.00	270	6.42	74.19
JUL	47.00	840	54.00	160	14.86	-80.95
AUG	57.00	420	56.00	570	12.38	35.71
SEP	56.00	3,660	50.00	300	20.31	-91.80
OCT	47.00	660	52.00	500	12.57	-24.24
NOV	50.00	1,426	50.00	-	26.47	-100.00
DEC	51.00	500	54.00	1,845	18.61	269.00

FIRESTONE

JAN	24.00	300	25.00	300	0.91	0.00
FEB	29.00	1,961	25.00	445	0.27	-77.31
MAR	35.00	315	26.00	335	0.06	6.35
APR	19.00	650	18.00	300	0.48	-53.85
MAY	17.00	300	17.00	2,154	1.25	618.00
JUN	17.00	300	18.00	475	0.51	58.33
JUL	17.00	510	18.00	1,950	0.77	282.35
AUG	18.00	3,733	17.00	540	0.77	-85.53
SEP	17.00	3,000	16.00	5,322	0.57	77.40
OCT	16.00	500	16.00	875	0.37	75.00
NOV	15.00	1,000	15.00	875	0.34	-12.50
DEC	15.00	1,000	15.00	400	0.10	-60.00

GWK

JAN	137.00	200	143.00	1,000	1.54	-28.50
FEB	138.00	275	140.00	600	0.75	-49.09
MAR	140.00	600	140.00	1,500	1.69	-76.67
APR	141.00	731	141.00	731	1.69	-80.71
MAY	142.00	2,143	142.00	550	2.19	-93.37
JUN	145.00	300	143.00	650	0.90	-52.33
JUL	140.00	450	140.00	450	0.92	-68.89
AUG	110.00	675	115.00	170	3.43	-82.96
SEP	110.00	1,170	115.00	750	3.34	-90.17

OCT	115.00	425	110.00	1,170	2.45	-74.12
NOV	91.50	575	109.00	500	0.40	-81.04
DEC	93.00	500	90.00	80	0.17	-82.00

KAKUZI

JAN	96.00	5,899	110.00	200	0.43	-96.61
FEB	111.00	200	129.00	151	0.19	-24.50
MAR	129.00	1,300	130.00	200	0.47	-84.62
APR	130.00	1,250	130.00	110	1.79	-91.20
MAY	130.00	500	130.00	5,000	1.77	900.00
JUN	130.00	423	142.00	1,065	1.31	151.77
JUL	143.00	399	145.00	2,000	0.19	401.25
AUG	145.00	1,667	145.00	29,000	3.37	1,639.65
SEP	151.00	100	158.00	1,683	4.80	1,583.00
OCT	137.00	500	136.00	2,110	3.37	322.00
NOV	137.00	5,000	137.00	3,070	1.58	-38.60
DEC	134.00	150	140.00	192	0.33	28.00

KCB

JAN	77.00	325	88.00	175	3.51	-46.15
FEB	80.00	472	81.00	169	0.00	-64.19
MAR	80.00	312	79.00	3,977	3.35	1,174.68
APR	68.00	2,004	70.00	560	6.80	-72.06
MAY	70.00	269	65.00	406	7.07	50.93
JUN	71.00	516	70.00	635	3.38	23.06
JUL	70.00	863	71.00	640	1.14	-25.84
AUG	71.00	1,247	70.00	1,073	0.91	-13.95
SEP	70.00	10,410	65.00	4,654	2.60	-55.29
OCT	60.00	389	58.00	350	1.93	-10.03
NOV	59.00	428	59.00	327	4.02	-23.60
DEC	54.00	3,347	52.00	330	3.00	-90.14

KQ

JAN	7.38	34,381	7.90	946	0.70	-97.25
FEB	7.20	855	8.00	1,220	0.00	42.69
MAR	7.50	1,213	7.15	942	0.08	-22.34
APR	7.00	1,290	7.00	1,651	0.05	27.98

MAY	7.00	3,624	7.00	810	0.67	-77.65
JUN	6.80	739	7.00	1,803	0.20	143.98
JUL	7.00	1,831	8.12	964	0.13	-47.35
AUG	7.80	975	7.00	2,978	0.17	205.44
SEP	7.00	856	7.00	1,192	0.85	39.25
OCT	7.00	2,535	7.00	1,759	0.43	-30.61
NOV	7.00	1,889	7.20	1,461	0.31	-22.66
DEC	7.30	5,299	8.00	775	0.55	-85.37

KPLC

JAN	175.00	100	186.00	250	3.12	150.00
FEB	185.00	1,968	198.50	25,709	0.00	1,206.35
MAR	198.00	333	180.00	573	1.80	72.07
APR	182.00	100	166.00	312	2.20	212.00
MAY	167.00	2,088	180.00	649	5.21	-68.92
JUN	184.00	500	191.00	9,606	1.41	1,821.20
JUL	190.00	565	200.00	6,748	1.18	1,094.34
AUG	190.00	143	197.00	200	1.25	39.86
SEP	197.00	175	181.00	493	4.83	181.71
OCT	184.00	12,650	193.00	1,200	2.77	-90.51
NOV	190.00	800	110.00	17,064	7.81	2,033.00
DEC	116.00	234	125.00	2,366	5.50	911.11

NIC

JAN	40.50	6,125	37.75	2,818	2.10	-53.99
FEB	36.00	111	33.00	29,953	0.00	26,884.68
MAR	33.25	7,761	36.00	446	0.73	-94.25
APR	35.50	312	33.50	1,885	2.40	504.17
MAY	33.25	1,505	37.00	222	5.16	-85.25
JUN	37.00	428	30.50	791	2.17	84.81
JUL	30.75	851	27.25	642	1.51	-24.56
AUG	27.00	292	28.25	401	1.79	37.33
SEP	28.25	482	28.75	688	5.27	42.74
OCT	29.25	349	29.00	1,503	2.57	330.66
NOV	26.50	170	26.50	17,320	3.10	10,088.24
DEC	28.00	596	27.00	570	1.76	-4.36

NMG

JAN	138.00	187	136.00	625	6.00	234.22
FEB	136.00	162	140.00	3,750	0.00	2,214.81
MAR	139.00	966	136.00	850	2.25	-12.01
APR	135.00	174	136.00	48,175	5.75	27,586.78
MAY	134.00	87	120.00	87	4.47	0.00
JUN	100.00	360	130.00	3,374	2.77	837.22
JUL	130.00	1,575	130.00	150	1.72	-90.48
AUG	121.00	250	110.00	500	16.30	100.00
SEP	110.00	100,000	108.00	100	3.05	-99.90
OCT	108.00	725	107.00	187	2.88	-74.21
NOV	106.00	1,000	103.00	1,101	5.09	10.10
DEC	102.00	900	103.00	211	2.04	-76.56

SASINI

JAN	73.50	100	70.00	450	0.85	350.00
FEB	70.00	1,550	60.00	500	0.00	-67.74
MAR	60.00	1,250	58.00	30,000	0.24	2,300.00
APR	56.00	388	58.00	250	0.00	-35.57
MAY	58.00	250	52.00	200	1.62	-20.00
JUN	52.50	313	54.00	750	0.90	139.62
JUL	53.00	1,200	54.00	200	0.03	-83.33
AUG	54.00	28,600	57.50	560	0.42	-98.04
SEP	57.50	375	55.50	200	0.74	-46.67
OCT	71.50	145	52.00	750	2.48	417.24
NOV	52.00	100	38.00	50	1.26	-50.00
DEC	44.00	1,242	45.00	650	0.25	-47.67

SERENA

JAN	14.80	500	13.05	643	4.05	28.60
FEB	13.45	643	12.50	643	2.27	0.00
MAR	13.05	1,000	13.00	643	1.15	-35.70
APR	13.40	500	13.60	543	2.16	8.60
MAY	13.55	4,501	13.60	4,170	1.36	-7.35
JUN	13.55	643	13.65	643	1.93	0.00
JUL	13.65	400	14.00	1,785	2.26	346.25
AUG	14.10	400	14.50	642	2.46	60.50
SEP	14.50	642	16.20	500	1.77	-22.12

OCT	16.10	6,677	16.00	1,822	0.91	-72.71
NOV	16.05	1,000	16.25	642	1.47	-35.80
DEC	16.00	643	16.05	2,000	1.72	211.04

STANCHART

JAN	52.00	4,750	46.25	2,000	4.62	-57.89
FEB	45.25	1,050	47.00	20,950	0.79	1,895.24
MAR	47.25	350	46.25	500	1.79	42.86
APR	46.50	500	46.25	350	6.30	-30.00
MAY	46.50	2,400	46.50	2,400	4.29	0.00
JUN	46.75	250	46.00	3,050	1.53	1,120.00
JUL	51.00	100	50.00	700	1.50	600.00
AUG	64.00	7,200	55.00	2,300	5.54	2,200.00
SEP	55.00	2,100	55.00	700	16.04	-90.28
OCT	56.00	700	60.00	100	2.30	-95.24
NOV	59.00	28,664	55.50	350	13.49	-50.00
DEC	55.50	750	56.50	1,000	9.14	-96.51

TOTAL

JAN	49.00	21,992	50.00	1,300	2.59	-94.09
FEB	50.00	1,000	55.50	200	1.39	-80.00
MAR	55.00	10,000	46.00	2,500	2.29	-75.00
APR	45.00	600	47.00	45,642	1.98	7,507.00
MAY	47.00	1,000	46.25	200	3.72	-80.00
JUN	46.00	500	47.50	5,000	2.41	900.00
JUL	47.00	150	50.00	200	0.87	33.33
AUG	50.00	280	52.00	8,000	0.78	2,757.14
SEP	52.00	30,000	46.00	900	1.87	-97.00
OCT	46.00	2,000	48.00	4,000	0.71	100.00
NOV	48.00	20,000	48.25	200	0.39	-99.00
DEC	48.25	100	48.25	500	0.62	400.00

UCHUMI

JAN	44.00	2,750	46.00	450	4.18	-83.64
FEB	45.25	100	49.25	100	1.17	0.00
MAR	49.50	10,500	50.00	2,500	5.48	-76.19
APR	51.00	20,000	48.00	2,000	0.47	-90.00
MAY	48.00	300	48.25	1,000	6.05	233.33
JUN	48.25	100	48.25	1,500	0.39	1,400.00
JUL	49.00	500	51.00	100	0.63	-80.00
AUG	50.00	3,700	51.50	100	2.46	-97.30
SEP	51.50	750	46.50	1,625	1.42	116.67
OCT	47.00	500	39.25	500	1.85	0.00
NOV	40.00	500	39.00	50,000	0.51	9,900.00
DEC	39.00	350	40.00	1,500	1.15	328.57

1999

BAMBURI

JAN	37.00	200	37.00	1,469	1.54	634.50
FEB	37.00	20,000	31.00	250	2.13	-98.75
MAR	30.00	6,000	30.00	5,000	0.34	-16.67
APR	30.00	300	24.25	900	2.63	200.00
MAY	21.00	60	25.00	4,179	0.52	6,865.00
JUN	25.00	8,416	26.50	40,000	0.70	375.29
JUL	26.00	224	29.25	3,500	1.22	1,462.50
AUG	30.00	400	30.00	200	0.25	-50.00
SEP	30.00	500	26.25	700	1.54	40.00
OCT	26.00	250	26.50	200	0.45	-20.00
NOV	27.00	100	26.25	152	0.56	52.00
DEC	26.00	780	26.25	5,300	0.12	579.49

BAT

JAN	78.50	300	70.00	409	6.62	36.33
FEB	63.00	100	87.00	4,234	7.97	4,134.00
MAR	88.00	19,500	83.00	100	2.43	-99.49
APR	84.00	25,000	94.00	150	5.30	-99.40
MAY	95.00	25,000	96.00	308	1.38	-98.77
JUN	86.00	308	90.00	100	2.55	-67.53
JUL	80.00	500	80.00	146	8.84	-70.80
AUG	83.00	500	80.00	1,248	1.27	149.60
SEP	85.00	200	84.00	160	1.59	-20.00
OCT	84.00	120	80.00	618	2.76	415.00
NOV	75.00	100	80.00	1,500	1.91	1,400.00
DEC	75.00	100	75.00	154	0.77	54.00

BBK

JAN	128.00	1,000	123.00	1,267	5.05	26.70
FEB	124.00	972	120.00	560	3.64	-42.39
MAR	119.00	6,000	113.00	352	6.21	-94.13
APR	110.00	808	108.00	100	2.52	-87.62
MAY	106.00	100	109.00	360	1.61	260.00
JUN	108.00	3,000	114.00	180	1.72	-94.00
JUL	112.00	208	120.00	520	1.98	150.00
AUG	112.00	15,000	100.00	808	6.77	-94.61

SEP	98.00	159	101.00	100	2.84	-37.11
OCT	100.00	560	103.00	817	1.97	45.89
NOV	101.00	235	104.00	6,000	1.64	2,453.19
DEC	102.00	400	103.00	837	2.10	109.25

BOC

JAN	72.00	140	76.00	1,000	1.88	614.29
FEB	75.00	6,000	69.00	2,500	5.17	-58.33
MAR	70.00	500	71.00	4,350	0.38	770.00
APR	69.00	100	69.00	2,000	0.76	1,900.00
MAY	69.00	400	70.00	500	0.44	25.00
JUN	71.00	45,826	71.00	2,760	0.37	-93.98
JUL	71.00	84	72.00	800	1.11	852.38
AUG	78.00	11,970	70.00	1,000	0.49	-91.65
SEP	70.00	117	70.00	3,355	0.87	2,767.52
OCT	70.00	500	70.00	450	0.94	-10.00
NOV	68.00	200	67.00	600	0.98	200.00
DEC	68.00	100	68.00	300	1.22	200.00

DTK

JAN	22.00	1,375	25.25	800	1.06	-41.82
FEB	25.00	2,000	26.00	200	0.31	-90.00
MAR	26.00	100	25.00	2,500	0.42	2,400.00
APR	25.00	2,262	25.00	5,831	0.14	157.78
MAY	25.00	500	24.00	952	1.16	90.40
JUN	24.00	495	24.00	4,095	1.45	727.27
JUL	24.00	7,000	24.00	309	0.48	-95.59
AUG	24.00	29,637	20.00	6,981	1.57	-76.44
SEP	20.00	1,044	24.00	1,215	0.98	16.38
OCT	24.00	870	23.00	300	0.52	-65.52
NOV	23.00	18,720	23.00	1,000	0.60	-94.66
DEC	23.00	1,468	26.00	1,000	0.74	-31.88

EABL

JAN	65.00	540	60.00	1,799	2.20	233.15
FEB	61.00	100,000	65.00	6,459	3.55	-93.54
MAR	65.00	100,000	70.00	9,795	3.02	-90.21
APR	68.00	1,000	76.50	200	3.12	-80.00
MAY	76.00	150	79.00	529	2.27	252.67
JUN	78.50	1,200	78.50	236	1.34	-80.33
JUL	78.00	146	79.50	1,485	2.67	917.12
AUG	80.00	200	84.00	250,000	2.23	124,900.00
SEP	84.50	225	84.00	22,240	3.22	9,784.44
OCT	83.00	1,000	76.00	140	2.78	-86.00
NOV	74.00	100	70.00	128	3.24	28.00
DEC	70.00	282	70.00	150	1.30	-46.81

FIRESTONE

JAN	16.15	250	20.00	1,200	1.20	380.00
FEB	19.00	5,000	18.00	450	0.43	-91.00
MAR	18.00	3,400	16.00	300	0.85	-91.18
APR	16.00	250	17.00	2,150	0.40	760.00
MAY	17.00	180	17.00	150	0.25	-16.67
JUN	17.00	600	17.00	450	0.31	-25.00
JUL	17.00	100	17.00	500	0.12	400.00
AUG	17.00	42,350	17.00	450	1.08	-98.94
SEP	13.60	250	14.00	3,450	0.13	1,280.00
OCT	14.05	450	14.00	6,000	0.20	1,233.33
NOV	14.05	400	14.00	300	0.36	-25.00
DEC	14.00	200	16.00	250	0.60	25.00

GWK

JAN	137.00	200	143.00	1,000	2.70	400.00
FEB	138.00	275	140.00	600	2.09	118.18
MAR	140.00	600	140.00	1,500	0.00	150.00
APR	141.00	731	141.00	731	1.05	0.00
MAY	142.00	2,143	142.00	550	0.82	-74.34
JUN	145.00	300	143.00	650	1.05	116.67
JUL	140.00	450	140.00	450	0.92	0.00
AUG	110.00	675	115.00	170	12.50	-74.81
SEP	110.00	1,170	115.00	750	2.45	-35.90

OCT	115.00	425	110.00	1,170	2.14	175.29
NOV	91.50	575	109.00	500	0.00	-13.04
DEC	93.00	500	90.00	80	0.00	-84.00

KAKUZI

JAN	-	-	137.00	75	0.00	0.00
FEB	143.00	100	145.00	100,000	1.22	99,900.00
MAR	143.00	100	120.00	100,000	5.68	99,900.00
APR	132.00	2,700	118.00	1,544	4.62	-42.81
MAY	117.00	609	116.00	1,266	3.27	107.88
JUN	121.00	1,000	121.00	2,109	0.67	110.90
JUL	121.00	100	121.00	30,003	1.41	29,903.00
AUG	121.00	355	121.00	627	0.00	76.62
SEP	100.00	4,500	100.00	900	0.00	-80.00
OCT	100.00	50	100.00	249	0.49	398.00
NOV	100.00	444	90.50	6,123	4.65	1,279.05
DEC	87.00	1,535	87.00	190	0.00	-87.62

KCB

JAN	62.50	18,741	63.00	1,800	4.53	-90.40
FEB	63.00	10,200	60.00	10,000	2.11	-1.96
MAR	57.00	1,400	49.00	2,700	4.08	92.86
APR	49.00	1,000	45.00	600	2.15	-40.00
MAY	44.25	1,000	45.00	25,000	0.69	2,400.00
JUN	45.00	400	46.00	1,000	1.14	150.00
JUL	46.20	450	45.25	400	2.15	-11.11
AUG	45.50	1,000	40.00	150	3.82	-85.00
SEP	41.00	100	38.50	21,319	1.95	21,219.00
OCT	38.50	2,000	35.00	2,930	1.10	46.50
NOV	35.00	5,000	36.00	100	2.39	-98.00
DEC	36.00	2,634	31.50	2,700	1.94	2.51

KQ

JAN	8.40	1,412	8.00	1,000	0.43	-29.18
FEB	7.60	35,103	7.50	1,000	0.13	-97.15
MAR	7.50	500	7.70	37,000	0.19	7,300.00
APR	7.80	3,000	7.80	3,228	0.13	7.60
MAY	8.00	500	8.00	1,000	0.07	100.00

JUN	8.50	4,036	8.00	500,000	0.23	12,288.50
JUL	8.30	600	8.20	3,000	0.63	400.00
AUG	6.50	200	6.00	1,018	0.28	409.00
SEP	6.00	2,018	6.00	1,000	0.21	-50.45
OCT	6.30	500	6.30	3,516	0.18	603.20
NOV	6.50	1,000	7.10	2,000	0.57	100.00
DEC	8.00	1,000,000	7.80	5,036	0.07	-99.50

KPLC

JAN	125.00	1,500	130.00	60,000	7.97	3,900.00
FEB	130.00	58,458	130.00	2,500	4.18	-95.72
MAR	130.00	270	116.00	243	6.48	-10.00
APR	116.00	150	119.00	100	2.39	-33.33
MAY	119.00	200	114.00	300	2.05	50.00
JUN	115.00	363	113.00	7,000	1.29	1,828.37
JUL	113.00	4,000	113.00	876	1.61	-78.10
AUG	113.00	257	100.00	100	2.76	-61.09
SEP	105.00	500	90.00	18,504	2.26	3,600.80
OCT	98.00	600	80.00	100	7.13	-83.33
NOV	80.00	100	84.00	150	1.25	50.00
DEC	86.50	100	96.00	150	2.83	50.00

NIC

JAN	40.50	6,125	35.75	262	4.20	-95.72
FEB	36.00	111	33.00	300	0.96	170.27
MAR	33.25	100	36.00	1,487	1.65	1,387.00
APR	35.50	1,000	33.50	200	2.08	-80.00
MAY	33.25	468	37.00	1,000	1.72	113.68
JUN	37.00	41,190	30.50	237	2.65	-99.42
JUL	3.08	468	27.25	190	1.55	-59.40
AUG	27.00	312	28.25	150	0.97	-51.92
SEP	28.25	200	29.00	1,000	0.95	400.00
OCT	28.50	312	29.00	15,625	0.80	4,908.01
NOV	29.25	1,250	26.50	820	1.40	-34.40
DEC	26.50	1,500	27.00	781	0.97	-47.93

NMG

JAN	138.00	187	136.00	625	5.53	234.22
FEB	136.00	162	140.00	3,750	2.52	2,214.81
MAR	139.00	966	136.00	850	0.00	-12.01
APR	135.00	174	136.00	48,175	1.43	27,586.78
MAY	134.00	87	120.00	87	7.23	0.00
JUN	100.00	360	130.00	3,374	4.57	837.22
JUL	130.00	1,575	130.00	150	3.68	-90.48
AUG	121.00	250	110.00	500	7.67	100.00
SEP	110.00	100,000	108.00	100	1.86	-99.90
OCT	108.00	725	107.00	187	1.28	-74.21
NOV	106.00	1,000	103.00	1,101	2.15	10.10
DEC	102.00	900	103.00	211	0.76	-76.56

SASINI

JAN	73.50	514	70.00	450	1.76	-12.45
FEB	70.00	200,000	60.00	500	3.27	-99.75
MAR	60.00	300	58.00	30,000	1.28	9,900.00
APR	56.00	600	58.00	250	0.97	-58.33
MAY	58.00	1,750	52.00	200	2.83	-88.57
JUN	52.50	1,000	54.00	750	0.70	-25.00
JUL	53.00	195	54.00	200	0.50	2.56
AUG	54.00	259	57.50	560	0.93	116.22
SEP	57.50	750	55.50	200	1.05	-73.33
OCT	71.50	400	52.00	750	4.37	87.50
NOV	52.00	100	38.00	50	3.53	-50.00
DEC	44.00	50,000	45.00	650	0.49	-98.70

SERENA

JAN	14.80	500	13.05	643	1.90	28.60
FEB	13.45	643	12.50	643	0.62	0.00
MAR	13.05	1,000	13.00	643	0.58	-35.70
APR	13.40	500	13.60	543	0.20	8.60
MAY	13.55	4,501	13.60	4,170	0.06	-7.35
JUN	13.55	643	13.65	643	0.27	0.00
JUL	13.65	400	14.00	1,785	0.21	346.25
AUG	14.10	642	14.50	642	0.10	0.00
SEP	14.50	6,677	16.20	500	0.61	-92.51

OCT	16.10	1,000	16.00	1,822	0.04	82.20
NOV	16.05	500	16.25	642	0.18	28.40
DEC	16.00	643	16.05	2,000	0.11	211.04

STANCHART

JAN	52.00	4,750	46.00	2,000	3.58	-57.89
FEB	45.00	1,050	47.00	20,950	1.16	1,895.24
MAR	47.00	350	46.00	500	1.00	42.86
APR	46.00	500	45.00	350	0.52	-30.00
MAY	46.00	2,400	48.00	2,400	1.55	0.00
JUN	48.00	250	49.00	3,050	0.98	1,120.00
JUL	50.00	100	53.00	700	1.37	600.00
AUG	54.00	7,200	55.00	2,300	0.90	2,200.00
SEP	54.00	2,100	56.00	700	0.51	-90.28
OCT	55.00	700	58.00	100	1.34	-95.24
NOV	58.00	28,664	55.00	350	1.64	-50.00
DEC	55.00	750	56.00	1,000	0.49	-96.51

TOTAL

JAN	49.00	21,992	50.00	1,300	2.77	-94.09
FEB	50.00	1,000	55.50	200	4.81	-80.00
MAR	55.00	10,000	46.00	2,500	3.32	-75.00
APR	45.00	600	47.00	45,642	0.59	7,507.00
MAY	47.00	1,000	46.25	200	0.56	-80.00
JUN	46.00	500	47.00	5,000	0.21	900.00
JUL	47.00	150	50.00	200	0.90	33.33
AUG	50.00	280	52.00	8,000	0.78	2,757.14
SEP	52.00	30,000	46.00	900	1.97	-97.00
OCT	46.00	2,000	48.00	4,000	1.18	100.00
NOV	48.00	20,000	48.00	200	0.23	-99.00
DEC	48.25	100	48.00	500	0.35	400.00

UCHUMI

JAN	44.00	2,750	46.00	450	0.69	-83.64
FEB	45.25	100	49.25	100	1.45	0.00
MAR	49.50	10,500	50.00	2,500	0.76	-76.19
APR	51.00	2,000	48.00	2,000	1.13	0.00
MAY	48.00	300	48.25	1,000	0.57	233.33
JUN	48.25	100	48.25	1,500	0.44	1,400.00
JUL	49.00	500	51.00	100	0.67	-80.00
AUG	50.00	3,700	51.50	100	0.49	-97.30
SEP	51.50	750	46.50	1,625	1.62	116.67
OCT	47.00	500	39.25	500	2.46	0.00
NOV	40.00	500	39.00	50,000	0.87	9,900.00
DEC	39.00	350	40.00	1,500	0.79	328.57

2000

BAMBURI

JAN	26.50	1,000	26.25	1,200	0.395	20.00
FEB	26.00	1,100	26.00	1,000	0.188	-9.09
MAR	26.50	1,492	27.50	600	0.555	-59.79
APR	27.00	300	26.50	1,500	0.423	400.00
MAY	28.00	24,000	28.50	11,021	1.973	-54.08
JUN	28.50	489	29.25	500	0.666	2.25
JUL	28.75	909	32.00	94,000	1.362	10,241.03
AUG	32.00	9,000	32.00	5,000	0.437	-44.44
SEP	32.50	234	32.50	749,997	0.217	320,411.54
OCT	32.50	78,375	34.00	780	0.511	-99.00
NOV	33.75	100	33.25	300	0.637	200.00
DEC	33.00	500	33.75	2,357	0.216	371.40

BAT

JAN	75.00	618	50.00	100	1.577	-83.82
FEB	73.00	150	51.00	290	6.961	93.33
MAR	100.00	400	46.00	100	17.564	-75.00
APR	65.00	1,248	47.00	366	1.616	-70.67
MAY	63.00	100	61.00	100	1.691	0.00
JUN	60.00	200	57.00	10,000	1.665	4,900.00
JUL	57.00	133	60.00	30,000	0.979	22,456.39
AUG	60.00	40,000	64.00	410	1.645	-98.98
SEP	65.00	400	70.00	200	2.907	-50.00
OCT	70.00	166	71.00	133	1.003	-19.88
NOV	68.00	75	67.00	400	1.575	433.33
DEC	69.00	425	60.50	282	3.977	-33.65

BBK

JAN	103.00	837	102.00	582	1.830	-30.47
FEB	102.00	100	115.00	972	7.882	872.00
MAR	115.00	150	92.00	1,700	10.257	1,033.33
APR	90.00	10,208	90.00	100	0.986	-99.02
MAY	89.00	240	87.00	1,118	1.032	365.83
JUN	88.00	1,384	86.50	420	1.233	-69.65
JUL	85.50	666	82.50	500	1.438	-24.92

AUG	82.00	969	87.00	452	1.951	-53.35
SEP	86.50	300	89.00	1,166	1.519	288.67
OCT	89.50	12,490	97.50	447	3.240	-96.42
NOV	97.00	450	81.00	3,020	5.336	571.11
DEC	81.50	100	76.00	462	7.718	362.00

BOC

JAN	64.00	900	64.00	600	0.000	-33.33
FEB	64.00		64.00	500	0.000	0.00
MAR	65.00	200	66.00	200	0.643	0.00
APR	64.50	500	63.00	1,500	0.731	200.00
MAY	60.00	80	50.50	2,500	4.505	3,025.00
JUN	49.00	300	47.50	100	2.030	-66.67
JUL	47.00	1,624	48.25	100	0.540	-93.84
AUG	46.50	500	41.00	17,398	1.865	3,379.60
SEP	42.00	1,400	43.00	2,408	2.200	72.00
OCT	43.00	100	44.00	100	0.471	0.00
NOV	44.00	6,312	44.50	188	0.250	-97.02
DEC	47.25	200	47.25		0.000	-100.00

DTK

JAN	25.50	999	25.00	29,904	0.333	2,893.39
FEB	25.00	200	28.00	5,000	0.702	2,400.00
MAR	28.00	6,500	26.75	300	0.370	-95.38
APR	26.50	1,718	25.00	7,493	0.960	336.15
MAY	24.25	911	21.25	10,000	1.720	997.69
JUN	21.25	300	20.00	4,342	0.615	1,347.33
JUL	20.50	1,000	20.75	100	0.829	-90.00
AUG	19.05	650	18.00	11,791	0.805	1,714.00
SEP	18.00	5,280	15.00	10,617	1.231	101.08
OCT	16.00	2,000	16.00	129	0.276	-93.55
NOV	16.00	540	14.50	500	0.428	-7.41
DEC	14.30	1,500	14.00	500	0.141	-66.67

EABL

JAN	70.00	100	66.50	532	1.839	432.00
FEB	66.00	500	70.00	922	2.989	84.40
MAR	70.50	120	70.00	10,000	2.858	8,233.33
APR	70.00	15,000	69.00	300	2.033	-98.00
MAY	70.00	400	67.00	2,381	1.685	495.25
JUN	65.00	7,789	66.00	100	2.225	-98.72
JUL	66.00	140	68.00	4,000	3.421	2,757.14
AUG	68.50	855	76.00	858	4.229	0.35
SEP	77.00	100	79.00	209	2.145	109.00
OCT	80.00	34,086	80.00	2,181	2.437	-93.60
NOV	80.00	256	81.00	6,000	4.953	2,243.75
DEC	78.00	140	74.50	1,000	2.866	614.29

FIRESTONE

JAN	16.00	450	16.00	1,300	0.194	188.89
FEB	16.00	900	12.90	1,300	1.071	44.44
MAR	12.50	3,750	12.70	900	0.275	-76.00
APR	12.70	450	12.50	250	0.149	-44.44
MAY	12.25	780	11.70	200	0.413	-74.36
JUN	12.00	1,020	13.00	1,800	0.380	76.47
JUL	13.00	100	12.00	1,500	0.284	1,400.00
AUG	12.00	1,260	11.05	650	0.401	-48.41
SEP	11.65	300	12.00	2,400	0.261	700.00
OCT	12.15	4,900	12.50	600	0.126	-87.76
NOV	12.65	500	12.00	300	0.183	-40.00
DEC	12.00	400	11.70	1,200	0.145	200.00

GWK

JAN	93.00	175	93.00	225	0.866	28.57
FEB	93.00	410	90.00	1,300	2.281	217.07
MAR	87.50	300	87.00	500	0.175	66.67
APR	90.00	51,700	90.00	500	1.426	-99.03
MAY	83.00	150	81.00	100	2.193	-33.33
JUN	76.00	500	77.00	200	0.898	-60.00
JUL	68.00	450	59.00	450	0.471	0.00
AUG	65.00	1,000	63.00	350	3.429	-65.00
SEP	91.00	1,000	82.50	200	3.336	-80.00

OCT	91.00	500	90.00	200	4.304	-60.00
NOV	90.50	100	90.00	125	0.400	25.00
DEC	97.00	200	94.00	450	2.291	125.00

KAKUZI

JAN	91.50	389	98.00	1,000	2.194	157.07
FEB	97.50	4,500	80.00	500	7.651	-88.89
MAR	70.00	1,929	70.00	1,000	0.208	-48.16
APR	71.50	200	69.00	100	1.493	-50.00
MAY	67.00	1,000	67.00	-	0.000	-100.00
JUN	67.00	200	64.00	95	1.068	-52.50
JUL	63.50	165	63.00	26,475	25.550	15,945.45
AUG	-	-	-	-	-	-
SEP	61.50	2,000	55.00	2,000	2.512	0.00
OCT	56.00	1,750	52.00	84,455	3.867	4,726.00
NOV	54.00	1,000	55.00	1,000	0.582	0.00
DEC	55.00	1,700	55.00	1,441	0.000	-15.24

KCB

JAN	32.00	649	32.25	200	1.070	-69.18
FEB	35.50	400	32.00	300	1.301	-25.00
MAR	31.50	100	25.00	500	1.934	400.00
APR	27.00	500	28.00	350	1.234	-30.00
MAY	26.00	300	28.00	2,000	1.460	566.67
JUN	28.25	975	28.50	1,950	0.719	100.00
JUL	28.25	1,000	24.00	200	1.670	-80.00
AUG	24.25	1,100	25.00	100	0.810	-90.91
SEP	25.00	5,440	27.50	500	0.497	-90.81
OCT	27.00	500	28.00	11,367	0.721	2,173.40
NOV	29.00	90,000	28.25	500	0.559	-99.44
DEC	28.25	1,000	25.50	500	3.116	-50.00

KQ

JAN	7.90	600	7.60	300	0.156	-50.00
FEB	7.70	500	7.10	7,000	0.495	1,300.00
MAR	7.10	2,250	7.65	2,000	0.188	-11.11
APR	7.75	400	7.70	10,000	0.101	2,400.00
MAY	7.70	500	8.20	1,000	1.240	100.00

JUN	8.50	500	7.95	1,000	0.153	100.00
JUL	8.00	2,018	7.10	500	0.348	-75.22
AUG	7.10	500	8.25	14,500	0.423	2,800.00
SEP	8.20	15,172	8.80	1,000	0.196	-93.41
OCT	8.75	7,000	9.00	2,000	0.119	-71.43
NOV	9.00	123,698	8.90	200	0.211	-99.84
DEC	8.85	4,000	9.00	1,000	0.085	-75.00

KPLC

JAN	92.50	603	93.50	2,046	0.642	239.30
FEB	94.50	410	91.50	243	1.746	-40.73
MAR	90.00	12,500	88.00	500	1.735	-96.00
APR	88.50	1,335	78.00	500	4.342	-62.55
MAY	78.50	200	51.00	500	10.206	150.00
JUN	50.50	243	51.50	225	0.507	-7.41
JUL	52.00	603	50.50	100	1.522	-83.42
AUG	52.00	100	47.25	100	1.540	0.00
SEP	47.00	100	44.00	4,000	0.915	3,900.00
OCT	45.00	500	41.00	3,400	3.674	580.00
NOV	42.25	243	44.75	750	1.243	208.64
DEC	44.25	5,000	40.00	200	2.451	-96.00

NIC

JAN	26.75	252	26.50	1,516	1.092	501.59
FEB	26.50	15,257	26.00	711	0.537	-95.34
MAR	26.50	390	27.00	500	0.560	28.21
APR	27.50	17,031	27.00	704	0.444	-95.87
MAY	27.50	17,029	27.75	2,772	0.747	-83.72
JUN	27.75	116	23.00	7,000	2.530	5,934.48
JUL	20.75	390	25.00	476	1.959	22.05
AUG	25.25	390	26.25	585	2.735	50.00
SEP	26.50	100	24.50	625	2.747	525.00
OCT	24.00	687	23.00	2,500	1.303	263.90
NOV	24.00	5,127	20.00	701	1.648	-86.33
DEC	20.50	600	17.75	390	1.666	-35.00

NMG

JAN	102.00	100	93.00	150	0.075	50.00
FEB	92.00	400	90.50	100	0.473	-75.00
MAR	91.00	400	88.00	100	0.113	-75.00
APR	90.00	100	74.00	62	0.111	-38.00
MAY	74.00	108	74.50	650	0.170	501.85
JUN	74.00	110	75.00	500	0.216	354.55
JUL	75.00	4,124	75.00	1,500	0.204	-63.63
AUG	75.00	375	69.00	375	0.061	0.00
SEP	75.00	35,000	68.00	750	0.083	-97.86
OCT	67.00	135	71.00	20,000	0.333	14,714.81
NOV	70.00	200	71.00	12,078	0.471	5,939.00
DEC	71.00	20,000	69.00	100	0.373	-99.50

SASINI

JAN	40.00	200	45.25	160	2.035	-20.00
FEB	45.00	200	36.00	155	2.544	-22.50
MAR	35.00	80,000	35.50	79,965	0.544	-0.04
APR	35.00	1,000	31.75	965	2.335	-3.50
MAY	33.00	5,000	37.50	4,967	1.929	-0.66
JUN	37.50	100	36.25	63	0.765	-37.50
JUL	35.00	1,550	34.00	1,515	0.565	-2.26
AUG	34.50	1,000	34.00	966	0.550	-3.45
SEP	34.00	165	34.75	131	1.014	-20.61
OCT	34.00	450	34.00	416	0.544	-7.56
NOV	34.25	2,250	36.00	2,216	0.000	-1.52
DEC	35.25	2,000	34.50	1,965	0.000	-1.76

STANCHART

JAN	56.50	700	57.50	350	0.746	-50.00
FEB	57.50	100	77.00	8,800	8.650	8,700.00
MAR	75.00	1,500	53.00	300	13.011	-80.00
APR	53.00	6,400	49.50	300	1.514	-95.31
MAY	48.50	2,100	48.00	3,350	0.426	59.52
JUN	47.50	45,007	48.00	700	0.959	-98.44
JUL	48.00	175	51.00	3,650	1.264	100.00
AUG	52.00	5,750	54.50	350	1.037	-98.26
SEP	54.00	3,000	55.50	100	0.723	-91.67

OCT	55.00	2,100	55.50	250	0.489	-52.38
NOV	55.00	175	49.50	1,000	1.974	300.00
DEC	49.50	500	49.50	700	4.151	-100.00
MAR	43.00	750	43.25	707	1.911	-5.73
	49.00	13,935	44.00	13,882	0.743	-0.27

SERENA

JAN	16.05	643	16.20	100	0.070	-84.45
FEB	16.25	100	16.20	2,829	0.070	2,729.00
MAR	16.25	643	17.95	150	0.265	-76.67
APR	16.70	300	17.00	642	0.673	114.00
MAY	16.70	643	16.20	642	0.286	-0.16
JUN	16.20	500	16.00	320	0.084	-36.00
JUL	16.00	500	16.00	643	0.020	28.60
AUG	16.30	1,000	17.10	500	0.398	-50.00
SEP	17.00	500	16.40	500	0.461	0.00
OCT	16.55	500	16.50	643	0.162	28.60
NOV	16.55	643	16.70	642	0.094	-0.16
DEC	16.60	500	15.80	642	0.000	28.40

TOTAL

JAN	48.25	200	49.00	1,000	0.381	400.00
FEB	49.00	3,000	65.00	500	5.540	-83.33
MAR	57.00	1,000	49.25	1,000	2.593	0.00
APR	52.00	220	49.00	800	0.761	263.64
MAY	49.25	100	49.50	3,700	0.684	3,600.00
JUN	49.25	1,300	51.00	450	1.153	-65.38
JUL	55.00	400	55.00	14,000	1.364	3,400.00
AUG	55.00	800	56.50	100	0.634	-87.50
SEP	56.50	500	56.50	200	0.437	-60.00
OCT	56.50	200	57.00	400	0.621	100.00
NOV	57.00	1,000	57.50	200	0.664	-80.00
DEC	57.00	200	55.00	3,000	0.000	1,400.00

UCHUMI

JAN	40.25	150	40.25	110	0.453	-26.83
FEB	40.75	110	43.50	69	0.950	-37.05
MAR	43.00	750	43.25	707	1.911	-5.73
APR	43.00	15,925	44.00	15,882	0.743	-0.27
MAY	43.50	3,000	43.00	2,957	0.757	-1.45
JUN	42.50	150	43.00	108	0.408	-28.33
JUL	42.50	150	42.00	108	0.577	-28.33
AUG	41.00	1,000	44.25	959	1.034	-4.10
SEP	44.50	350	45.25	306	0.476	-12.71
OCT	46.00	100	50.00	54	1.262	-46.00
NOV	50.00	100	46.75	50	1.673	-50.00
DEC	46.25	27,053	49.00	27,007	0.757	-0.17

2001

BAMBURI

JAN	34.00	600	35.00	420	0.40	-30.00
FEB	35.00	1,000	31.00	300	1.66	-70.00
MAR	30.00	439	28.00	2,000	0.71	355.58
APR	28.00	250	28.00	50,360	0.63	20,044.00
MAY	28.00	35,952	28.00	2,040	0.00	-94.33
JUN	28.00	100	28.00	16,405	1.27	16,305.00
JUL	28.00	439	28.00	450	1.69	2.51
AUG	27.00	513	25.00	250	0.98	-51.27
SEP	23.00	250	23.00	1,000	0.44	300.00
OCT	22.00	4,000	23.00	250	0.64	-93.75
NOV	21.00	4,150	20.00	15,076	2.06	263.28
DEC	18.00	1,100	17.00	2,000	0.53	81.82

BAT

JAN	64.50	300	65.00	1,664	0.83	454.67
FEB	65.50	144	63.00	50,000	2.82	34,622.22
MAR	63.00	1,658	58.00	10,000	1.47	503.14
APR	58.00	520	56.00	800	1.61	53.85
MAY	56.00	310	55.00	500	1.21	61.29
JUN	56.00	416	55.00	50,000	0.63	11,919.23
JUL	55.00	633	55.00	5,618	0.70	787.52
AUG	50.50	40,000	47.50	500	1.30	-98.75
SEP	47.50	500	47.25	500	1.02	0.00
OCT	47.25	199	50.00	100	2.02	-49.75
NOV	48.25	294	51.00	200	0.74	-31.97
DEC	52.50	100	49.50	266	1.55	166.00

BBK

JAN	75.50	737	75.00	614	3.00	-16.69
FEB	72.50	1,166	80.00	5,021	2.03	330.62
MAR	80.00	10,000	80.00	33,595	2.46	235.95
APR	80.00	2,530	72.00	1,846	2.31	-27.04
MAY	72.50	837	73.00	272	1.63	-67.50
JUN	73.50	180	83.50	40,000	2.85	22,122.22
JUL	85.00	137,303	81.50	487	1.31	-99.65
AUG	82.00	300	77.00	166,725	2.27	55,475.00

SEP	78.00	100	71.00	350	1.87	250.00
OCT	71.00	483	75.00	178	3.12	-63.15
NOV	74.00	297	75.50	900	1.36	203.03
DEC	75.50	600	73.00	121	1.49	-79.83

BOC

JAN	47.50	1,000	47.00	1,080	0.20	8.00
FEB	46.50	550	46.00	200	0.25	-63.64
MAR	44.50	168	42.00	300	0.90	78.57
APR	42.00	150	40.00	100	1.00	-33.33
MAY	40.00	500	32.50	100	3.01	-80.00
JUN	30.00	150	31.00	1,800	1.26	1,100.00
JUL	31.00	1,000	30.00	300	0.41	-70.00
AUG	30.50	1,775	31.00	200	0.24	-88.73
SEP	30.00	400	30.00	200	0.35	-50.00
OCT	30.00	1,720	28.00	400	0.80	-76.74
NOV	28.00	880	30.00	30,000	0.70	3,309.09
DEC	30.25	399	30.00	10,000	0.61	2,406.27

DTK

JAN	14.45	2,000	13.75	200	0.57	-90.00
FEB	13.00	4,990	14.05	1,000	0.32	-79.96
MAR	13.70	5,000	13.00	10,717	0.24	114.34
APR	13.30	35,000	13.00	130	0.09	-99.63
MAY	13.00	160	11.70	125	0.49	-21.88
JUN	13.00	1,125	11.50	99,999	0.19	8,788.80
JUL	11.05	625	11.00	1,875	0.03	200.00
AUG	10.95	784	11.00	140	0.09	-82.14
SEP	11.00	100	10.50	363	0.25	263.00
OCT	9.45	18,750	9.00	537,057	0.45	2,764.30
NOV	9.50	125	9.00	120,000	0.18	95,900.00
DEC	9.30	27,608	9.00	140,000	0.21	407.10

EABL

JAN	75.00	502	76.50	8,892	1.68	1,671.31
FEB	76.00	182	79.50	300	1.96	64.84
MAR	80.50	100	81.00	1,000	1.77	900.00
APR	80.50	25,000	79.05	712	2.96	-97.15

MAY	79.00	517	76.00	377	2.72	-27.08
JUN	77.00	700	79.50	1,000	2.30	42.86
JUL	79.50	1,343	81.50	261	2.35	-80.57
AUG	81.50	316	80.00	1,000	5.31	216.46
SEP	81.00	2,140	82.50	1,371	1.91	879.29
OCT	80.00	87	84.50	460	2.02	428.74
NOV	81.50	118	77.00	529	2.95	348.31
DEC	77.00	1,471	74.00	2,000	1.44	35.96

FIRESTONE

JAN	11.70	1,500	10.00	750	0.71	-50.00
FEB	10.00	550	8.35	450	0.56	-18.18
MAR	8.30	19,000	8.00	200	0.08	-98.95
APR	7.50	4,580	7.20	1,000	0.12	-78.17
MAY	7.00	1,000	7.00	450	0.07	-55.00
JUN	7.05	700	7.00	6,500	0.08	828.57
JUL	7.00	1,000	7.25	200	0.07	-80.00
AUG	7.10	300	7.10	450	0.17	50.00
SEP	7.55	250	6.40	150	0.56	-40.00
OCT	6.55	1,700	7.85	700	0.51	-58.82
NOV	7.50	27,725	7.00	700	0.21	-97.48
DEC	7.15	200	7.00	750	0.04	275.00

GWK

JAN	96.50	500	98.00	1,000	1.54	100.00
FEB	96.50	500	98.00	600	0.75	20.00
MAR	103.00	700	100.00	1,500	1.69	114.29
APR	100.00	100	106.00	731	0.00	631.00
MAY	102.00	1,000	105.00	550	1.94	-45.00
JUN	101.00	94	102.00	650	1.34	591.49
JUL	106.00	20,000	102.00	450	2.15	-97.75
AUG	102.00	675	102.00	170	0.47	-74.81
SEP	102.00	1,170	102.00	750	0.00	-35.90
OCT	102.00	425	102.00	1,170	0.00	175.29
NOV	102.00	575	102.00	500	0.00	-13.04
DEC	102.00	500	102.00	600	0.00	20.00

KAKUZI

JAN	55.00	-	55.00	75	1.34	0.00
FEB	55.00	100	48.00	100,000	2.93	99,900.00
MAR	48.00	100	40.00	100,000	1.24	99,900.00
APR	39.00	2,700	41.00	1,544	0.90	-42.81
MAY	40.00	609	38.00	1,266	0.97	107.88
JUN	36.00	1,000	34.00	2,109	0.43	110.90
JUL	39.00	100	38.00	30,003	1.03	29,903.00
AUG	36.00	355	34.00	627	0.85	76.62
SEP	34.00	4,500	34.00	900	0.00	-80.00
OCT	34.00	50	37.00	249	0.32	398.00
NOV	37.00	444	37.00	6,123	0.00	1,279.05
DEC	37.00	1,535	36.00	190	0.00	-87.62

KCB

JAN	26.00	18,741	21.00	1,800	1.97	-90.40
FEB	21.00	10,200	25.00	10,000	1.71	-1.96
MAR	25.00	1,400	24.00	2,700	1.38	92.86
APR	24.00	1,000	27.00	600	0.92	-40.00
MAY	27.00	1,000	19.00	25,000	3.96	2,400.00
JUN	19.00	400	20.00	1,000	0.61	150.00
JUL	19.00	450	21.00	400	0.93	-11.11
AUG	21.00	1,000	17.00	150	1.54	-85.00
SEP	17.00	100	15.00	21,319	0.93	21,219.00
OCT	15.00	2,000	20.00	2,930	2.16	46.50
NOV	20.00	5,000	15.00	100	1.19	-98.00
DEC	15.00	2,634	16.00	2,700	0.44	2.51

KQ

JAN	9.05	300	9.10	90,000	0.15	29,900.00
FEB	9.15	1,000	9.15	5,000	0.07	400.00
MAR	9.10	471	7.60	1,000	0.42	112.31
APR	7.80	4,036	7.70	2,018	0.14	-50.00
MAY	7.75	1,634	8.40	1,000	0.18	-38.80
JUN	8.75	700	8.90	500,000	0.14	71,328.57
JUL	8.80	5,000	8.80	1,000	0.09	-80.00
AUG	8.25	150	7.90	1,000	0.09	566.67
SEP	8.00	1,000	7.35	100	0.27	-90.00

OCT	6.65	300	6.95	10,453	0.65	3,384.33
NOV	7.00	1,000	7.65	1,000	0.21	0.00
DEC	7.80	200	7.30	1,000	0.14	400.00

KPLC

JAN	40.00	231	40.25	1,071	0.57	363.64
FEB	41.50	1,296	52.50	2,722	4.03	110.03
MAR	52.00	1,216	41.00	250	4.25	-79.44
APR	41.00	500	36.00	855	0.95	71.00
MAY	35.00	1,145	28.25	2,400	1.88	109.61
JUN	28.00	100	29.25	200	0.52	100.00
JUL	29.00	4,000	28.50	300	0.84	-92.50
AUG	28.00	200	23.00	400	1.80	100.00
SEP	23.00	508,902	24.20	538	1.39	-99.89
OCT	25.50	6,144	21.50	300	1.55	-95.12
NOV	20.00	2,544	19.45	1,000	1.23	-60.69
DEC	19.70	1,600	19.30	2,000	0.26	25.00

NIC

JAN	18.00	390	18.00	1,952	0.73	400.51
FEB	20.00	976	16.00	190	0.86	-80.53
MAR	18.90	558	15.00	2,012	1.39	260.57
APR	16.00	375,985	14.00	190	0.46	-99.95
MAY	16.00	11,000	15.00	190	0.46	-98.27
JUN	14.20	140	16.00	171	0.57	22.14
JUL	15.10	300	14.00	113	0.40	-62.33
AUG	16.00	363	11.00	1,300	0.78	258.13
SEP	14.00	390	16.00	781	1.02	100.26
OCT	11.20	781	15.00	2,610	1.33	234.19
NOV	15.60	3,000	15.00	550	0.52	-81.67
DEC	14.45	77	15.00	390	0.13	406.49

NMG

JAN	69.00	500	70.00	1,000	1.21	100.00
FEB	68.00	200	71.00	800	1.65	300.00
MAR	71.00	200	63.00	1,124	3.52	462.00
APR	60.00	1,300	57.00	174	1.77	-86.62

MAY	56.00	249	43.00	5,963	4.01	2,294.78
JUN	44.00	100	48.00	200	1.87	100.00
JUL	48.00	100	50.00	100	1.54	0.00
AUG	49.00	200	49.00	200	0.98	0.00
SEP	47.00	1,400	42.00	750	2.54	-46.43
OCT	42.00	162	50.00	350	3.94	116.05
NOV	50.00	4,200	43.00	360	4.32	-91.43
DEC	43.00	750	44.00	315	0.49	-58.00

SASINI

JAN	34.00	1,000	32.00	1,500	0.47	50.00
FEB	32.00	3,500	34.00	500	1.18	-85.71
MAR	35.00	10,000	33.00	5,000	1.07	-50.00
APR	33.00	1,000	30.00	13,500	1.00	1,250.00
MAY	33.00	300	30.00	1,000	0.83	233.33
JUN	28.00	30,000	27.00	200	0.89	-99.33
JUL	27.00	1,000	27.00	500	0.42	-50.00
AUG	28.00	400	20.00	1,000	1.03	150.00
SEP	20.00	200	19.00	300	1.33	50.00
OCT	19.00	100	19.00	4,250	0.14	4,150.00
NOV	19.00	85,000	18.00	1,500	0.71	-98.24
DEC	17.00	400	16.00	3,000	0.35	650.00

SERENA

JAN	15.80	500	16.00	643	0.16	28.60
FEB	16.25	500	17.00	2,568	0.18	413.60
MAR	16.60	500	17.00	643	0.10	28.60
APR	17.05	500	17.00	100	0.04	-80.00
MAY	17.00	643	17.00	500	0.06	-22.24
JUN	17.05	643	17.00	643	0.34	0.00
JUL	16.50	500	17.00	1,686	0.24	237.20
AUG	16.75	100	16.00	100	0.26	0.00
SEP	16.00	1,000	15.00	300	0.47	-70.00
OCT	14.40	643	16.00	643	0.78	0.00
NOV	16.05	643	17.00	1,000	0.18	55.52
DEC	16.55	500	17.00	642	0.26	28.40

STANCHART

JAN	50.00	450	48.00	400	2.18	-11.11
FEB	48.00	1,050	58.00	600	3.54	-42.86
MAR	57.00	200	47.00	375	4.29	87.50
APR	46.00	350	50.00	12,000	1.35	3,328.57
MAY	51.00	700	50.00	15,250	1.18	2,078.57
JUN	52.00	350	55.00	150	2.10	-57.14
JUL	55.00	290	55.00	350	0.73	20.69
AUG	55.00	200	47.00	350	3.27	75.00
SEP	47.00	8,300	47.00	100	2.01	-98.80
OCT	47.00	100	50.00	140	1.68	40.00
NOV	49.00	300	51.00	100	0.92	-66.67
DEC	51.00	200	47.00	700	2.00	250.00

TOTAL

JAN	54.00	300	50.00	2,000	1.34	566.67
FEB	49.00	300	40.00	100	3.61	-66.67
MAR	39.00	200	43.00	200	1.71	0.00
APR	43.00	500	32.00	300	6.78	-40.00
MAY	31.00	2,200	28.00	650	1.01	-70.45
JUN	27.00	600	27.00	100	0.90	-83.33
JUL	26.00	700	25.00	3,000	0.63	328.57
AUG	24.00	125	16.00	150	1.43	20.00
SEP	17.00	400	21.00	40	0.97	-90.00
OCT	22.00	100	20.00	800	0.69	700.00
NOV	22.00	1,500	20.00	200	0.25	-86.67
DEC	20.00	500	19.00	1,500	0.00	200.00

UCHUMI

JAN	48.00	100	52.00	3,750	1.47	3,650.00
FEB	52.00	640	51.00	55,000	0.71	8,493.75
MAR	50.00	2,950	47.00	600	1.66	-79.66
APR	46.00	500	44.00	1,442	0.56	188.40
MAY	43.00	150	46.00	450	0.92	200.00
JUN	43.00	825	46.00	125	0.95	-84.85
JUL	45.00	2,000	45.00	1,100	0.25	-45.00
AUG	44.00	2,600	40.00	500	1.77	-80.77
SEP	40.00	1,250	37.00	500	1.20	-60.00

OCT	37.00	1,000	35.00	800	3.31	-20.00
NOV	35.00	500	33.00	200	2.17	-60.00
DEC	33.00	25,000	32.00	200	0.36	-99.20

2002

BAMBURI

JAN	16.35	414	17.00	1,469	0.44	254.83
FEB	16.00	550	16.00	250	0.12	-54.55
MAR	16.05	5,598	16.00	5,000	0.02	-10.68
APR	16.00	2,400	16.05	900	0.46	-62.50
MAY	15.90	600	17.00	4,179	0.50	596.50
JUN	16.75	100,000	17.20	40,000	0.15	-60.00
JUL	18.85	1,800	24.00	3,500	1.76	94.44
AUG	23.50	800	21.50	200	0.95	-75.00
SEP	21.00	220,000	22.00	700	0.52	-99.68
OCT	21.25	4,000	26.00	200	1.56	-95.00
NOV	25.75	2,000	34.25	152	1.62	-92.40
DEC	33.25	3,000	43.75	5,300	3.27	76.67

BAT

JAN	49.00	200	50.00	410	0.44	105.00
FEB	50.00	180	51.00	200	0.62	11.11
MAR	56.00	333	46.00	300	0.86	-9.91
APR	45.00	63,490	47.00	100	0.53	-99.84
MAY	46.00	600	48.00	6,664	0.73	1,010.67
JUN	48.00	100	53.00	344	0.46	244.00
JUL	54.00	300	49.00	550	1.33	83.33
AUG	54.00	500	49.00	201	1.73	-59.80
SEP	48.00	550	50.00	133	0.82	-75.82
OCT	50.00	358	54.00	263	1.26	-26.54
NOV	54.00	133	58.00	1,000	2.19	651.88
DEC	55.00	1,000	56.00	500	0.61	-50.00

BBK

JAN	73.00	926	87.00	1,000	3.42	7.99
FEB	88.00	258	86.00	10,729	1.95	4,058.53
MAR	85.00	262	77.00	407	4.57	55.34
APR	74.00	1,034	75.00	828	1.15	-19.92
MAY	80.00	969	83.00	80,000	1.46	8,155.93
JUN	80.00	851	85.00	180	2.04	-78.85
JUL	85.00	969	89.00	1,000	1.24	3.20
AUG	88.00	480	84.00	259	1.57	-46.04

SEP	82.00	284	78.00	208	2.05	-26.76
OCT	79.00	1,000	84.00	826	1.68	-17.40
NOV	83.00	200	90.00	282	2.87	41.00
DEC	90.00	2,500	101.00	1,000	2.82	-60.00

BOC

JAN	31.00	500	30.00	10,000	0.32	1,900.00
FEB	30.00	24,800	30.00	450	0.05	-98.19
MAR	30.00	1,000	28.50	3,000	0.68	200.00
APR	29.00	2,500	28.00	500	0.24	-80.00
MAY	30.00	208	28.00	2,000	0.47	861.54
JUN	29.00	1,815	27.00	600	0.46	-66.94
JUL	28.00	2,500	25.50	3,000	0.39	20.00
AUG	27.00	500	24.50	28,600	0.35	5,620.00
SEP	25.00	10,000	26.75	651	0.73	-93.49
OCT	27.00	900	33.25	1,500	2.13	66.67
NOV	35.00	2,000	37.00	700	1.98	-65.00
DEC	37.00	2,195	37.00	10,000	10.50	355.58

DTK

JAN	9.20	12,488	9.00	300	0.13	-97.60
FEB	9.05	1,000	8.50	500	0.31	-50.00
MAR	8.25	100	7.80	112,019	0.16	111,919.00
APR	7.75	110,000	7.50	100	0.13	-99.91
MAY	7.75	1,000	8.60	12,488	0.23	1,148.80
JUN	8.95	10,056	9.00	3,405	0.03	-66.14
JUL	9.05	8,916	9.00	1,995	0.07	-77.62
AUG	9.00	14,589	9.00	23,747	0.00	62.77
SEP	9.05	60,000	11.00	10,000	0.76	-83.33
OCT	10.75	1,250	11.00	6,000	0.06	380.00
NOV	11.00	5,000	11.00	10,000	0.19	100.00
DEC	10.40	1,710	10.00	2,000	0.20	16.96

EABL

JAN	74.00	1,245	76.00	1,000	1.68	-19.68
FEB	77.00	500	79.00	207	1.97	-58.60
MAR	78.50	257	78.50	143	1.19	-44.36
APR	79.00	680	76.00	182	1.62	-73.24

MAY	76.00	70	80.50	2,768	1.62	3,854.29
JUN	79.00	82	83.50	166	3.31	102.44
JUL	79.50	150,000	82.00	1,000	1.39	-99.33
AUG	80.00	100,000	86.00	201	2.16	-99.80
SEP	91.00	163	92.50	3,093	1.61	1,797.55
OCT	92.50	236	101.00	200	3.80	-15.25
NOV	101.00	1,500	102.00	50,000	3.56	3,233.33
DEC	102.00	344	128.00	400	6.69	16.28

FIRE STONE

JAN	7.10	600	7.35	950	0.13	58.33
FEB	7.25	450	8.00	6,750	0.33	1,400.00
MAR	7.80	1,000	7.10	450	0.31	-55.00
APR	7.00	1,000	6.85	450	0.39	-55.00
MAY	7.00	250	8.15	450	0.45	80.00
JUN	8.25	3,000	8.15	550	0.21	-81.67
JUL	8.20	6,000	8.50	2,000	0.22	-66.67
AUG	8.50	5,475	7.75	700	0.40	-87.21
SEP	7.50	450	7.10	1,050	0.24	133.33
OCT	7.30	400	7.50	1,000,000	0.10	249,900.00
NOV	7.80	1,000	8.50	670	1.20	-33.00
DEC	8.50	2,550	8.70	1,500	0.10	-41.18

WTK

JAN	57.00	175	51.00	1,000	0.00	471.43
FEB	51.00	400	51.00	2,000	0.00	400.00
MAR	49.75	200	48.00	10,000	0.00	4,900.00
APR	43.50	1,000	44.00	3,000	0.00	200.00
MAY	42.00	200	42.00	200	0.33	0.00
JUN	41.25	100	40.00	1,000	0.00	900.00
JUL	39.50	250	38.00	500	0.00	100.00
AUG	32.50	500	30.00	494	0.00	-1.20
SEP	27.75	500	28.00	2,550	0.00	410.00
OCT	26.50	125	28.00	125	0.00	0.00
NOV	34.75	201	44.00	400	15.30	99.00
DEC	43.75	300	44.00	300	14.50	0.00

KAKUZI

JAN	36.00	130	36.00	1,000	16.97	669.23
FEB	36.00	100	36.00	1,000	0.00	900.00
MAR	35.00	1,000	30.00	300	12.16	-70.00
APR	30.00	2,700	30.00	-	0.00	-100.00
MAY	30.00	609	29.00	-	14.33	-100.00
JUN	38.50	300	28.00	1,000	13.32	233.33
JUL	25.25	2,500	24.75	318	9.95	-87.28
AUG	22.50	300	16.05	25,000	5.93	8,233.33
SEP	15.50	10,000	15.50	8,712	6.20	-12.88
OCT	15.50	400	15.50	2,000	5.73	400.00
NOV	15.30	2,700	14.40	318	0.52	-88.22
DEC	14.50	100	14.65	15,000	0.11	14,900.00

KCB

JAN	16.50	399	17.50	15,000	0.93	3,659.40
FEB	17.60	266	17.80	100	0.83	-62.41
MAR	16.85	2,666	15.10	433	0.89	-83.76
APR	15.10	100	14.00	1,500	0.42	1,400.00
MAY	14.00	100	10.50	1,600	1.46	1,500.00
JUN	10.50	100	10.15	333	0.23	233.00
JUL	10.40	100,000	10.30	533	0.17	-99.47
AUG	10.25	216	10.00	500	0.19	131.48
SEP	10.00	2,692	9.20	766	0.65	-71.55
OCT	9.50	2,892	12.00	100	0.81	-96.54
NOV	12.60	2,000	12.00	195	1.31	-90.25
DEC	11.75	266	18.70	6,250	2.56	2,249.62

KQ

JAN	7.30	1,000	7.90	1,000	0.14	0.00
FEB	7.80	2,000	7.40	25,000	0.19	1,150.00
MAR	7.50	500	7.40	1,210	0.14	142.00
APR	7.30	2,000	7.20	500	0.07	-75.00
MAY	7.30	2,368	7.50	20,000	0.09	744.59
JUN	7.80	1,000	7.20	1,000	0.28	0.00
JUL	7.30	500	7.40	1,000	0.10	100.00

AUG	6.90	1,000	6.70	1,350	0.10	35.00
SEP	6.50	1,000	6.00	100	0.19	-90.00
OCT	6.30	2,000	6.00	60,000	0.08	2,900.00
NOV	6.05	24,000	5.30	33,875	0.36	41.15
DEC	5.30	282,520	6.90	2,000	0.44	-99.29

KPLC

JAN	19.05	115	17.00	59	0.81	-48.70
FEB	16.00	284	16.00	972	0.13	242.25
MAR	14.55	981	10.00	27,329	1.38	2,685.83
APR	10.00	20,000	9.05	100	0.43	-99.50
MAY	9.10	400	9.05	500	0.29	25.00
JUN	8.70	671	8.70	100	0.17	-85.10
JUL	8.70	1,500	7.50	10,000	0.25	566.67
AUG	7.25	30,000	6.60	8,502	0.23	-71.66
SEP	6.60	4,149	6.80	588	0.31	-85.83
OCT	6.75	10,000	9.20	500	0.63	-95.00
NOV	10.05	5,000	9.00	11,014	2.38	120.28
DEC	9.60	1,000	17.35	72,000	2.16	7,100.00

NIC

JAN	14.95	390	15.75	312	0.58	-20.00
FEB	15.80	200	16.30	2,725	6.36	1,262.50
MAR	16.00	1,570	16.00	500,000	0.35	31,747.13
APR	15.05	600	12.20	2,000	0.90	233.33
MAY	12.20	7,765	12.50	112	0.28	-98.56
JUN	13.60	1,000	13.10	1,050	0.17	5.00
JUL	13.10	637	14.65	320	0.38	-49.76
AUG	14.55	2,000	14.50	600	0.13	-70.00
SEP	14.30	425	13.40	3,514	0.25	726.82
OCT	13.00	156	13.60	598	0.16	283.33
NOV	13.60	3,000	16.50	400	1.82	-86.67
DEC	16.25	139,016	9.70	1,000	1.15	-99.28

NMG

JAN	43.00	150	44.00	162	0.58	8.00
FEB	44.00	750	47.00	200	0.70	-73.33
MAR	47.00	200	63.00	610	5.44	205.00

APR	62.00	585	61.00	1,000	0.82	70.94
MAY	61.00	300	40.00	11,030	9.05	3,576.67
JUN	40.00	187	40.00	250	0.36	33.69
JUL	40.00	400	39.00	150,000	0.28	37,400.00
AUG	39.00	10,000	42.00	100	2.65	-99.00
SEP	43.00	119	54.00	500	0.85	320.17
OCT	44.00	1,432	52.00	3,000	1.96	109.50
NOV	52.00	600	60.00	1,500	3.03	150.00
DEC	61.00	10,000	84.00	170,200	57.57	1,602.00

SASINI

JAN	16.00	500	16.00	200	1.44	-60.00
FEB	15.00	5,000	14.85	800	0.41	-84.00
MAR	15.00	1,000,000	15.00	5,000	0.06	-99.50
APR	15.00	18,701	15.00	8,925	0.02	-52.28
MAY	15.00	3,000	13.70	1,000	0.65	-66.67
JUN	13.00	18,000	13.50	2,044,875	0.80	11,260.42
JUL	14.00	1,000	13.75	450	0.19	-55.00
AUG	13.00	100	13.20	1,000	0.06	900.00
SEP	14.00	8,500	13.00	201	0.29	-97.64
OCT	13.00	600	14.00	250	0.00	-58.33
NOV	14.00	1,875	13.50	40,000	0.55	2,033.33
DEC	14.00	500	13.60	1,500	0.05	200.00

SERENA

JAN	17.10	500	18.00	1,500	41.92	200.00
FEB	17.40	643	17.00	643	4.34	0.00
MAR	17.05	1,000	17.00	357	2.59	-64.30
APR	17.05	500	17.00	1,143	0.08	128.60
MAY	17.10	4,501	17.00	642	5.53	-85.74
JUN	17.05	643	16.00	60,652	5.98	9,332.66
JUL	16.00	400	16.00	642	4.74	60.50
AUG	16.10	642	17.00	400	4.30	-37.69
SEP	16.20	6,677	16.00	643	3.04	-90.37
OCT	17.00	1,000	17.00	500	1.80	-50.00
NOV	17.00	500	19.00	643	0.60	28.60
DEC	19.00	643	19.10	100	0.11	-84.45

STANCHAT

JAN	47.00	750	56.00	768	16.02	2.40
FEB	56.00	350	51.00	200	6.23	-42.86
MAR	50.00	700	47.00	100	2.22	-85.71
APR	47.00	700	48.00	700	0.55	0.00
MAY	47.00	100	50.00	100	0.67	0.00
JUN	50.00	350	53.00	350	0.63	0.00
JUL	52.00	1,050	54.00	535	1.16	-49.05
AUG	54.00	100	50.00	1,050	2.01	950.00
SEP	50.00	700	55.00	500	1.15	-28.57
OCT	52.00	201	59.00	350	1.28	74.13
NOV	58.00	1,050	59.00	100	1.09	-90.48
DEC	57.00	1,050	62.00	3,325	1.29	216.67

TOTAL

JAN	19.05	1,200	16.85	5,296	0.43	341.33
FEB	16.80	1,000	17.00	696	0.03	-30.40
MAR	17.00	850	14.75	100	0.83	-88.24
APR	14.50	500	13.80	200	0.22	-60.00
MAY	14.05	150	8.90	1,309	1.87	772.67
JUN	8.85	200	10.35	1,250	0.36	525.00
JUL	11.40	1,000	15.55	500	2.70	-50.00
AUG	15.00	3,100	15.00	5,000	0.13	61.29
SEP	17.00	2,000	16.00	150	0.39	-92.50
OCT	15.50	3,000	15.05	500	0.22	-83.33
NOV	16.05	10,000	18.50	4,000	2.26	-60.00
DEC	18.50	6,000	22.75	3,000	1.67	-50.00

UCHUMI

JAN	32.00	30,000	31.50	1,000	11.22	-96.67
FEB	30.00	1,000	28.00	100	3.08	-90.00
MAR	28.00	100	22.00	100	7.19	0.00
APR	21.00	500	18.00	200	8.09	-60.00
MAY	17.00	1,000	16.80	1,500	0.31	50.00
JUN	17.00	100	16.60	600	0.22	500.00
JUL	16.00	750	15.00	2,000	0.69	166.67
AUG	15.00	1,250	14.95	300	0.06	-76.00
SEP	12.00	300	15.00	2,000	1.12	566.67

OCT	15.00	4,000	14.75	1,000	0.19	-75.00
NOV	15.00	6,000	15.50	250	2.32	-95.83
DEC	16.00	2,000	25.75	7,000	2.50	250.00