

**PORTFOLIO RETURNS USING DIFFERENT PORTFOLIO
MANAGEMENT STYLES AT THE NAIROBI STOCK EXCHANGE**

BY

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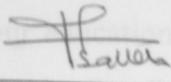


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**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN
PARTIAL FULLFILMENT OF THE REQUIREMENT OF MASTER OF
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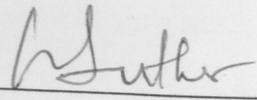
DECLARATION

This research project is my original work and has not been previously submitted for a ward of a degree in any other University.

Signed:  Date: 19.10.2005

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This research project has been submitted for examination with my approval as the University of Nairobi supervisor.

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ACKNOWLEDGEMENT

With great joy and love, I dedicate this research work to my dear mum Esther, who has been such a blessing in my life as she strives to fulfil our late dad's dream concerning our education, and without whom my academic dream would not have been realized. To Caroline Anne and Eugene Kaunda, I thank both of you for being a part of my life. I convey my sincere gratitude to my family for their patience and understanding during the period of my program.

To my brothers, sisters, uncles and wider family members may this be an inspiration to you to ascend higher in your academic endeavours. In memory of my late father Sallah. May God bless you all.

For those who have made contributions to my life and not mentioned personally, I register my appreciation and a lot of thanks to all of you. God bless.

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I am greatly indebted to my family both immediate and extended; for their patience, encouragement and unparalleled support to my committed to this postgraduate program, and without whom, this project would not have been possible.

I wish to convey my sincere gratitude to my family for their patience and understanding during the period of my program.

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For those who have made contributions to my life and not mentioned personally, I register my appreciation and a lot of thanks to all of you. God bless.

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ABSTRACT

The Study examines and compares portfolio mean return differentials between Active and Passive portfolio management styles/strategies at the Nairobi Stock Exchange (NSE) from April 1996 to December 2001; and determines whether there is a management style that dominates over the other in terms of return performance. This is determined by modelling past performance of actively and passively managed portfolios over the period of study.

NSE 20 share index constituent securities were used as surrogate for passively managed portfolio, and top 5 and bottom 5 securities in terms of Price Earnings (P/E) ratio as surrogate for actively managed portfolio. P/E ratio was used to pick securities included in top 5 and bottom 5 securities during the monthly rebalancing of actively managed portfolio.

Without factoring in transaction cost, and adopting sensitivity analysis approach and paired t-test at different confidence levels of 90%, 95% and 99%, the study indicates that there is no significant mean return difference between active portfolio management style and passive portfolio management style; hence an investor can opt for any of the portfolio management styles in Nairobi Stock Exchange.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Investors should only address portfolio management strategy after a solid investment foundation has been built and appropriate investment policy put in place. A solid planning foundation consists of goal identification, coordination of various financial planning aspects, and development of an investment policy based on specific goals, shape and location of individual's indifference curves, put differently the risk tolerance level of an individual. The central point of investment policy is that investors are in very different situations and have very different objectives; so whether acting for themselves or employing an agent, they should carefully think through the implications of their situation and objectives for the way their portfolio is to be managed.

An investor, having decided on the proportions of the portfolio that s/he would like to invest in stocks, bonds and real estate, has to decide on what type and kind of investment to be held in portions of the portfolio. This asset selection decision, like the asset allocation decision can be active or passive one. The active decision would require the investor to buy undervalued assets in each asset category and sell overvalued ones on a continuous basis. Active managers usually act on perception of mispricing, and because such perceptions change relatively frequent, such managers tend to trade fairly frequent. Sharp and Timken (Financial Analyst Journal, January – February 1991). On the other hand, the passive decision would require the investor to invest across assets in asset categories without attempting to base the decision on under or over valuation of assets. Passive investors acknowledge indirectly that they have little or no predictive capability, and are thus willing to forego an opportunity to earn above-average or excess return, rather than suffer exposure to excess variability or unsatisfactory outcome of underperforming assets.

Investors are interested in earning good returns from the investments they make; hence there are two questions that beg for answers, which assets should be included in the portfolio? And which management strategy should be adopted? This is because investment is about sacrifice of current shillings for future shillings. It involves waiting (time) and risk. Whereas the sacrifice takes place now and is certain, the reward comes

later or may not come at all. Makowitz (1952) put forth a solution to this portfolio selection problem when he advanced the modern portfolio theory approach to investing. Makowitz (1952) begins by assuming that an investor has a sum of money to invest in the present time, for a known length of time referred to as holding period, then sold off. His approach to portfolio selection assumes that investors seek both maximum expected returns for a given level of risk and minimum risk for a given level of expected return. Expected return is the measure of potential reward associated with a portfolio and standard deviation is a measure of a portfolio risk.

Modern finance theory allows us to consider the investor and his or her perception differently from the asset that is being considered for investment. This allows us to determine the return and risk characteristics of an asset or portfolio of assets and match it with the investor's requirements. The advantage of this approach is that we can design a series of efficient portfolios and portfolio management strategies that appeal to different investors. Nearly fifty years ago, Harry Markowitz had a great insight that revolutionized portfolio construction – that optimal portfolio could be found by maximizing the expected returns minus some multiple of variance. Over the years, Mean-Variance approach has come to dominate portfolio selection process, however the approach functions only perfectly well under a restricted set of assumptions. Uysal et al (The Journal of Portfolio Management, Summer 2001).

The problem facing any investor is to determine which particular risky asset to invest in, and which management strategy to adopt. The question of active and passive equity management is currently a major issue to pension funds, plan sponsors, and trustees. Beating the average represented by the S&P 500 index is a particularly tough target today because the large-capitalization stocks are leading the bull market for equities. Sorensen et al (Financial Analyst Journal, September/October 1998). With the recent difficulty in beating the S&P 500 index, the debate over active versus passive investing has risen to a new level. Barron's recently reported that the percentage of U.S equity funds that outperformed the S&P 500 index yearly in the past 20 years fell to a dismal 5% during the first half of 1997. Bary (Barron's, September 1997)

This study investigates the most effective portfolio management strategy in Nairobi Stock Exchange (NSE) in terms of return. This requires that the returns from two management

portfolio strategies be analysed and then the difference between the strategies determined. Sharp and Timken (Financial Analyst Journal, January - February 1991) asserts that if active and passive portfolio management styles are defined sensibly, it must be the case that before costs, the return on the average actively managed dollar will equal the return on the average passively managed dollar, and after costs, the return on average actively managed dollar will be less than the return on the average passively managed dollar.

1.2 STATEMENT OF THE PROBLEM

There are two forms of portfolio management. Some portfolio managers either secure essential returns for their clients through passive management or attempt to earn profits for them through buying and selling mispriced securities through active management. Essential returns can be delivered reliably, while profiting can be considered more difficult. Ennis, (Financial Analyst Journal, July - August 1991). This then becomes an empirical issue.

Sorensen et al (Financial Analyst Journal, September - October 1998) assert that the debate of active versus passive investing will continue into the future. This is on the account of active managers declaring victory during tough stock market years, and indexing making triumphant boasts during bull market years.

Advocates of passive management strategy believe that the market behaves according to the efficient market hypothesis. In such a world, no investors could systematically exploit any mispricing, as they would be instantly corrected. Consequently, passive investors believe it is not possible to accurately identify investments that will consistently beat market averages, at a lower enough cost to justify the effort. Passive investors attempt simply to replicate their respective investable universes.

On the other hand, proponents of active investment management strategy indicate that the market provides sufficient inefficiencies to be successfully exploited by astute investor. They believe that it is possible to consistently identify high performing investments and ultimately achieve better than average return. In other words, active investors seek out what they consider to be better than average opportunities.

Put in perspective, the decision between active and passive asset management looks only marginally significant.

This study examines and compares the returns between the two portfolio management strategies at the NSE, and determines whether there is a management strategy that dominates over the other in terms of return performance.

When making investment decisions, investors are faced with dilemma in two fold.

1. Choosing securities to include in a portfolio. In choosing the securities to include in the portfolio, the risk -return trade off features prominently.

2. Choosing the best portfolio management strategy for the portfolio so formed.

Investors must first determine and, if possible measure their predictive ability. They should actively seek above-average returns only where they have predictive capability; where they don't passive approach is the appropriate way to go. Farrell Jr. (Financial Analyst Journal, September – October 1993)

This research addresses the second issue – choosing the best portfolio management strategy - by examining whether differences in return exist between the management strategies. This is achieved by modeling the past performance of actively and passively managed portfolios over the period of the study. In doing this, we can quantify and understand better the return differential that exists depending on the asset management strategy adopted.

The key questions that this study addresses are “does it really matter whether investors at NSE adopt Active or Passive Approach to portfolio management? And to what extent do these management strategies differ in terms of portfolio return characteristics”.

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1.3 HYPOTHESIS

The following hypothesis has been set for this study:

H₀ – There is no significant difference in return between actively managed portfolios and passively managed portfolios.

H_a - There is significant difference in return between actively managed portfolios and passively managed portfolios.

1.4 OBJECTIVES OF THE STUDY

The objective of this study is to determine whether there exists Portfolio Return difference in NSE based on the management style adopted in a particular portfolio - Active or Passive management style.

1.5 IMPORTANCE OF THE STUDY

The study is important in the following ways:

- I. **Investors:** The study provides important information that can be used to design the most efficient and effective portfolio management style that suits different investors' investment objectives given particular risk tolerance level.
- II. **Portfolio Managers:** The study provides guidance on how best to advice clients on the appropriate management style given an investment objective.
- III. **Academic:** The study opens an avenue to scholars who want to do further research in the area of active and passive portfolio management styles.

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1.6 OVERVIEW OF THE STUDY

Chapter 1: Gives a brief background of the study, the problem that the study addresses, hypothesis set for the study, objective of the study and finally the values accruing from this study.

Chapter 2: Looks at brief history and operations of Nairobi Stock Exchange (NSE), theoretical foundation of portfolio theory and portfolio management strategies, and what has been done by scholars both in Kenya and the rest of the world pertaining to the area of portfolio management strategies.

Chapter 3: Outlines the research procedures adopted in resolving the research problem and specifically addresses tools used in interpreting and understanding the data collected on the subject.

Chapter 4: Details findings and interprets observations made on the data analyzed for the study.

Chapter 5: Summarises the findings and conclusion for the study, makes recommendations on the study, problems and limitations of the study and makes suggestions for future work.

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CHAPTER 2: LITERATURE REVIEW

2.1 NAIROBI STOCK EXCHANGE (NSE)

2.1.1 History and operations of NSE

In Kenya, stock exchange practice can be traced back to 1920's when the country was still a British colony. NSE was initially set up as an overseas stock exchange in 1953. In the following year (1954), NSE was constituted as a voluntary association of stockbrokers registered under the societies Act. It operated as an association of stockbrokers with no trading floor until October 1991. The introduction of the trading floor has led to a substantial increase in trading volumes and dramatic upward movement in various indexes. The NSE has been instrumental in enabling the public and private sectors in Kenya to raise large amounts of capital for expansion programs and for the financing of new businesses. It has also allowed for the participation of foreign investors in a bid to increase the investor base and bring into the country the much-needed foreign investment. This has in effect increased the number of participants at the bourse.

The NSE thus represents the financial market in Kenya. It has 51 registered brokers and has about 52 firms listed on the exchange. NSE Hand Book, (2000). It deals in ordinary shares and fixed income securities such as Preference shares and most recently treasury bonds. The NSE also has some of its shares cross-listed with other stock exchanges in South Africa, Uganda and Tanzania. Both operational and informational efficiencies are key to ensuring that the NSE fulfils its mandate as the capital markets intermediary for Kenya and the world over. Recently electronic Central Depository System (CDS) was introduced to speed up the share ownership transfer process, boost liquidity in the market, increase market activity, reduce market risk, and attain international standards.

The structure of NSE has witnessed tremendous transformation during the last 10 years that has seen its operating environment and trading systems improve as part of measures aimed at improving market transparency and efficiency. Fundamental reform of the market structure was undertaken in year 2000. This saw the market reorganized into four independent market sectors namely:

- Main Investments Market Segment (MIMS)
- Alternative Investments Market Segment (AIMS)

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- Fixed Income Securities Market Segment (FISMS)
- Futures and Options Market Segment (FOMS)

2.2 THEORETICAL FOUNDATION OF PORTFOLIO THEORY AND PORTFOLIO MANAGEMENT STRATEGIES

2.2.1 Portfolio Theory

The fundamental assumption underlying Markowitz approach to portfolio analysis is the risk averseness of investors and that the market gives prices. This implies investors have to be compensated with higher return in order to accept higher risk. Given a choice, for example, between two securities with equal rates of return, an investor will select the security with the lower level of risk, thereby rejecting the higher-risk security. Technically this assumption means that investors maximize expected utility – it being measure of satisfaction, considering both risk and return - rather than merely trying to maximize expected return. The point is, it is investment preferences that determine portfolio selection, and utility function simply provides the implementation. Uysal et al (The Journal of Portfolio Management, summer 2001). The Markowitz (1952) Model indicates that the aim of portfolio construction is to generate a portfolio that provides the highest return at a given level of risk through formation of efficient portfolio. A single asset of portfolio is considered to be efficient if no other asset or portfolio of assets offers higher expected return with the same (or lower) risk, or lower risk with the same (or higher) expected return. Reilly and Brown (2003). **Mean-Variance analysis**, the oldest and most acceptable part of modern portfolio theory provides the theoretical foundation for risk-return trade off, and it is based on the following assumptions

1. All investors are risk averse – they prefer less risk to more for the same level of expected return. This does not mean that all investors have exactly the same tolerance for risk, but they differ in the level of risk they are willing to tolerate for a given level of expected return.
2. Expected return for all assets are known
3. The variance and covariance of all asset returns are know
4. Investors need only know the expected returns, variance, and covariances of returns to determine optimal portfolios. They can ignore skewness, kurtosis and other attributes of distribution.

5. There are no transaction costs or taxes.

DeFusco et al (AIMR, 2001).

Minimum-variance frontier

Second, third, and fourth assumptions states that investors need only know

- i. Expected return - Mean return
- ii. Variance - Standard Deviation of the returns
- iii. Covariances - Correlation with other assets' returns

Mean-variance analysis utilizes expected return, variance and standard deviation to determine optimal asset combination. Assuming two-asset combination,

- Expected return will be given by

$$E(R_p) = W_1 E(R_1) + W_2 E(R_2)$$

Where; W_1 and W_2 – Proportions of each asset

$E(R_1)$ – Expected return on asset 1

$E(R_2)$ – Expected return on asset 2

- Variance of return will be given by

$$\delta_p^2 = W_1^2 \delta_1^2 + W_2^2 \delta_2^2 + 2W_1W_2\rho_{1,2}\delta_1\delta_2$$

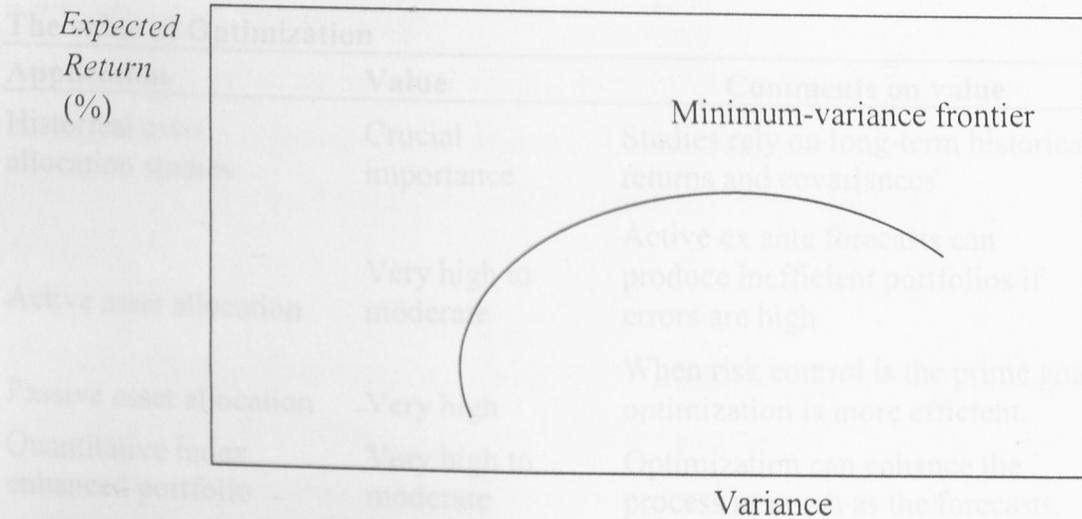
Where: W_1 and W_2 – Proportions of each asset

δ_1 – Standard deviation of asset 1

δ_2 – Standard deviation of asset 2

$\rho_{1,2}$ – Correlation between returns of assets 1 and 2

From the above we can determine both the expected return and variance of two-asset combination as a function of the proportions of the assets. Variance (risk) and return for a two-asset combination can then be used to plot **portfolio possibility curve** or **minimum-variance frontier**, where minimum variance that can be achieved for a given level of expected return can be shown. DeFusco et al (AIMR, 2001). This can be represented in a diagram as below



Source: *Quantitative methods for Investment Analysis (AIMR, 2001). P563.*

The concept of minimum-variance frontier can be extended to asset combination of more than two assets to a universe of assets from which an efficient frontier can be formed. Asset combination (portfolio) lying on the efficient frontier offers the maximum expected return for their level of variance of return. Efficient portfolios make efficient use of risk; investors making portfolio choices in terms of mean return and variance of return can restrict their selection to portfolios lying on the efficient frontier. Reduction in the number of portfolios to be considered simplifies the task of portfolio selection, and this help in focusing attention on one set of portfolios from the unlimited number of possible choices. DeFusco et al (AIMR, 2001).

Mean-variance relationship and efficient frontier can be used to form an optimal portfolio. Optimization has become essential apparatus of choice in modern portfolio theory, and its application now span many levels of investment processes including global market allocation, currency risk hedging, portfolio construction for tracking and enhancing value, and portfolio hedging with derivatives. Pension fund asset allocation studies based on historical return data almost always use optimization to analyze choices. Sorensen et al (Financial Analyst Journal, September/October 1998). The table below shows how optimization has been utilized in general and its values.

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The value of Optimization

Application	Value	Comments on value
Historical asset allocation studies	Crucial importance	Studies rely on long-term historical returns and covariances
Active asset allocation	Very high to moderate	Active ex ante forecasts can produce inefficient portfolios if errors are high
Passive asset allocation	Very high	When risk control is the prime goal, optimization is more efficient.
Quantitative index enhanced portfolio	Very high to moderate	Optimization can enhance the process as much as the forecasts.
Concentrated stock-picking portfolio	Marginal importance	Optimization may be a refinement of insignificance compared with accurate forecasting.

Source: Financial Analyst Journal (September/October 1998) p. 26

Inputs to typical mean-variance optimization includes

1. Well defined objective function
2. Quantified risk preference
3. Specific assets return forecasts
4. Specific asset volatility forecasts
5. Specific asset covariance forecasts

Value of portfolio optimization is heavily dependent on the inputs listed above to the extent that should any of them be suspect or subject to large error, then optimization would have diminished value. Optimization is directly related to active versus passive portfolio management decision-making, since the crux of the decision is what the investor assumes or believes about forecasting returns and return interactions. Sorensen et al (Financial Analyst Journal, September/October 1998).

2.2.2 Portfolio Rebalancing

Investors' reluctance is not entirely ill founded given that riding winners up allows benefit from momentum for a while, but when markets turn, as they always do, rebalancing delivers substantial benefits, particularly when the reversals are sudden and dramatic.

While the benefits of rebalancing are generally acknowledged, there is little agreement on the right rebalancing strategy. The goal is to devise an easily implementable rebalancing strategy that is consistent with a portfolio's underlying assumptions and investor's risk tolerance. The key to rebalancing and seizing an investment opportunity lies in the ability to define classes of securities for rebalancing; in this aspect the issue is, should securities be classified by industry, their size or age, certain financial ratios, or by what? In addition, a rebalancing policy needs to address the issue of how far to rebalance: all the way back to the target allocation or to some intermediate point?

One approach that seems not to have lost popularity is to classify securities by the very accessible financial ratios, like Price to Book (P/B) or Price to Earnings (P/E) ratios. Securities with high P/E ratio can be referred to as growth securities and ones with low P/E ratio as value securities. Securities with high growth potential have low current earnings compared to future levels, and for this reason current P/E levels are naturally higher. Securities with low P/E ratio are often under-valued. P/E ratio is computed as

$$P/E = \text{Market Share Price} / \text{Earnings per share}$$

And the ratio measures the degree to which the Market capitalizes a firm's earning. Firms with low P/E ratio are believed to tend to out perform the market even when returns are adjusted for risk. This suggests that investing in a proportion of a firm with low P/E ratio is a sound investment strategy.

Broadly speaking, securities are ranked at a given time according to their P/E or P/B ratios. The top half is growth securities and the bottom half as the value securities. A growth investor may hold securities with low P/E ratio for reasons that affect the price temporarily but that leave the longer-term growth potential unaffected. Value investors

may hold securities with high P/E ratio if there is scope for them to appreciate in the short run. It is widely reported that in the long run value securities tend to do better than their growth counterparts. Fama and French (1993, 1998) give evidence of this phenomenon, interpreting it as compensation for a certain risk factor. According to them, value securities are low priced since they are in distress, and taking on the risk related to the distress factor rewards value investors.

Value investors normally consider selecting securities that seem inexpensive compared to the fundamental value of firms and for which price rebound are expected. On the other hand, growth investors select securities expecting an accelerated earnings growth, and this consequently results in run up in prices. In this sense value investors make short-term bets, as they play on price movements that are usually short lived, compared to growth investors who bet on more structural changes in the firm.

2.2.3 The Concept of Portfolio Management Strategies

Most investment managers believe or advertise that they possess superior investment skills and are poised to reap great results. Despite their persuasion, common sense argues against the possibility of everyone being above average. Yet the fact that everyone cannot be above average does not prove being above average is impossible. It merely proves it is difficult. Voicu (Journal of Financial Planning)

Is it possible to outperform the market? This is one question any investor should ask, and try to get an answer for. If the answer is no, and the market is considered to be efficient, then passive portfolio management – buying diversified portfolios of all the securities in an asset class and a cross the market – is probably the way to go, argument being based on reduced costs and tax efficiency. If on the other hand, the answer is yes, then active portfolio management is the way to go, argument being, there are a variety of anomalies in securities market that can be exploited to outperform passive investment.

Philosophies of portfolio management are divided into two categories – active and passive. Active portfolio management attempt to add value by profiting from forecasted market movement, on the other hand passive strategy is more consistent with the Efficient Market Hypothesis (EMH). Market is considered to be efficient if security prices fully reflect information available by factoring in and reacting instantly to any new information

(both private and public) that flows to the market or events that happen around the securities, hence reducing any possibility of arbitrage.

2.2.4 Active portfolio management strategy

The goal of active portfolio management is to earn return that exceeds the return of passively managed portfolio, net of transaction costs and on risk-adjusted basis. This makes the job of active portfolio management to be difficult, say transaction costs and fees total 1% of the portfolio's assets annually, this would mean the portfolio has to earn a return of 1 percentage point above the passively managed portfolio in order to keep pace with it. Further, if the manager's strategy involves overweighting specific market sectors in anticipation of price increases, then the risk may well exceed that of the passively managed portfolio, so the active portfolio's return will have to exceed that of passively managed portfolio by even wider margin to compensate for its higher risk. According to Arshanapalli et al (The Journal of Portfolio Management, Summer 2004) the effect of transaction costs on active portfolio is substantial and the rate of wealth depletion depends very much on how often trades are made during the holding period. Since transaction costs cannot be avoided in the real world, an investor should be cautious about changing the asset mix of portfolio when transaction costs are high and market expectations are doubtful.

Active portfolio managers believe that from time to time there are mispriced securities and they use deviant predictions to identify such securities – their forecasts of risks and expected returns differ from consensus opinions. The realm of active portfolio management, however is one in which portfolio managers are effectively betting against markets being perfectly efficient. Solnik, (2000).

In an active strategy, investors place bets on various factors – information bet, valuation bet, market anomalies and security attributes - that affect securities' behavior. Active decisions of investors show up at various levels;

- **Asset allocation** – Investors can select long-term weights that differ from those of the market indexes through strategic allocation, and periodically revise the weights based on changes in the market expectations or risk estimates through tactical asset allocation.

- **Sector/Industry selection** – selection of securities from various industries or sectors to include in the portfolio depending on the investor's perception of the sector or industry.
- **Style selection** - Investors believing that companies with similar attributes tend to have similar stock price behavior. Common style decisions used are value versus growth stocks, or small versus large firms.
- **Security selection** – Investors engaging in active selection of securities within each market to beat the market.
- **Market timing** – Investors resorting to market timing to temporarily increase or reduce the exposure in one or more markets. However this is short-term trading tactic and often involves use of derivatives.

In active portfolio management, two approaches are used in analyzing securities, fundamental analysis and technical analysis. Lofthouse, (2001). Fundamental analysts try to calculate value of securities by analyzing present values of the likely future cash flows and then compare the same to current security prices to identify under/over priced securities – they carry out macroeconomic, industry economic and accounts analyses, and valuations; this is top-down security analysis. On the other hand, technicians focus exclusively on securities price data by considering past prices behavior and what they might indicate to be the likely future prices behavior. They use charting, volume trends, smart money and contrarian opinion. Technicians believe that there are systematic statistical dependencies in security returns and that history tends to repeat itself. They make price predictions on the basis of published data, patterns and correlations, and apply rule of thumb to charts to assess trends, support and resistance levels. From these, they develop buy and sell signals to rebalance actively managed portfolio.

Technicians further use market timings to identify turning points in the performance of major stock indices. Other methods include filter rules, measures of relative strength, line and bar charts, moving averages of security prices over various periods, study of trading volume, aggregate demand and supply analysis and other gauges that measure momentum, valuation, sentiment, leadership and monetary policies.

Lofthouse (2001) asserts that, technical analysis is based on the assumption that markets are driven by psychological factors than fundamental values, and its proponents believe that security prices reflect not only the underlying value of the security but also the hopes and fears of investors in the market. Technicians further assume that the emotional makeup of investors does not change and that in a certain set of circumstances investors will react in a similar manner to how they did in the past and resultant price movements are likely to be the same. This view recognizes that it is the actions of investors in the market place responding to news that cause security prices to change rather than the news itself, and that once established a market trend tends to continue.

According to Sears and Trennepohl (1993), fundamental analysis can either be top-down or bottom-up depending on what active portfolio manager thinks is mispriced relative to security valuation model results. Fundamental analysts attempt to add value to portfolio they manage relative to passively managed portfolio by;

- Timing equity market by shifting funds into and out of securities, bonds depending on broad market forecasts and estimated risk premiums.
- Shifting funds among different equity sectors and industries – financial securities, technology securities – or among investment styles (large and small capitalizations, value, growth) to catch the next “hot” concept before the rest of the market does.
- Stock-picking by looking at individual issues in an attempt to find undervalued stocks – that is, to buy low and sell high.

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2.2.5 Passive portfolio management strategy

Passive management is a strategy where investment managers make as few decisions as possible in order to minimize transaction costs, and incidences of capital gains tax. A popular method is to mimic performance of an externally specified index.

The rationale behind indexing stems from three concepts of financial economics

- Efficient Market Hypothesis – Equilibrium market prices fully reflect all available information, and it is impossible to systematically beat the market. Hence trying to beat the market becomes a game of chance not skill.
- Principal-agent problem – An investor (principal) who allocates money to a portfolio manager (agent) must properly give incentives to the manager to run the portfolio in accordance with the investor's risk-return appetite, and must monitor the manager's performance.
- Capital Asset Pricing Model (CAPM) and relevant portfolio separation theorem – In equilibrium, all investors will hold a mixture of the market portfolio and a riskless assets, that is under suitable conditions, portfolio index to the market is the only portfolio investors need.

Holding securities for relatively long periods in small and infrequent changes is the theoretical summation of passive portfolio management. Passive managers generally act as if the security markets are relatively efficient and their decisions are consistent with the acceptance of consensus estimates of risk and return. Portfolio managed in this way acts as surrogate for the market portfolio, or they may be portfolio tailor made to suit the investors. Passive Portfolio managers do not try to outperform the designated benchmarks. Instead they tend to mimic the stock market index by tracking returns on selected benchmark to capitalize on its long-term performance while keeping all costs at a minimum. The portfolio is only altered when

- Investors risk preferences or risk tolerance level has changed
- Consensus forecast about the risk and return of the benchmark portfolio has changed.
- Investor's investment objective has changed.

Indexation can be done in various ways. Solnik, (2000). And they include

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- Full replication – All securities in the index are bought, with proper weighting based on their market values. This technique closely tracks the index, but it can be suboptimal since many securities will have to be bought hence increasing transaction costs that will detract from performance. Reinvestment of dividends will also result in high commissions when many firms pay dividends at different times in the year, hence the element of suboptimality.
- Stratified sampling – tracking index by holding a representative sample of securities. Securities are grouped according to various criteria – firm's size, industry – while the index portfolio sample attempts to replicate the characteristics of the index along the various criteria. The aim is to minimize deviations between portfolio and target market index.
- Optimizing sampling – Statistical method based on a large number of factors or attributes, and using optimizing techniques based on historical information on price changes and correlation relationships to construct the right portfolio. However this technique heavily relies on historical price changes and correlations, and since they change over time very large tracking errors can be experienced.
- Synthetic replication – Replicating stock index by using futures – derivatives - constructed on the index plus a cash position. Fair pricing of the futures ensures good tracking of the index and keeping transaction costs low.

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2.3 EMPIRICAL EVIDENCE ON PORTFOLIO MANAGEMENT STRATEGIES

OUTSIDE KENYA

When faced with the decision of choosing appropriate portfolio management strategy, an investor must trade off between the low-cost but less exciting alternatives of indexing versus the higher-cost but potentially more lucrative alternative of active portfolio management. Sorensen et al (Financial Analyst Journal, September/October 1998) have noted that the critical factor in this evaluation is the stock-picking skill of the portfolio manager. Using pension fund performance data from 1985 – 1997 period, they found out that optimal allocation to indexing declines as managerial skill increases. However, they also conclude that some indexing is appropriate for funds in most risk objective classes.

Larsen et al (Journal of Portfolio management, 1998) set to study and compare the effect of portfolio composition on the tracking performance of indexed portfolios using residual risk minimization technique. The objective of the study was to provide a generalized analysis of the tracking performance of indexed portfolios by controlling for specific index and indexed portfolio characteristics. Using data from Chicago Center for Research in Security Prices for the period 1818 – 1995, they found that passive index funds that buy and hold the stocks in high-capitalization major market indexes like S&P 500 stock index have beaten the vast majority of actively run stock funds over the period of the study.

The repeated observation that managers have a tough time beating stock market index in United States or the United Kingdom has led large U.S and British funds to index a significant part of their domestic assets. Solnik, (2000).

Bauman and Miller (Financial Analyst Journal, March – April 1995) carried out a study to determine the impact, if any, that the type of portfolio policies or style have on the predictability of future performance ranking when performance is measured over complete stock market cycles. Using data covering period from December 31, 1972 through September 30, 1991 (furnished by Callan Associates, Inc.), and basing the study on time periods representing complete stock market cycles – each commencing with a market peak, followed by a trough, and ending with subsequent market peak. They found out that portfolio performance characteristics are associated with different types of portfolio policies or styles.

Basu (1997) examined the relationship between P/E ratio and investment performance of equity securities. The database represented over 1,400 industrial firms, which actually traded on the New York Stock Exchange (NYSE) between September 1956 to August 1971; with about 500, on average, qualifying for inclusion in each of the 14 years. Beginning with 1956, the P/E ratio of every sample security was computed. The ratios were then ranked and five portfolios were formed consisting of securities with similar P/E ratios. Since over 90% of firms release their financial reports within three months of fiscal year end, the P/E of portfolios were assumed to be purchased on the following April 1. The monthly return on each of these portfolios were then computed for the next 12 months assuming an equal initial investment in each of their respective securities and then a buy and hold policy. The results reported in their paper are consistent with the view that P/E ratio information is not fully reflected in security prices in as rapid a manner as postulated by the semi-strong form of efficient market hypothesis. Instead, it seems that disequilibria persisted in capital markets during the period studied. Securities trading at different multiples of earnings on average seem to have been inappropriately priced vis-avis one another, and opportunities for earning abnormal return were afforded to investors.

2.4 EMPIRICAL EVIDENCE ON PORTFOLIO MANAGEMENT STRATEGIES IN NSE

A review of the empirical studies done in Kenya on portfolio management strategies and portfolio theory reveals that very little work has been done in these areas.

Risk is seen as a problem but investors still choose to invest in risky projects. The justification is that the most risky projects, if successful, offer the greatest reward. Investors therefore usually have to make a selection decision, as to which particular assets from the available alternatives to put their money in and how much to allocate to each of the selected securities. Nyariji (2001)

Securities are a popular form of investing used by millions of investors. They are popular in part, because they offer the investors an opportunity to tailor their investment programs to meet individual needs and preference. Given the size and diversity of the stock market, it is safe to say that no matter what investment objective, there are securities to fit the bill.

For people living off their investment holdings, securities provide a way of earning a steady stream of current income – dividends. For investors less concerned about current income, securities can serve as a basis for long run accumulation of wealth. Investors buy securities for the long haul as away to earn not only dividend but also a steady flow of capital gains. Muthui (2003). The only question that remains to be answered is “what management strategy should be adopted?” as there is a tendency for securities prices to go up and down over time.

Investment can be classified as either active or passive. Active investments are those in which the investor participates in the everyday decision-making regarding the activities and management. Passive management on the other hand involves just putting money in for example shares of quoted company but not being involved in the active running of it. Passive management is an option available to investors, who do not necessarily wish to participate in management, and it presupposes risk and common way of reducing risk is to follow the principle of diversification. Nyariji, (2001).

The Efficient Market Hypothesis (EMH) explains how security prices should behave under the conditions of perfect market characterized by free availability of information, homogenous investor expectations and zero transaction costs. These conditions sufficiently ensure that prices “fully reflect” what is knowable. Obviously, when relevant information to the value of a security is reflected in its current price, the same is unbiased estimate of its intrinsic value. Every time new information is released, the price adjusts towards a new value. Kiweu, (1991). With this kind of price adjustments, the question that lingers in investors’ minds is whether to react to the price changes or to stay indifferent. The answer to the question will depend on the investment objectives set by the investors, and management style adopted – Active or Passive.

Makara (2004) conducted a study on market efficiency at NSE using a test of P/E ratio effect. She ranked securities based on P/E ratios in an ascending order and formed 3 portfolios assuming equal investment in each portfolio; securities with high P/E ratio (top 15), medium P/E ratio securities and low P/E ratio (bottom 15), in the year 1994, and were revised each year to form new portfolio according to P/E ratios. Each of the portfolios were viewed as a mutual fund with a policy of acquiring securities, in a given P/E ratio class in January, holding them for an year, and then reinvesting the proceeds from

disposition in the same class on the following January. The study revealed, that the low P/E ratio portfolios outperformed the high P/E ratio portfolios during the period of the study (1994 to 2003). A probable explanation of the result is the price ratio hypothesis, as Basu (1997) concluded in his study. The hypothesis asserts that securities with very low P/E ratios are thought to be temporarily undervalued, since investors are excessively pessimistic after a series of bad earnings report or other bad news. Once future earnings turn out to be better than the unreasonably gloomy forecasts, the prices adjust.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 POPULATION OF INTEREST

Population of interest consisted of all securities quoted and actively traded at the NSE. Emphasis was concentrated on equity shares (securities) and excluded short sales and any investment in government securities, corporate bonds or commercial papers. Period of study covered 6 years spanning from April 1996 to December 2001, this period was considered to be an adequate time for any return differential between portfolio management strategies if it existed to be detected and analyzed. The period was chosen to avoid the political noise of year 2000 elections as change of government was expected and a lot of uncertainties. The study was limited to quoted securities only due to lack of readily available data – share prices and dividend payment – among private companies.

3.2 SAMPLING DESIGN

Sampling frame was in two fold

- I. NSE 20-share index securities – the entire securities in the index were picked to act as the surrogate for the passively managed portfolio. (See Appendix A)
- II. Securities included in actively managed portfolio were sampled from the quoted securities at both counters (Main Investment Market Segment and Alternative Investment Market Segment) of NSE using P/E ratio to rank the securities into top 5 securities and bottom 5 securities. The portfolios were formed to act as the surrogate for the actively managed portfolio. (See Appendix B)

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3.3 DATA COLLECTION

The research relied purely on secondary data for quoted securities obtained from NSE; such data included share prices (adjusted for rights issue, stock splits and stock dividends if any) and dividend payments. In turn they were used to analyze returns for different portfolio management strategies.

For securities selected for inclusion in the portfolio, their weekly opening and closing share prices and dividend (interim and final) information were collected and in turn used to compute their weekly returns.

3.4 DATA ANALYSIS

Data analysis was done in four steps

1. P/E ratio assessment
2. Descriptive statistics: mean return and risk
3. Computation of t-critical values
4. Mean return assessment
 - (i) Weekly portfolios mean return assessment – both for the passively and actively managed portfolios.
 - (ii) Weekly mean return differential assessment between the two portfolio management strategies, using paired t-test as test statistical method.

3.4.1 P/E ratio assessment

P/E ratio of all securities traded at the NSE were computed and then ranked. Top 5 securities were categorized to form a portfolio and bottom 5 securities also categorized to form a portfolio (surrogate for active portfolio management). P/E ratios were computed on monthly basis through the period of study, and the securities in top 5 and bottom 5 categories rebalanced accordingly based on the changes in the ranking of securities P/E ratios.

3.4.2 Descriptive statistics: mean return and risk

Mean weekly return of individual securities in the top 5 and bottom 5 portfolios were computed during the period of study using holding period return formula (see section 3.4.4.1)

Weekly standard deviations of the weekly mean returns were also computed and then grouped into years during the period of the study.

3.4.3 Computation of t-critical values and confidence levels

Sensitivity analysis approach was adopted for the study and confidence levels set at 90%, 95% and 99%. The t values were then obtained from the t tables as 1.645, 1.96 and 2.576 for 90%, 95% and 99% confidence levels respectively. The various confidence levels were then used in computing Critical values for assessing the hypothesis set for the study, using population mean interval approach formula.

$$\bar{X} \pm t_{\alpha/2} s/\sqrt{n}$$

Where: \bar{X} - Sample mean

$t_{\alpha/2}$ - Significant level for a two tailed test

s - Sample standard deviation

n - Sample size

Population mean interval formula was adopted since the sample was small and securities quoted at NSE (Population) are approximately normally distributed. Various confidence testing levels were set for the study to test sensitivity of null hypothesis to various Critical values, and increase confidence in the findings of this study. This also reduced the probability of committing type I error - rejecting null hypothesis when it is actually true.

3.4.4 Mean Return Assessment

3.4.4.1. Weekly portfolio mean return assessment

Total weekly return of each security was determined as the sum of capital gains/losses (difference between closing and opening weekly share prices) and dividends. Weekly dividends was estimated by dividing annual dividends (interim and final) of the shares by total number of weeks in a year, while assuming dividends accrued evenly during the year. Weekly returns of individual securities in a formed portfolio were then aggregated using mean approach to give weekly portfolio mean return.

Weekly returns were then measured by computing Holding Period Return (HPR) for each portfolio management strategy from constructed portfolios during the period of the study as below;

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

Where;

HPR = Portfolio holding period return

P_0 = Weekly opening share price

P_1 = Weekly closing share price

D = Weekly dividend per share

HPR was used for this study since

- It captures total return performance of the portfolio – by considering both capital gains/losses and dividend income.
- It can be used to assess returns periods of one year or less – hence allowing for rebalancing of actively managed portfolios and measuring returns there after.

Gitman and Joehnk (2002).

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3.4.4.1.1 Passively managed portfolio mean weekly return

Returns of securities in NSE 20 share index were used as the surrogate measure of the performance of passively managed portfolio, and resulting index return taken to represent return for the passively managed portfolio.

Composition of passively managed portfolio consisted of securities in the NSE 20 share index throughout the period of the study. Weekly opening and closing share prices, and dividend were used to compute weekly Holding Period Return.

3.4.4.1.2 Actively managed portfolio mean weekly return

Actively managed portfolio weekly rebalancing was done using P/E ratio rankings. Weekly rebalancing of the portfolio is to bring out the concept of active portfolio management. Rebalancing was done as below;

Step 1: All securities quoted and actively traded at the NSE were picked to form actively managed portfolio sampling frame, and their weekly opening and closing security prices and dividends were collected.

Step 2: P/E ratios of all securities actively traded at the NSE were computed and ranked. Top 5 securities were categorized to form a portfolio and bottom 5 securities also categorized to form a portfolio; the said portfolios acted as the surrogate portfolios for active management. P/E ratios were computed on a monthly basis through the period of the study and the two categories of securities rebalanced accordingly when there was a change in ranking/composition of top 5 and bottom 5 securities; this was to bring out the concept of active portfolio management. Rankings were maintained from one month to the next.

Step 3: Weekly mean returns for actively managed portfolio (top 5 and bottom 5 securities) formed above were then computed and the same compared to weekly mean returns for passively managed portfolio during return differential assessment.

3.4.4.2 Weekly Mean Return differential assessment

Weekly mean returns computed above – for both portfolio management strategies – were then analyzed and compared to determine if there is any significant statistical mean return differential. The study did not factor in transaction costs effect on the returns of both portfolio management strategies.

Paired t-test comparison at various confidence levels of 90%, 95% and 99% were used to test for any significant statistical difference in mean return between the two portfolio management strategies, and in turn used to accept or reject the null hypothesis set for the study – see section 1.3.

3.4.5 Paired t-test statistics

Value of paired t statistics was computed as below;

$$t = \frac{\bar{d}}{S_d / \sqrt{n}}$$

Where;

\bar{d} – weekly portfolio management strategy mean return differential

$$\bar{d} = \frac{\sum d}{n}$$

S_d - Standard error/deviation of the portfolio management strategy mean difference. This was computed from portfolio management strategy sample variance as,

$$S_d = \sqrt{\frac{\sum (d - \bar{d})^2}{n - 1}}$$

n – Number of weeks in the period of study, and for which portfolio management strategies returns were compared.

$n - 1$ – Was used in the S_d computation since securities population variance were not know/computed, instead samples were picked to represent the population. It was also used to find degrees of freedom used in allocating the critical value – value used to accept or reject hypothesis (section 1.3) set for the study – from t tables.

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The computed value of t statistics was then compared to the computed critical values using two-tailed test to determine whether the set hypothesis for the study should be accepted or rejected.

Paired t test statistics was chosen for this study since,

- Weekly returns for both portfolio management strategies were computed for securities sampled from same population set, hence common risk factors like market return.
- Samples used for both portfolio management strategies are depended since they are all traded in the same market, and some securities found their way into both portfolios constructed.
- Standard error/deviation computed from the differences between weekly portfolio returns took account of correlation between the portfolio returns.

DeFusco et al (AIMR, 2001).

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CHAPTER 4: FINDINGS AND INTERPRETATION

4. PRICE EARNING (P/E) RATIO

Table 1 below: Shows P/E ratios of various groupings of securities, that is bottom 5 and top 5 securities (surrogate for active portfolio management) and NSE 20 share index constituent securities (surrogate for passive portfolio management).

Bottom 5 securities have P/E ratios ranging from 18.58 to 63.20, with mean of 33.77. NSE 20 share index constituent securities have P/E ratio ranging from 7.55 to 23.09, with mean of 13.61. Top 5 securities have P/E ratio ranging from -3.85 to 4.03, with mean of 0.69.

The P/E ratios of bottom 5 securities are far a part from the P/E ratio of top 5 securities, hence warranting the groupings into different categories. This brings out the idea of active portfolio management by either securities of companies with high P/E ratio or low P/E ratio.

Year	Number	P/E RATIO
1996	5	4.03***
1997	5	-0.02***
1998	5	-2.29***
1999	5	3.49***
2000	5	2.81***
2001	5	-3.85***
Average	5	0.69

***Computation of P/E ratios included in appendix C

Category	Number	P/E RATIO
Bottom 5 Securities	5	33.77
NSE 20 Share Index	20	13.61
Top 5 Securities	5	0.69

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Bottom 5 Securities

Year	Number	P/E RATIO
1996	5	63.20*
1997	5	39.43*
1998	5	28.40*
1999	5	26.17*
2000	5	26.85*
2001	5	18.58*
Average	5	33.77

* Computation of P/E ratios included in appendix C

NSE 20 Share Index Constituent Securities

Year	Number	P/E RATIO
1996	20	23.09**
1997	20	15.27**
1998	20	11.02**
1999	20	12.63**
2000	20	12.08**
2001	20	7.55**
Average	20	13.61

** Computation of P/E ratios included in appendix C1

Top 5 Securities

Year	Number	P/E RATIO
1996	5	4.03***
1997	5	-0.02***
1998	5	-2.29***
1999	5	3.49***
2000	5	2.81***
2001	5	-3.85***
Average	5	0.69

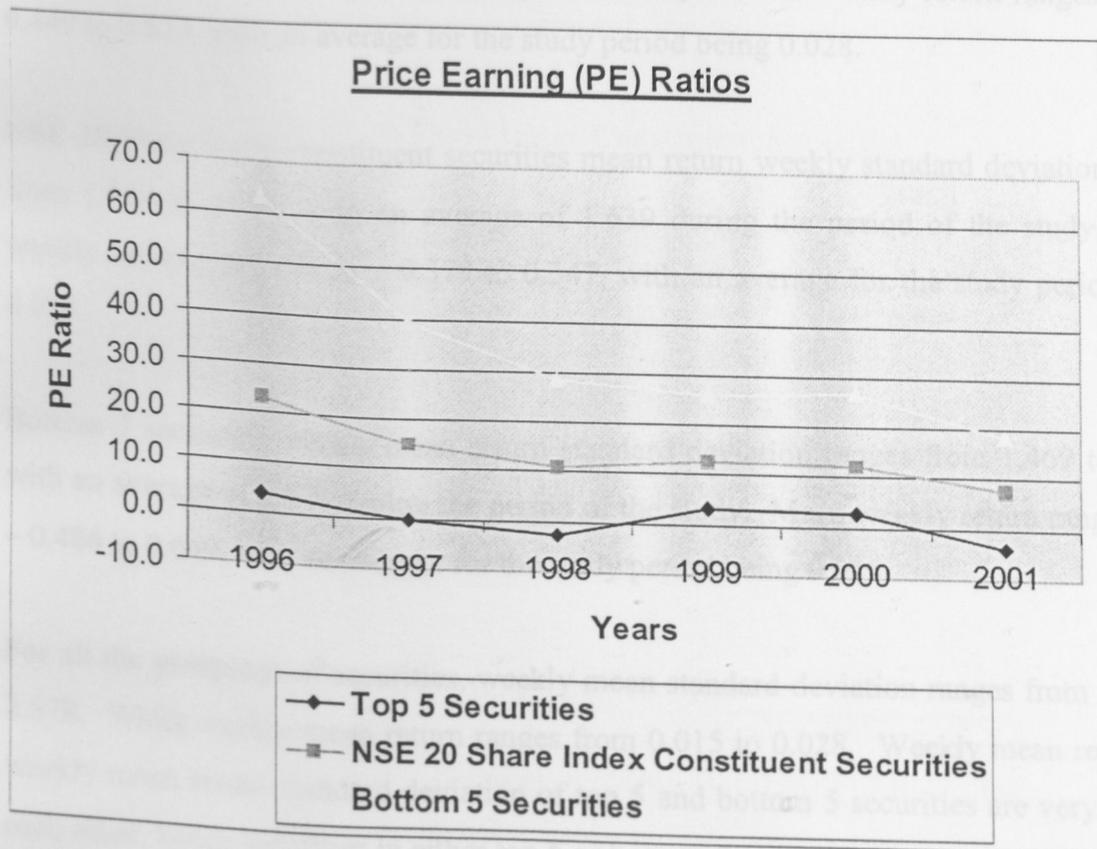
*** Computation of P/E ratios included in appendix C

Summary of Price Earning Ratios

Category	Number	P/E RATIO
Bottom 5 Securities	5	33.77
NSE 20 Share index	20	13.61
Top 5 Securities	5	0.69

4.1 Price Earning Ratio graph

Graph 1: The graph below shows the movement in P/E ratio of bottom 5 and top 5 securities and NSE 20 share index constituent securities. The P/E ratio trend lines of the groupings do not intersect each other at any point; arguably P/E ratio can be used to group securities into different portfolios and at the same time used to rebalance portfolios from time to time as the P/E ratio changes.



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4.2 DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK

Table 2 below: Shows annualized mean returns and mean standard deviations of various categories of securities, that is, top 5, bottom 5 and NSE 20 share index constituent securities.

Top 5 securities weekly mean return standard deviation ranges from 1.534 to 4.335, with an average of 2.549 during the period of the study. Mean weekly return ranges from -0.449 to 0.523, with an average for the study period being 0.028.

NSE 20 Share index constituent securities mean return weekly standard deviation ranges from 1.048 to 2.489, with an average of 1.639 during the period of the study. Mean weekly return ranges from -0.379 to 0.347, with an average for the study period being 0.025.

Bottom 5 securities weekly mean return standard deviation ranges from 1.469 to 4.220, with an average of 2.578 during the period of the study. Mean weekly return ranges from -0.486 to 0.649, with an average for the study period being 0.015.

For all the groupings of securities, weekly mean standard deviation ranges from 1.639 to 2.578. While weekly mean return ranges from 0.015 to 0.028. Weekly mean return and weekly mean return standard deviation of top 5 and bottom 5 securities are very close to each other, hence securities in either top 5 or bottom 5 categories can be used to rebalance actively managed portfolio.

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Top 5 Securities

Year	Number	Mean Return	Mean Std Deviation
1996	5	0.336*	1.534*
1997	5	0.523*	4.335*
1998	5	-0.051*	2.386*
1999	5	0.054*	1.890*
2000	5	-0.449*	2.336*
2001	5	-0.248*	2.814*
Average	5	0.028	2.549

* Computation of annual mean return and mean std deviation are included in appendix D

NSE 20 Share Index Constituent Securities

Year	Number	Mean Return	Mean Std Deviation
1996	20	0.249**	1.314**
1997	20	0.347**	2.489**
1998	20	0.320**	1.850**
1999	20	-0.148**	1.419**
2000	20	-0.241**	1.048**
2001	20	-0.379**	1.717**
Average	20	0.025	1.639

** Computation of annual mean return and mean std deviation are included in appendix D1

Bottom 5 Securities

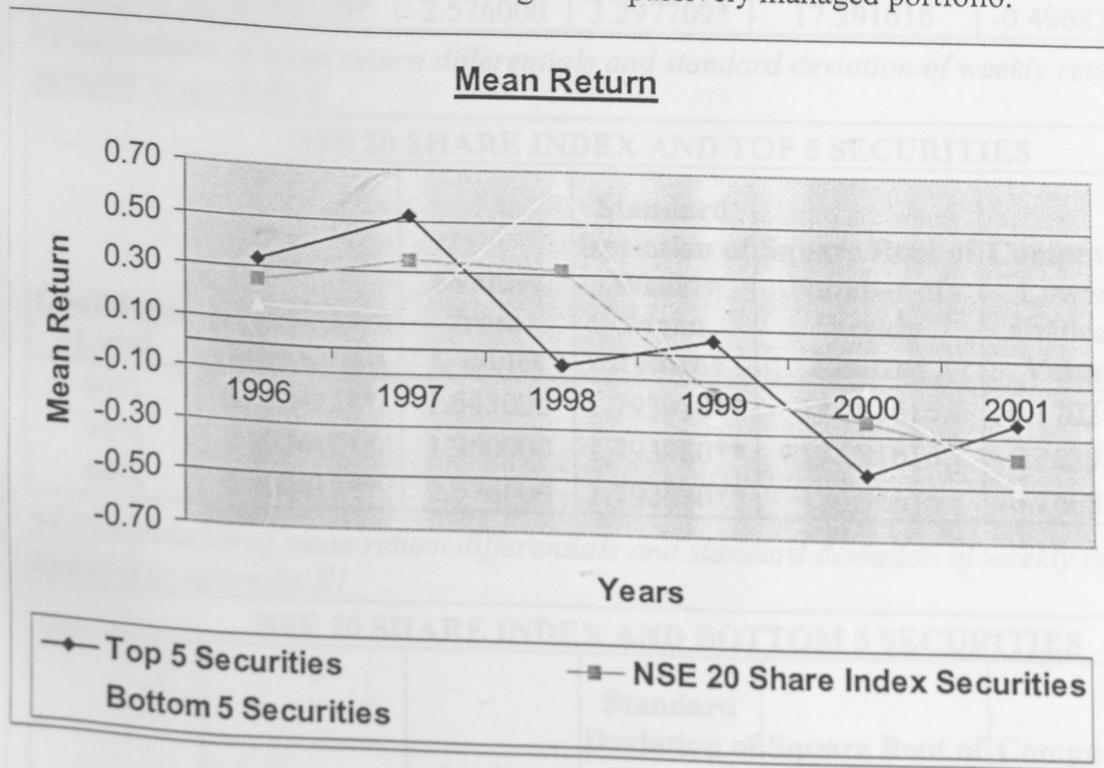
Year	Number	Mean Return	Mean Std Deviation
1996	5	0.153***	1.469***
1997	5	0.143***	2.893***
1998	5	0.649***	3.094***
1999	5	-0.236***	2.265***
2000	5	-0.134***	1.528***
2001	5	-0.486***	4.220***
Average	5	0.015	2.578

*** Computation of annual mean return and mean std deviation are included in appendix D2

Category	Number	Mean Return	Mean Std Deviation
Top 5 Securities	5	0.028	2.549
NSE 20 Share index	20	0.025	1.639
Bottom 5 Securities	5	0.015	2.578

4.2.1 Mean Return graph

Graph 2 below: Shows the movement in annual mean returns in different categories of securities, that is, top 5, bottom 5 securities and NSE 20 share index constituent securities. From the graph it can be observed that the returns of top 5 securities, bottom 5 securities and NSE 20 share index constituent securities are intersecting each other at various points. Arguably, this indicates that either securities of top 5 or bottom 5 securities can be used as the surrogate for actively managed portfolio and NSE 20 share index constituent securities as the surrogate for passively managed portfolio.



4.3 COMPUTATION OF CRITICAL VALUES

Table 3 below: Shows the computed lower and upper Critical values at different confidence levels; the computation were done using population mean formula approach – See section 3.4.3

The computed lower and upper critical values as per the table above were used in assessing significance of mean return differentials – See section 4.4

TOP 5 AND BOTTOM 5 SECURITIES						
Confidence Level	Mean Return Differentials	t-values from t tables	Standard Deviation of Weekly Mean Returns	Square Root of Number of Weekly Returns	Computed Lower Critical Value	Computed Upper Critical Value
90%	-0.005549*	1.645000	3.297709*	17.291616	-0.319269	0.308171
95%	-0.005549*	1.960000	3.297709*	17.291616	-0.379343	0.368246
99%	-0.005549*	2.576000	3.297709*	17.291616	-0.496822	0.485724

* Computation of mean return differentials and standard deviation of weekly returns are included in appendix E

NSE 20 SHARE INDEX AND TOP 5 SECURITIES						
Confidence Level	Mean Return Differentials	t-values from t tables	Standard Deviation of Weekly Mean Returns	Square Root of Number of Weekly Returns	Computed Lower Critical Value	Computed Upper Critical Value
90%	0.000412**	1.645000	1.793980**	17.291616	-0.170254	0.171079
95%	0.000412**	1.960000	1.793980**	17.291616	-0.202935	0.203760
99%	0.000412**	2.576000	1.793980**	17.291616	-0.266844	0.267669

** Computation of mean return differentials and standard deviation of weekly returns are included in appendix E1

NSE 20 SHARE INDEX AND BOTTOM 5 SECURITIES						
Confidence Level	Mean Return Differentials	t-values from t tables	Standard Deviation of Weekly Mean Returns	Square Root of Number of Weekly Returns	Computed Lower Critical Value	Computed Upper Critical Value
90%	0.005961***	1.645000	2.071573***	17.291616	-0.191113	0.203036
95%	0.005961***	1.960000	2.071573***	17.291616	-0.228851	0.240774
99%	0.005961***	2.576000	2.071573***	17.291616	-0.302649	0.314572

*** Computation of mean return differentials and standard deviation of weekly returns are included in appendix E2

4.4 MEAN RETURN

Weekly mean returns were assessed for various groupings of securities

- I. Weekly mean return of top 5 securities compared to weekly mean return of bottom 5 securities
- II. Weekly mean return of top 5 securities compared to weekly mean return NSE 20 share index constituent securities.
- III. Weekly mean return of bottom 5 securities compared to weekly mean return NSE 20 share index constituent securities.

4.4.1 Weekly mean return of top 5 securities compared to weekly mean return of bottom 5 securities

Table 4 below: Shows the computed lower and upper t critical values and t-statistics values of the mean return differentials of top 5 securities compared to bottom 5 securities at different confidence levels.

Confidence Level	Computed t values		t-statistics value	Remarks
	Lower Critical Value	Upper Critical Value		
90%	-0.319269	0.308171	-0.029096*	Not statistically significant
95%	-0.379343	0.368246	-0.029096*	Not statistically significant
99%	-0.496822	0.485724	-0.029096*	Not statistically significant

* Computation of t-statistics value is included in appendix E

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At 90% confidence level, the computed Critical value ranges from -0.319269 to 0.308171 , while the t-statistic for the study is -0.029096 , hence falling within the range of critical value (acceptance region). Thus the difference between mean returns is not statistically significant.

At 95% confidence level, the computed Critical value ranges from -0.379343 to 0.368246 , while the t-statistic for the study is -0.029096 , hence falling within the range of critical value (acceptance region). Thus the difference between mean returns is not statistically significant.

At 99% confidence level, the computed Critical value ranges from -0.496822 to 0.485724 , while the t-statistic for the study is -0.029096 , hence falling within the range of critical value (acceptance region). Thus the difference between mean returns is not statistically significant.

Upper Critical Value	t-statistics value	Remarks
0.283760	0.003976**	Not statistically significant
0.267669	0.003976**	Not statistically significant

From the above, it can be inferred that there is no significant statistical difference in mean returns between securities of top 5 and bottom 5 securities, and any of the categories can be used to rebalance actively managed portfolio. It then follows that rebalancing of actively managed portfolio can be done using either top 5 securities or bottom 5 securities, as there is no significant statistical mean return difference between the categories.

At 90% confidence level, the computed Critical value ranges from -0.202935 to 0.202935 , while the t-statistic for the study is 0.003976 , hence falling within the range of critical value (acceptance region). Thus the mean return differential is not statistically significant.

At 95% confidence level, the computed Critical value ranges from -0.266844 to 0.266844 , while the t-statistic for the study is 0.003976 , hence falling within the range of critical value (acceptance region). Thus the mean return differential is not statistically significant.

From the above, it can be inferred that there is no significant statistical difference in mean returns between actively managed portfolio (represented by top 5 securities) and

4.4.2 Weekly mean return of top 5 securities compared to weekly mean return of NSE 20 share index constituent securities.

Table 5 below: Shows the computed lower and upper t critical values and t-statistics values of the mean return differentials of top 5 securities compared to NSE 20 share index constituent securities at different confidence levels.

Confidence Level	Computed t values		t-statistics value	Remarks
	Lower Critical Value	Upper Critical Value		
90%	-0.170254	0.171079	0.003976**	Not statistically significant
95%	-0.202935	0.203760	0.003976**	Not statistically significant
99%	-0.266844	0.267669	0.003976**	Not statistically significant

** Computation of t-statistics value is included in appendix E₁

At 90% confidence level, the computed Critical value ranges from - 0.170254 to 0.171079, while the t-statistic for the study is 0.003976, hence falling within the range of critical value (acceptance region). Thus the mean return differential is not statistically significant.

At 95% confidence level, the computed Critical value ranges from - 0.202935 to 0.203760, while the t-statistic for the study is 0.003976, hence falling within the range of critical value (acceptance region). Thus the mean return differential is not statistically significant.

At 99% confidence level, the computed Critical value ranges from - 0.266844 to 0.267669, while the t-statistic for the study is 0.003976, hence falling within the range of critical value (acceptance region). Thus the mean return differential is not statistically significant.

From the above, it can be inferred that there is no significant statistical difference in mean returns between actively managed portfolio (represented by top 5 securities) and

passively managed portfolio (represented by NSE 20 Share index constituent securities). An investor can opt for passive portfolio management style or active portfolio management style, as the returns are not expected to be significantly different.

4.4.3 Weekly mean return of bottom 5 securities compared to mean return of NSE 20 share index constituent securities.

Table 6 below: Shows the computed lower and upper t critical values and t-statistics values of the mean return differentials of bottom 5 securities compared to NSE 20 share index constituent securities at different confidence levels.

Confidence Level	Computed t values		t-statistics value	Remarks
	Lower Critical Value	Upper Critical Value		
90%	-0.191113	0.203036	0.049760***	Not statistically significant
95%	-0.228851	0.240774	0.049760***	Not statistically significant
99%	-0.302649	0.314572	0.049760***	Not statistically significant

*** Computation of t-statistics value is included in appendix E₂

At 90% confidence level, the computed Critical value ranges from - 0.191113 to 0.203036, while the t-statistic for the study is 0.049760, hence falling within the range of critical value (acceptance region). Thus mean return differential is not statistically significant.

At 95% confidence level, the computed Critical value ranges from - 0.228851 to 0.240774, while the t-statistic for the study is 0.049760, hence falling within the range of critical value (acceptance region). Thus mean return differential is not statistically significant.

At 99% confidence level, the computed Critical value ranges from -0.302649 to 0.314572 , while the t-statistic for the study is 0.049760 , hence falling within the range of critical value (acceptance region). Thus mean return differential is not statistically significant.

From the above, it can be inferred that there is no significant statistical difference in mean returns between actively managed portfolio (represented by bottom 5 securities) and passively managed portfolio (represented by NSE 20 Share index constituent securities). An investor can opt for active or passive portfolio management style, as the returns are not expected to be significantly different.

From the above sensitivity analyses, t- statistics fall within the range of computed Critical values (acceptance region) at different confidence levels. Rebalancing of actively managed portfolio can be done using either top 5 securities or bottom 5 securities as there is no significant statistical mean return difference. It then follows that there is no significant statistical return difference between actively managed portfolio (represented by either top 5 or bottom 5 securities) and passively managed portfolio (represented by NSE 20 Share index constituent securities), hence an investor can opt for any of the portfolio management styles in Nairobi Stock Exchange.

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CHAPTER 5: SUMMARY AND CONCLUSION

5.1 Summary of findings and conclusion

The study has revealed the following

- (i) There is no significant statistical difference in mean return between top 5 securities and bottom 5 securities at different confidence levels of 90%, 95% and 99%, and any of the groupings can be used to rebalance actively managed portfolio.
- (ii) There is no significant statistical difference in mean return between actively managed portfolio (represented by top 5 securities) and passively managed portfolio (represented by NSE 20 share index constituent securities) at different confidence levels of 90%, 95% and 99%.
- (iii) There is no significant statistical difference in mean return between actively managed portfolio (represented by bottom 5 securities) and passively managed portfolio (represented by NSE 20 share index constituent securities) at different confidence levels of 90%, 95% and 99%.

Various sensitivity analyses carried out on data during the period of the study (April 1996 to December 2001), confirmed null hypothesis set for the study, and it can be concluded that there is no significant difference in return between actively managed and passively managed portfolios at the Nairobi Stock Exchange.

It should be noted that, the debate on active versus passive portfolio management is set to continue into the future. During tough stock market years, active managers will likely declare victory, and during bull market years indexers will make triumphant boasts. Sorensen et al (Financial Analyst Journal, September – October 1998).

5.2 Recommendations

This study sought to examine and compare returns between two portfolio management strategies (active and passive management styles) at the NSE, and to determine whether there is a management style that dominates over the other in terms of return performance. The return performance was assessed by modeling past security prices at the NSE between April 1996 and December 2001.

The study has shown that, if transaction costs are not in built to both portfolio management styles then, none of the management styles dominate over the other. Hence an investor can opt for any of the portfolio management styles in Nairobi Stock Exchange.

5.3 Problems and Limitations

Short period of study April 1996 to December 2001; the period should be long enough say 20 years to enable establishment of relationship between return and management strategy adopted for a given portfolio.

Nairobi Stock Exchange is an emerging market that has low level of trading and still in weak form of efficiency, and the share prices do not readily pick up information as they flow into the market. This was a major impediment for the study as active portfolio managers depend on miss pricing of securities based on the intrinsic values which depends on real values of Companies in question; and this is through information that flows into the market.

5.4 Suggestions for future work

In-building transaction costs incurred in active portfolio management to enable clear picture of actively management return to be seen. Arshanapalli et al (2004) asserts that the effect of transaction costs on an active managed portfolio is substantial and wealth depletion rate depends very much on how often trades are made during the holding period, since transaction costs cannot be avoided in the real world, an investor should be cautious about changing the asset mix of a portfolio when transaction costs are high and market expectations are doubtful.

Research should be carried out after five or so years to find out whether the observations made in this study have changed since December 2001.

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APPENDIX A

NSE 20 Share index Constituent Companies

	Company Name	Short Name
1	Brooke Bond Ltd.	BBOND
2	George Williamson Kenya Ltd.	GWK
3	Kakuzi	KAKUZI
4	Sasini Tea & Coffee Ltd	SASINI
5	Uchumi Supermarket Ltd.	UCHUMI
6	Kenya Airways Ltd	KENAIR
7	Nation Media Group	NMG
8	Tourism Promotion Services Ltd (Serena)	SERENA
9	Barclays Bank Ltd	BBK
10	Diamond Trust Bank Kenya Ltd	DTK
11	Kenya Commercial Bank Ltd	KCB
12	Standard Chartered Bank Ltd	SCB
13	National Industrial Credit Ltd	NIC
14	Bamburi Cement Ltd	BAMB
15	British American Tobacco Kenya Ltd	BAT
16	B.O.C Kenya Ltd	BOC
17	East African Breweries Ltd	EABL
18	Firestone East Africa Ltd	FIRE
19	Kenya Power & Lighting Ltd	KPLC
20	Total Kenya Ltd	TOTAL

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APPENDIX B

COMPANIES LISTED AT NSE DURING THE PERIOD OF STUDY

	Company Name	Short Name		Company Name	Short Name
1	A.Baumann & Co.Ltd	ABOUM	25	Housing Finance Co Ltd	HFCK
2	Athi River Mining	ARM	26	I.C.D.C Investments Co Ltd	ICDC
3	B.O.C Kenya Ltd	BOC	27	Jubilee Insurance Co. Ltd	JUB
4	Bamburi Cement Ltd	BAMB	28	Kakuzi	KAKUZI
5	Barclays Bank Ltd	BBK	29	Kapchorua Tea Co. Ltd	KAPCHO
6	Pan African Insurance Ltd	PANAFR	30	Kenya Airways Ltd	KENAIR
7	British American Tobacco Kenya Ltd	BAT	31	Kenya Commercial Bank Ltd	KCB
8	Brooke Bond Ltd.	BBOND	32	Kenya National Mills Ltd	KNM
9	C.F.C Bank Ltd	CFC	33	Kenya Oil Co Ltd	KENOL
10	Car & General (K) Ltd	CGEN	34	Kenya Power & Lighting Ltd	KPLC
11	Carbacid Investments Ltd	CARB	35	Limuru Tea Co. Ltd	LIMTEA
12	City Trust Ltd	CTRUST	36	Marshalls (E.A.) Ltd	MARSH
13	CMC Holdings Ltd	CMC	37	Nation Media Group	NMG
14	Crown Berger Ltd	CBERG	38	National Bank of Kenya Ltd	NBK
15	Diamond Trust Bank Kenya Ltd	DTK	39	National Industrial Credit Ltd	NIC
16	Dunlop Kenya	DUN	40	NIC Bank Ltd.	NICB
17	E.A.Cables Ltd	EACABL	41	Rea Vipingo Plantations Ltd.	REAVIP
18	E.A.Packaging Ltd	EAPACK	42	Sasini Tea & Coffee Ltd	SASINI
19	E.A.Portland Cement Ltd	EAPORT	43	Standard Chartered Bank Ltd	SCB
20	Eaagads Ltd.	EAGADS	44	Standard Newspaper Group	SMG
21	East African Breweries Ltd	EABL	45	Total Kenya Ltd	TOTAL
22	Express Ltd	EXPRES	46	Tourism Promotion Services Ltd	SERENA
23	Firestone East Africa Ltd	FIRE	47	Uchumi Supermarket Ltd.	UCHUMI
24	George Williamson Kenya Ltd.	GWK	48	Unga Group Ltd	UNGA

PRICE EARNING (P/E) RATIOS
TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES							BOTTOM 5 COMPANIES						
MONTH	KPL	KENAIR	KCB	NMG	FIRE	AVERAGE	MONTH	KAKUZI	EABL	GWK	TOTAL	BBOND	AVERAGE
April 1996	1.21	2.67	3.66	4.81	5.98	3.67	April 1996	24.91	32.29	44.59	47.06	166.10	62.99
May 1996	1.22	2.67	3.71	5.09	6.38	3.82	May 1996	27.02	32.66	44.76	51.06	172.01	65.50
June 1996	1.29	2.78	3.45	5.48	6.87	3.97	June 1996	28.84	34.77	52.48	48.99	172.42	67.50
July 1996	1.53	2.52	3.51	6.12	7.40	4.22	July 1996	26.90	36.75	47.36	46.78	174.52	66.46
August 1996	1.60	2.23	3.59	6.11	7.06	4.12							
								SASINI	KAKUZI	TOTAL	GWK	BBOND	
September 1996	1.63	3.42	3.48	5.89	5.98	4.04	August 1996	17.05	26.23	43.39	47.58	173.27	61.50
							September 1996	16.97	26.82	40.29	48.92	172.63	61.13
October 1996	1.78	3.14	3.47	5.41	6.47	4.05	October 1996	17.26	27.59	38.95	50.41	173.30	61.50
November 1996	2.04	3.01	3.59	5.28	6.49	4.08	November 1996	18.21	27.82	36.44	51.58	169.18	60.64
December 1996	2.20	2.65	4.19	5.35	6.58	4.27	December 1996	23.98	28.02	35.69	51.77	168.56	61.60
Average PE Ratio for the Year 1996						4.03	Average PE Ratio for the Year 1996						63.20
MONTH	KENAIR	KPL	KCB	BBK	NMG	AVERAGE	MONTH	SASINI	KAKUZI	TOTAL	GWK	BBOND	AVERAGE
January 1997	3.08	3.57	5.29	6.13	6.75	4.97	January 1997	27.03	28.39	45.30	53.18	150.23	60.83
February 1997	2.83	5.47	5.79	6.39	6.66	5.43	February 1997	25.91	28.72	44.44	54.34	146.44	59.97
March 1997	2.80	5.61	5.69	5.52	6.69	5.26							
								KAKUZI	SASINI	TOTAL	BBOND	GWK	
April 1997	-31.11	2.66	5.09	5.43	5.78	-2.43	March 1997	29.28	29.66	37.17	42.52	54.03	38.53
May 1997	-33.36	2.76	5.60	5.71	6.58	-2.54	April 1997	18.85	30.53	36.32	52.07	61.79	39.91
							May 1997	19.08	30.64	36.62	51.38	65.36	40.61
June 1997	-33.10	2.74	5.65	6.26	6.71	-2.35	June 1997	18.88	31.60	36.28	51.56	64.42	40.55
July 1997	-32.63	2.66	5.52	6.36	6.98	-2.22							
August 1997	-31.33	2.63	5.40	5.77	6.67	-2.17	July 1997	18.61	18.98	33.04	35.48	62.42	33.71
							August 1997	15.92	19.82	33.15	36.34	59.18	32.88
September 1997	-27.75	4.31	5.33	5.88	6.38	-1.17							
								BAMBU	KAKUZI	BBOND	SASINI	TOTAL	
October 1997	-26.05	4.05	5.14	5.45	6.02	-1.08	September 1997	20.78	20.86	35.47	38.79	57.04	34.59
November 1997	-24.96	3.86	4.67	5.32	5.57	-1.11	October 1997	18.82	20.04	35.73	37.90	53.05	33.11
December 1997	-23.70	3.95	4.49	5.62	5.88	-0.79	November 1997	17.51	17.61	35.28	36.82	50.01	31.45
							December 1997	12.79	15.81	32.61	23.27	50.41	26.98
Average PE Ratio for the Year 1997						-0.02	Average PE Ratio for the Year 1997						39.43
MONTH	DTK	KENAIR	KCB	BAT	BBK	AVERAGE	MONTH	GWK	BAMBU	SASINI	BBOND	TOTAL	AVERAGE
January 1998	-24.84	4.62	5.10	5.96	5.98	-0.64	January 1998	13.71	19.55	23.91	37.94	57.62	30.55
February 1998	-24.27	4.17	4.86	5.99	6.23	-0.60	February 1998	17.39	17.86	26.30	37.92	58.74	31.64
March 1998	-24.43	-24.11	4.03	4.29	5.48	-6.95	March 1998	17.81	18.25	19.71	29.44	53.05	27.65
							April 1998	12.45	15.55	23.31	29.40	59.21	27.98
April 1998	-24.08	3.90	4.10	5.04	5.25	-1.16	May 1998	11.71	14.97	22.91	27.56	53.53	26.14
May 1998	-24.33	3.83	3.97	5.10	5.26	-1.23	June 1998	12.66	16.32	23.53	29.42	53.04	26.99
June 1998	-26.48	3.78	4.08	5.61	5.30	-1.54							
							July 1998	14.01	14.37	15.45	28.63	53.44	25.18
July 1998	-28.61	4.07	4.09	4.35	5.30	-2.16							
August 1998	-30.36	4.11	4.10	4.18	5.60	-2.48	August 1998	14.01	15.16	29.40	41.12	53.43	30.62
							September 1998	14.26	15.68	28.76	38.99	51.50	29.84
September 1998	-30.56	2.44	3.84	4.09	5.01	-3.04	October 1998	13.53	14.13	28.85	36.22	47.78	28.10
October 1998	-29.79	2.51	3.42	4.16	4.94	-2.95	November 1998	13.27	15.33	26.98	36.18	45.33	27.42
November 1998	-25.82	2.55	3.44	4.24	4.35	-2.25	December 1998	13.38	16.31	21.69	41.81	50.04	28.64
December 1998	-27.32	2.63	3.26	4.29	4.78	-2.47							
Average PE Ratio for the Year 1998						-2.29	Average PE Ratio for the Year 1998						28.40

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PRICE EARNING (P/E) RATIOS
TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES							BOTTOM 5 COMPANIES						
MONTH	BOND	KENAI	KCB	GWK	NIC	AVERAGE	MONTH	BAMBU	NMG	SASINI	EABL	TOTAL	AVERAGE
January 1999	-29.24	2.95	3.75	4.48	5.79	-2.45	January 1999	17.50	17.54	22.54	44.52	67.85	33.99
February 1999	-29.22	2.67	3.69	4.34	5.30	-2.65	February 1999	DTK	NMG	SASINI	EABL	TOTAL	31.33
March 1999	KENAI	GWK	NIC	BAT	SCB	4.52	March 1999	SASINI	BAMBU	BBOND	EABL	TOTAL	21.84
April 1999	KENAI	GWK	NIC	SCB	BAT	4.64	April 1999	KAKUZI	BAMBU	TOTAL	BBOND	EABL	28.85
May 1999	KENAI	GWK	NIC	SCB	KPL	4.66	May 1999	KAKUZI	SASINI	TOTAL	BBOND	EABL	29.19
June 1999	2.91	4.50	4.76	5.58	6.07	4.76	June 1999	SASINI	KAKUZI	TOTAL	BBOND	EABL	29.30
July 1999	KENAI	NIC	BAT	KPL	SCB	4.98	July 1999	BAMBU	GWK	TOTAL	BBOND	EABL	30.90
August 1999	2.22	4.54	5.06	5.89	6.38	4.82	August 1999	KAKUZI	BAMBU	GWK	BBOND	TOTAL	22.06
September 1999	KENAI	NIC	KPL	BAT	KCB	4.73	September 1999	GWK	SASINI	BAMBU	BBOND	TOTAL	19.94
October 1999	KENAI	NIC	BAT	KPL	KCB	4.79	October 1999	BAMBU	GWK	SASINI	BBOND	TOTAL	19.35
November 1999	KENAI	NIC	KPL	BAT	KCB	4.51	November 1999	SASINI	GWK	BAMBU	BBOND	TOTAL	18.80
December 1999	KENAI	NIC	BAT	KCB	KPL	4.62	December 1999	GWK	BAMBU	BBOND	TOTAL	SASINI	28.51
Average PE Ratio for the Year 1999						3.49	Average PE Ratio for the Year 1999						26.17
MONTH	KENAI	NIC	BAT	KCB	KPL	AVERAGE	MONTH	GWK	BAMBU	BBOND	TOTAL	SASINI	AVERAGE
January 2000	2.95	4.32	4.78	5.55	5.66	4.65	January 2000	13.77	16.81	22.16	25.39	63.51	28.33
February 2000	2.64	4.26	4.99	5.03	5.60	4.50	February 2000	KAKUZI	BAMBU	BBOND	TOTAL	SASINI	26.57
March 2000	KCB	KENAI	BAT	KPL	NIC	3.35	March 2000	DTK	BAMBU	BBOND	TOTAL	SASINI	25.59
April 2000	KCB	KENAI	KPL	BAT	NIC	3.20	April 2000	BAMBU	BBOND	DTK	KAKUZI	SASINI	28.36
May 2000	-2.67	3.01	4.06	4.91	5.89	3.04	May 2000	16.20	17.27	20.87	35.79	51.62	28.35
June 2000	KCB	KPL	KENAI	BAT	NIC	2.77	June 2000	16.68	16.96	20.13	34.79	52.38	28.19
July 2000	KCB	KENAI	KPL	BAT	NIC	2.69	July 2000	BBOND	BAMBU	DTK	KAKUZI	SASINI	27.53
August 2000	-2.31	2.88	2.97	5.08	5.63	2.85	August 2000	TOTAL	BAMBU	DTK	KAKUZI	SASINI	27.48
September 2000	KCB	KENAI	KPL	NIC	BAT	2.55	September 2000	TOTAL	BBOND	BAMBU	KAKUZI	SASINI	26.95
October 2000	KCB	KPL	KENAI	NIC	BAT	1.55	October 2000	TOTAL	BAMBU	BBOND	KAKUZI	SASINI	27.20
November 2000	-2.72	-2.16	1.37	4.64	5.66	1.36	November 2000	17.08	19.11	19.73	30.39	49.68	27.42
December 2000	-2.32	-2.12	1.40	3.99	5.08	1.20	December 2000	DTK	TOTAL	BAMBU	BBOND	KAKUZI	20.20
Average PE Ratio for the Year 2000						2.81	Average PE Ratio for the Year 2000						26.85
MONTH	KCB	KPL	KENAI	NIC	BAT	AVERAGE	MONTH	DTK	TOTAL	BAMBU	BBOND	KAKUZI	AVERAGE
January 2001	-2.07	-1.98	1.43	4.34	5.23	1.39	January 2001	13.48	15.21	19.71	22.17	28.59	19.83
February 2001	KPL	KCB	KENAI	NIC	BAT	1.24	February 2001	12.70	13.64	19.20	22.01	27.83	19.08
March 2001	KCB	KPL	KENAI	NIC	BBK	0.21	March 2001	SASINI	TOTAL	DTK	KAKUZI	BAMBU	19.59
April 2001	KAKUZI	KCB	KPL	KENAI	NIC	-6.51	April 2001	BBOND	SASINI	GWK	BAMBU	TOTAL	20.58
May 2001	-27.77	-8.26	-1.94	1.23	4.18	-6.20	May 2001	SASINI	BBOND	GWK	TOTAL	BAMBU	18.23
June 2001	-27.58	-7.16	-1.46	1.25	3.97	-5.91	June 2001	9.46	10.88	11.56	21.18	35.01	17.62
July 2001	-27.53	-5.96	-1.41	1.38	3.99	-5.78	July 2001	BAT	UCHUMI	BBOND	TOTAL	BAMBU	17.13
August 2001	-27.23	-5.85	-1.37	1.37	4.17	-5.21	August 2001	9.51	9.57	11.00	21.76	33.81	16.22
September 2001	-24.30	-5.89	-1.23	1.25	4.10	-4.72	September 2001	NMG	BBOND	TOTAL	UCHUMI	BAMBU	17.98
October 2001	-23.60	-5.16	-1.04	2.64	3.56	-4.96	October 2001	BAT	BBOND	TOTAL	UCHUMI	BAMBU	17.42
November 2001	-24.53	-5.49	-0.72	2.48	3.45	-4.96	November 2001	NMG	BBOND	TOTAL	UCHUMI	BAMBU	16.73
December 2001	-25.65	-5.30	-0.51	2.56	4.12	-4.96	December 2001	BBOND	TOTAL	UCHUMI	BAMBU	SASINI	22.55
Average PE Ratio for the Year 2001						-3.85	Average PE Ratio for the Year 2001						18.58

PE Ratio for Top 5 Securities

Year	Number	PE Ratio
1996	5	4.03
1997	5	-0.02
1998	5	-2.29
1999	5	3.49
2000	5	2.81
2001	5	-3.85
Average		0.89

PE Ratio for Bottom 5 securities

Year	Number	PE Ratio
1996	5	63.20
1997	5	38.43
1998	5	28.40
1999	5	26.17
2000	5	26.85
2001	5	18.58
Average		33.77

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**PRICE EARNING (PE) RATIOS
NSE 20 SHARE INDEX CONSTITUENT SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001**

MONTH	BBOND PE Ratio	GWK PE Ratio	KAKUZI PE Ratio	SASINI PE Ratio	UCHUMI PE Ratio	KENAIR PE Ratio	SERENA PE Ratio	NMG PE Ratio	BBK PE Ratio	DTK PE Ratio	KCB PE Ratio	SCB PE Ratio	BAMBU PE Ratio	BAT PE Ratio	BOC PE Ratio	NIC PE Ratio	EABL PE Ratio	FIRE PE Ratio	KPL PE Ratio	TOTAL PE Ratio	AVERAGE
April 1996	166.10	44.59	24.91	17.23	6.76	2.67		4.81	6.29	14.89	3.66	6.38	14.01	10.35	18.73	8.32	32.29	5.98	1.21	47.06	22.96
May 1996	172.01	44.76	27.02	20.28	6.74	2.67		5.09	6.42	14.74	3.71	6.80	15.36	10.41	17.84	8.70	32.66	6.38	1.22	51.06	23.89
June 1996	172.42	52.48	28.84	18.80	6.90	2.78		5.48	6.36	15.23	3.45	7.26	16.59	10.65	17.11	8.86	34.77	6.87	1.29	48.99	24.48
July 1996	174.52	47.36	26.90	18.61	7.41	2.52		6.12	6.15	15.83	3.51	6.97	16.34	10.67	16.05	9.31	36.75	7.40	1.53	46.78	24.25
August 1996	173.27	47.58	26.23	17.05	7.37	2.23		6.11	6.14	14.49	3.59	6.84	15.71	10.58	15.62	8.78	15.42	7.06	1.60	43.39	22.58
September 1996	172.63	48.92	26.82	16.97	5.98	3.46		6.39	5.69	12.99	3.42	6.53	15.89	10.33	15.69	8.94	15.17	6.86	1.63	40.29	22.35
October 1996	173.30	50.41	27.59	17.26	6.95	3.14		6.47	5.41	12.79	3.47	6.61	15.46	9.36	15.97	8.97	15.25	7.06	1.78	38.95	22.43
November 1996	169.18	51.58	27.82	18.21	7.18	3.01		6.49	5.28	11.76	3.59	6.78	15.07	9.43	16.35	8.90	16.18	6.96	2.04	36.44	22.22
December 1996	168.56	51.77	28.02	23.98	7.19	2.65		6.58	5.35	11.47	4.59	6.88	15.51	9.51	16.44	9.15	16.62	7.69	2.20	35.69	22.62
Average PE Ratio for the Year 1996																					23.09
January 1997	150.23	53.18	28.39	27.03	8.95	3.08		6.75	6.13	12.38	5.29	7.80	19.65	11.16	10.82	10.05	16.83	8.14	3.57	45.30	22.88
February 1997	146.44	54.34	28.72	25.91	9.25	2.83		6.66	6.39	12.24	5.79	8.19	23.56	11.16	11.77	10.76	17.93	8.65	5.47	44.44	23.18
March 1997	42.52	54.03	29.28	29.66	8.93	2.80		6.69	5.52	11.23	5.69	6.85	23.79	7.47	11.81	10.02	19.16	8.28	5.61	37.17	17.18
April 1997	36.32	52.07	13.96	30.53	8.70	2.66	14.20	7.87	5.09	-31.11	5.43	6.36	18.82	7.30	11.45	10.30	18.85	6.96	5.78	61.79	14.67
May 1997	36.62	51.38	14.03	30.84	9.49	2.76	13.38	9.44	5.71	-33.36	5.60	6.58	19.05	7.28	11.28	10.95	19.08	7.72	6.75	65.35	14.99
June 1997	36.28	51.56	14.05	31.60	9.39	2.74	12.12	9.39	5.65	-33.10	6.26	6.71	18.84	7.37	11.68	11.73	18.88	7.73	8.03	64.42	15.07
July 1997	35.48	10.66	14.41	33.04	8.81	2.66	12.53	9.77	5.52	-32.63	6.36	6.98	18.98	7.19	12.13	12.19	18.61	8.16	8.24	62.42	13.07
August 1997	36.34	11.21	15.92	33.15	8.94	2.63	12.28	10.16	5.40	-31.33	5.77	6.67	19.82	6.94	11.83	10.62	8.51	7.52	7.82	59.18	12.47
September 1997	35.47	15.90	20.86	38.79	10.71	4.31	11.96	10.76	5.33	-27.75	5.88	6.57	20.78	6.38	11.42	11.09	8.18	6.91	7.97	57.04	13.43
October 1997	35.73	18.82	20.04	37.90	10.17	4.05	11.41	11.05	5.45	-26.05	5.14	6.34	17.08	6.02	11.40	10.25	7.45	6.34	6.66	53.05	12.92
November 1997	35.28	17.61	17.51	36.82	9.77	3.86	10.15	11.00	5.32	-24.96	4.67	6.17	15.82	6.15	11.08	10.27	7.65	6.11	5.57	50.01	12.29
December 1997	32.61	12.63	12.79	23.27	10.03	3.65	10.24	11.17	5.68	-23.70	4.49	6.38	15.81	5.92	10.88	10.10	7.59	6.24	5.62	50.41	11.11
Average PE Ratio for the Year 1997																					15.27
January 1998	37.94	13.71	13.44	23.91	12.22	4.62	11.56	11.33	5.98	-24.84	5.10	7.04	19.55	5.96	9.37	10.57	7.79	6.98	6.43	57.62	12.31
February 1998	37.92	17.39	16.22	26.30	11.68	4.17	11.80	11.59	6.23	-24.27	4.86	6.59	17.86	5.99	9.72	10.54	7.69	7.52	6.65	58.74	12.76
March 1998	-24.43	19.71	17.81	29.44	11.72	4.03	11.78	12.03	5.48	-24.11	4.29	6.50	18.25	5.61	9.88	7.49	7.97	8.32	6.54	53.05	9.57
April 1998	-24.08	23.31	12.45	29.40	10.53	3.90	11.99	12.25	5.04	12.77	4.10	6.37	15.55	5.25	9.83	6.42	7.58	7.58	5.79	59.21	11.26
May 1998	-24.33	22.91	11.71	27.56	11.29	3.83	11.08	12.71	5.10	13.78	3.97	6.18	14.97	5.26	9.47	5.83	6.79	7.25	5.89	53.53	10.74
June 1998	-26.48	23.53	12.66	29.42	11.41	3.78	11.56	15.32	5.61	14.21	4.08	6.71	16.32	5.30	9.52	6.17	8.11	7.35	6.47	53.04	11.21
July 1998	-28.61	4.09	14.01	28.63	11.14	4.35	11.24	14.37	5.32	13.04	4.07	6.33	15.45	5.30	9.88	6.27	8.53	7.23	6.42	53.44	10.03
August 1998	-30.36	4.10	14.01	29.40	11.18	4.18	11.12	15.16	5.38	12.55	4.11	6.16	13.55	5.60	9.92	5.83	41.12	7.39	6.73	53.43	11.53
September 1998	-30.56	4.09	14.26	28.76	8.20	2.44	9.54	15.68	5.30	12.05	3.84	6.25	13.40	5.82	9.80	5.01	38.99	6.75	6.46	51.50	10.88
October 1998	-29.79	4.16	13.53	28.85	8.28	2.51	9.81	14.13	5.35	12.29	3.42	5.98	13.03	6.31	10.07	4.94	36.22	6.66	6.96	47.78	10.52
November 1998	-25.82	4.24	13.27	26.98	7.67	2.55	9.94	15.33	5.43	12.82	3.44	6.10	12.00	6.50	10.13	4.35	36.18	6.29	6.37	45.33	10.46
December 1998	-27.32	4.29	13.38	21.69	8.11	2.63	10.77	16.31	6.38	12.97	3.26	7.03	13.80	7.64	10.22	4.78	41.81	6.38	6.35	50.04	11.03
Average PE Ratio for the Year 1998																					11.02

Average PE Ratio for the Year 1999

Year	Number	PE Ratio
1996	12	23.09
1997	12	15.27
1998	12	11.02
1999	12	12.06
2000	12	7.51
2001	12	7.51
Average	72	13.81

**PRICE EARNING (PE) RATIOS
NSE 20 SHARE INDEX CONSTITUENT SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001**

MONTH	BBOND PE Ratio	GWK PE Ratio	KAKUZI PE Ratio	SASINI PE Ratio	UCHUMI PE Ratio	KENAIR PE Ratio	SERENA PE Ratio	NMG PE Ratio	BBK PE Ratio	DTK PE Ratio	KCB PE Ratio	SCB PE Ratio	BAMBU PE Ratio	BAT PE Ratio	BOC PE Ratio	NIC PE Ratio	EABL PE Ratio	FIRE PE Ratio	KPL PE Ratio	TOTAL PE Ratio	AVERAGE
January 1999	-29.24	4.48	13.64	22.54	8.56	2.95	12.84	17.54	6.77	14.77	3.75	7.41	17.50	9.05	9.34	5.79	44.52	8.22	7.28	67.85	12.78
February 1999	-29.22	4.34	13.74	20.39	8.97	2.67	11.27	17.22	6.77	16.15	3.69	7.21	15.12	8.50	9.09	5.30	44.95	7.85	6.96	57.97	11.95
March 1999	30.38	4.40	13.54	18.48	9.65	2.70	11.16	17.15	8.00	16.02	8.74	5.45	19.26	5.39	9.00	4.66	49.62	7.76	6.53	56.83	15.24
April 1999	30.95	4.44	17.82	17.65	9.32	2.74	7.83	14.76	7.82	12.06	7.57	5.33	18.36	5.90	8.90	4.79	53.28	7.64	6.30	23.82	13.37
May 1999	31.21	4.47	17.00	17.17	9.16	2.82	7.89	14.10	7.82	11.44	7.26	5.16	15.56	6.27	9.05	4.68	56.13	7.70	6.17	24.45	13.28
June 1999	31.22	4.50	17.54	16.80	9.24	2.91	7.72	13.85	7.89	11.45	7.17	5.58	16.75	6.17	9.15	4.76	56.36	7.59	6.07	24.59	13.37
July 1999	31.31	20.92	17.78	16.89	9.52	2.58	8.05	14.15	8.44	11.43	7.67	6.09	18.47	5.31	8.94	4.86	57.84	7.70	6.04	25.94	14.50
August 1999	25.91	20.71	17.70	17.16	9.73	2.22	8.21	12.43	7.95	11.00	6.79	6.38	19.16	5.06	9.01	4.54	10.45	7.41	5.89	26.80	11.73
September 1999	21.29	17.05	15.60	17.58	12.08	2.30	9.03	11.72	7.26	9.98	6.05	6.32	17.83	5.40	8.94	4.57	10.38	6.31	5.32	25.95	11.05
October 1999	21.72	16.75	14.60	17.12	11.18	2.33	9.34	11.65	7.43	11.24	5.89	6.55	16.71	5.42	8.85	4.76	9.97	6.43	5.55	24.46	10.90
November 1999	21.91	15.57	14.37	14.68	9.54	2.73	9.38	11.26	7.35	11.03	5.28	6.82	16.68	5.02	8.55	4.62	8.68	6.40	4.88	25.17	10.50
December 1999	22.05	13.65	12.90	64.95	9.55	3.01	9.40	10.99	7.40	11.89	5.34	6.39	16.69	4.90	8.45	4.34	8.88	7.06	5.49	25.21	12.93

Average PE Ratio for the Year 1999

12.63

January 2000	22.16	13.77	13.77	63.51	9.86	2.95	9.42	10.65	7.39	12.15	5.55	6.60	16.81	4.78	8.61	4.32	8.70	7.37	5.66	25.39	12.97
February 2000	20.17	13.58	13.80	55.89	10.13	2.64	9.42	9.97	7.49	12.52	5.03	7.30	16.67	4.99	8.60	4.26	8.76	6.83	5.60	26.30	12.50
March 2000	20.26	12.97	10.24	51.59	10.49	2.74	9.59	9.84	8.37	13.17	-2.81	7.16	15.31	5.46	8.76	5.87	8.98	8.91	5.47	27.60	12.00
April 2000	17.81	13.25	37.20	46.12	10.62	2.91	7.84	10.97	8.86	25.35	-2.78	7.48	15.32	5.15	8.68	5.87	8.80	9.02	4.84	15.01	12.92
May 2000	17.27	12.02	35.79	51.62	10.43	3.01	7.92	10.77	8.71	20.87	-2.67	6.85	16.20	4.91	7.57	5.89	8.71	8.53	4.06	14.99	12.67
June 2000	16.96	11.34	34.79	52.38	10.41	3.11	7.85	10.68	8.42	20.13	-2.66	6.60	16.68	4.65	6.51	5.68	8.11	9.11	3.07	15.21	12.45
July 2000	16.83	8.05	33.69	50.33	10.44	2.90	7.80	10.80	8.44	19.35	-2.48	7.08	17.44	4.82	6.34	5.11	8.50	8.95	3.11	16.40	12.19
August 2000	16.47	7.00	33.64	49.70	10.49	2.88	8.15	10.43	8.38	18.57	-2.31	7.47	18.37	5.08	5.79	5.63	7.91	8.19	2.97	17.14	12.10
September 2000	18.16	7.27	31.86	49.25	9.50	1.35	8.16	10.18	8.62	15.23	-2.43	7.78	18.46	5.57	5.74	5.54	8.60	8.45	2.73	17.00	11.85
October 2000	19.73	9.18	30.39	49.68	10.14	1.41	8.02	9.96	9.13	15.07	-2.62	7.79	19.11	5.73	5.79	5.15	8.78	8.63	-1.94	17.08	11.81
November 2000	21.36	10.14	29.02	50.43	10.40	1.37	8.09	10.02	8.42	14.24	-2.72	7.21	19.02	5.66	5.95	4.64	8.97	8.60	-2.16	17.25	11.80
December 2000	22.02	10.44	29.37	11.91	10.01	1.40	8.01	10.11	7.02	13.40	-2.32	6.44	19.31	5.08	6.26	3.99	8.31	8.39	-2.12	16.88	9.70

Average PE Ratio for the Year 2000

12.08

January 2001	22.17	10.73	28.59	11.10	10.51	1.43	7.84	9.91	7.43	13.48	-2.07	6.93	19.71	5.23	12.33	4.34	8.36	7.96	-1.98	15.21	9.96
February 2001	22.01	10.90	27.83	11.90	10.75	1.44	8.02	10.18	7.45	12.70	-2.02	7.36	19.20	5.04	12.06	4.11	8.48	6.77	-2.35	13.64	9.77
March 2001	11.08	11.45	25.15	11.83	10.15	1.26	8.27	9.78	5.42	12.56	-8.17	6.15	36.08	10.28	10.95	4.78	8.77	7.65	-2.22	12.34	9.68
April 2001	10.63	11.19	-27.77	10.76	9.66	1.23	7.92	10.49	5.36	7.92	-8.26	5.67	34.81	10.05	10.63	4.18	8.81	7.15	-1.94	35.48	7.70
May 2001	10.66	11.33	-27.58	10.19	9.18	1.25	7.91	9.34	4.88	7.53	-7.16	5.88	35.17	9.47	9.58	3.97	8.64	6.69	-1.46	23.83	6.96
June 2001	10.88	11.56	-27.53	9.46	9.28	1.38	7.85	7.72	5.38	6.74	-5.96	6.12	35.01	9.36	7.42	3.99	8.62	6.59	-1.41	21.18	6.68
July 2001	11.00	6.67	-27.23	9.22	9.57	1.37	7.78	8.93	5.55	6.68	-5.85	6.23	33.81	9.51	8.04	4.17	8.82	6.68	-1.37	21.76	6.57
August 2001	10.80	6.50	-24.30	8.70	9.06	1.25	7.60	8.75	5.50	6.74	-5.89	5.96	32.63	8.39	7.86	4.10	6.98	6.73	-1.23	19.86	6.30
September 2001	10.09	6.14	-23.60	7.58	25.58	2.64	6.97	8.27	4.94	6.56	-5.16	5.28	29.56	7.99	7.81	3.56	7.10	6.60	-1.04	16.40	6.66
October 2001	9.63	6.00	-24.53	6.61	27.03	2.48	7.05	7.89	5.18	5.44	-5.49	5.66	27.57	8.64	7.58	3.45	7.17	6.58	-0.72	14.24	6.37
November 2001	9.81	6.01	-25.65	6.27	23.96	2.56	7.60	8.61	5.15	5.53	-5.30	5.66	24.65	8.61	7.54	4.12	6.84	6.84	-0.51	16.63	6.25
December 2001	8.81	4.36	-25.26	44.86	21.44	2.55	7.94	7.83	5.16	5.39	-5.03	5.64	21.79	8.71	7.90	4.07	6.52	6.68	-0.54	15.86	7.73

Average PE Ratio for the Year 2001

7.55

PE Ratio for NSE 20 Share Index Securities

Year	Number	P/E Ratio
1996	20	23.09
1997	20	15.27
1998	20	11.02
1999	20	12.63
2000	20	12.08
2001	20	7.55
Average		13.61

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

						Year 1996			
						AVERAGE	Mean Return		
WEEKEND	KPLC	BBK	KCB	NMG	FIRE	(\bar{X})	($X - \bar{X}$)	($X - \bar{X}$) ²	
05-Apr-96	-2.747	-0.346	5.274	-5.991	-7.976	-2.357	0.336	-2.693	7.250
12-Apr-96	0.066	1.604	-11.008	3.624	-1.716	-1.486	0.336	-1.821	3.318
19-Apr-96	1.468	6.723	9.299	5.273	3.886	5.330	0.336	4.994	24.941
26-Apr-96	-1.780	-2.244	1.181	0.404	2.366	-0.014	0.336	-0.350	0.122
03-May-96	-4.398	-1.122	0.071	0.969	1.132	-0.670	0.336	-1.005	1.010
10-May-96	6.311	0.459	2.403	0.202	5.342	2.943	0.336	2.608	6.800
17-May-96	-2.221	-1.244	-3.177	1.035	-1.197	-1.361	0.336	-1.696	2.878
24-May-96	2.771	-0.141	-4.259	0.335	-0.160	-0.291	0.336	-0.626	0.392
31-May-96	2.675	0.914	-8.640	1.719	4.217	0.177	0.336	-0.159	0.025
WEEKEND	KPL	KENAIR	KCB	NMG	BBK				
07-Jun-96	0.692	1.627	6.101	1.108	-0.459	1.814	0.336	1.478	2.185
14-Jun-96	1.482	-5.542	2.371	7.791	-1.038	1.013	0.336	0.677	0.459
21-Jun-96	6.152	-4.786	-0.467	1.307	-1.826	0.076	0.336	-0.259	0.067
28-Jun-96	5.274	-0.585	-0.056	1.652	-1.003	1.057	0.336	0.721	0.520
05-Jul-96	3.740	-4.529	0.464	4.290	0.680	0.929	0.336	0.593	0.352
12-Jul-96	0.500	3.458	-1.379	0.347	-1.284	0.328	0.336	-0.007	0.000
19-Jul-96	4.062	-2.556	0.266	2.510	0.469	0.950	0.336	0.615	0.378
26-Jul-96	0.887	-3.057	5.733	-1.847	-1.414	0.060	0.336	-0.275	0.076
02-Aug-96	-0.460	-5.190	2.039	-1.711	2.301	-0.604	0.336	-0.940	0.883
09-Aug-96	-1.663	-4.930	-5.644	0.737	0.026	-2.295	0.336	-2.630	6.918
16-Aug-96	-0.708	-1.137	-2.205	1.486	-2.474	-1.007	0.336	-1.343	1.803
23-Aug-96	3.104	3.013	0.067	4.903	0.515	2.321	0.336	1.985	3.941
30-Aug-96	-4.640	6.062	2.496	-0.605	-0.621	0.538	0.336	0.203	0.041
WEEKEND	KPL	KCB	KENAIR	BBK	UCHUMI				
6-Sep-96	1.870	-3.223	2.546	-5.173	-3.492	-1.494	0.336	-1.830	3.349
13-Sep-96	4.326	-0.762	-4.846	-5.384	-1.260	-1.585	0.336	-1.921	3.690
20-Sep-96	8.257	-1.607	-4.909	3.859	0.384	1.197	0.336	0.861	0.742
27-Sep-96	2.510	-2.699	-1.833	-2.419	2.168	-0.455	0.336	-0.790	0.624
WEEKEND	KPL	KCB	KENAIR	BBK	NMG				
4-Oct-96	-4.877	8.232	-0.115	-2.329	0.017	0.186	0.336	-0.150	0.022
11-Oct-96	8.430	2.465	-2.691	0.688	0.205	1.820	0.336	1.484	2.203
18-Oct-96	-3.834	-5.216	-1.370	0.152	0.038	-2.046	0.336	-2.381	5.672
25-Oct-96	1.675	0.916	-2.624	-1.941	-1.022	-0.599	0.336	-0.935	0.874
1-Nov-96	4.911	1.293	2.220	-1.144	2.001	1.856	0.336	1.521	2.313
8-Nov-96	2.294	-0.314	0.892	0.250	-1.876	0.249	0.336	-0.086	0.007
15-Nov-96	2.342	2.338	-5.426	0.468	1.804	0.305	0.336	-0.030	0.001
22-Nov-96	3.541	4.453	-1.839	0.016	-0.647	1.105	0.336	0.769	0.592
29-Nov-96	-0.147	7.270	-0.796	0.373	0.279	1.396	0.336	1.060	1.124
6-Dec-96	3.527	19.429	-13.926	0.696	0.503	2.046	0.336	1.710	2.925
13-Dec-96	-0.701	4.812	1.404	-0.061	1.009	1.293	0.336	0.957	0.916
20-Dec-96	0.008	-8.356	9.766	0.784	-0.847	0.271	0.336	-0.065	0.004
27-Dec-96	0.440	-2.022	0.438	0.381	1.218	0.091	0.336	-0.244	0.060

$$\text{Std deviation} = \left[\frac{89.477}{39 - 1} \right]^{0.5}$$

$$= 1.534$$

Average Mean Return for the Year 1996

0.336

0.000 89.477

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DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

Year 1997

Mean Return

WEEKEND	KPL	KCB	KENAIR	BBK	NMG	AVERAGE	(X)	(X - X)	(X - X)^2
3-Jan-97	17.175	8.072	0.574	1.808	-0.477	5.430	0.523	4.907	24.077
10-Jan-97	1.567	6.779	9.464	5.581	1.311	4.940	0.523	4.417	19.510
17-Jan-97	95.615	2.069	11.369	13.428	1.780	24.852	0.523	24.329	591.880
24-Jan-97	-16.507	4.733	-4.040	-4.449	0.429	-3.967	0.523	-4.490	20.162
31-Jan-97	-3.664	-0.447	-13.744	-1.226	-0.953	-4.007	0.523	-4.530	20.523
7-Feb-97	21.442	1.266	-0.103	0.515	-3.927	3.839	0.523	3.315	10.991
14-Feb-97	23.347	1.555	2.664	3.074	0.002	6.128	0.523	5.605	31.415
21-Feb-97	-6.210	3.386	1.602	1.109	2.979	0.573	0.523	0.050	0.002
28-Feb-97	-0.911	4.206	-3.963	-5.029	-1.043	-1.348	0.523	-1.871	3.502
7-Mar-97	0.032	5.203	2.748	-2.190	-0.371	1.084	0.523	0.561	0.315
14-Mar-97	-1.055	-7.630	-2.897	0.434	0.484	-2.133	0.523	-2.656	7.054
21-Mar-97	-1.361	0.053	1.822	-0.743	0.913	0.137	0.523	-0.387	0.149
28-Mar-97	-2.241	-0.746	-4.609	-8.697	-0.666	-3.392	0.523	-3.915	15.329
WEEKEND									
4-Apr-97	4.290	1.460	-2.522	-0.745	6.717	1.840	0.523	1.316	1.733
11-Apr-97	0.573	0.138	0.515	-0.631	2.858	0.691	0.523	0.167	0.028
18-Apr-97	0.050	-1.997	-0.952	0.771	-0.248	-0.475	0.523	-0.999	0.997
25-Apr-97	1.875	-7.421	1.918	2.970	3.265	0.521	0.523	-0.002	0.000
WEEKEND									
2-May-97	SCB	KCB	KENAIR	BBK	DTK				
9-May-97	3.003	2.400	8.067	6.118	-2.816	3.354	0.523	2.831	8.014
16-May-97	1.263	4.565	-0.593	5.120	1.326	2.336	0.523	1.813	3.285
23-May-97	1.711	1.007	-0.638	-0.039	-0.373	0.333	0.523	-0.190	0.036
30-May-97	-0.302	0.607	-5.344	-2.560	1.644	-1.191	0.523	-1.714	2.939
6-Jun-97	0.186	0.994	-2.932	0.885	2.509	0.328	0.523	-0.195	0.038
13-Jun-97	0.987	3.016	2.019	-0.797	-1.295	0.786	0.523	0.262	0.069
20-Jun-97	-0.160	4.176	11.407	0.134	-2.023	2.707	0.523	2.183	4.767
27-Jun-97	1.244	12.303	-9.490	0.000	-1.699	0.472	0.523	-0.052	0.003
4-Jul-97	-0.425	5.878	12.799	-0.589	0.582	3.649	0.523	3.126	9.771
11-Jul-97	1.326	-0.390	-6.614	-0.606	-0.472	-1.351	0.523	-1.875	3.515
18-Jul-97	5.107	-14.053	-7.487	-0.230	0.022	-3.328	0.523	-3.852	14.835
25-Jul-97	0.062	-2.455	-4.227	-0.421	-0.143	-1.437	0.523	-1.960	3.842
1-Aug-97	-3.988	2.050	14.070	-3.421	-0.082	1.726	0.523	1.202	1.446
8-Aug-97	-2.229	-4.773	-7.689	-0.945	-0.009	-3.129	0.523	-3.652	13.339
15-Aug-97	-3.781	-4.201	-2.887	0.769	-0.637	-2.147	0.523	-2.671	7.132
22-Aug-97	1.122	1.076	3.041	2.587	-2.485	1.068	0.523	0.545	0.297
29-Aug-97	5.057	1.905	-2.163	-2.136	-3.275	-0.122	0.523	-0.646	0.417
	-2.501	0.035	18.261	-0.127	-1.374	2.859	0.523	2.335	5.453
WEEKEND									
5-Sep-97	BAT	KCB	KENAIR	BBK	DTK				
12-Sep-97	-1.572	1.181	-18.745	-2.129	-6.166	-5.486	0.523	-6.010	36.115
19-Sep-97	-2.057	-0.347	0.777	0.980	0.321	-0.065	0.523	-0.589	0.346
26-Sep-97	-1.655	-0.250	10.451	0.599	-1.940	1.441	0.523	0.917	0.842
3-Oct-97	-1.306	-0.114	0.779	0.340	-2.621	-0.584	0.523	-1.108	1.227
10-Oct-97	-4.378	-7.086	2.435	0.085	-0.474	-1.884	0.523	-2.407	5.794
17-Oct-97	-0.160	-1.828	-14.869	0.833	-3.095	-3.824	0.523	-4.347	18.898
24-Oct-97	1.466	-11.322	-0.734	1.862	0.251	-1.695	0.523	-2.219	4.923
31-Oct-97	1.366	4.193	-3.579	-0.206	-1.953	-0.036	0.523	-0.559	0.313
	-0.026	4.979	-1.036	-0.882	-3.810	-0.155	0.523	-0.678	0.460
WEEKEND									
7-Nov-97	KPL	KCB	KENAIR	BBK	DTK				
14-Nov-97	-4.506	3.016	0.030	-0.542	1.267	-0.147	0.523	-0.671	0.450
21-Nov-97	-11.644	-11.349	-0.841	-1.369	0.366	-4.967	0.523	-5.491	30.149
28-Nov-97	-9.942	-7.318	-0.825	-4.095	-0.193	-4.474	0.523	-4.998	24.979
5-Dec-97	10.750	0.966	1.128	5.067	-3.907	2.801	0.523	2.278	5.188
12-Dec-97	3.964	-1.452	0.547	4.513	-0.932	1.328	0.523	0.805	0.647
19-Dec-97	-2.855	2.551	1.705	2.529	0.299	0.846	0.523	0.322	0.104
26-Dec-97	8.145	2.741	0.797	-0.853	-4.287	1.309	0.523	0.785	0.617
	0.000	1.638	3.000	1.284	0.000	1.184	0.523	0.661	0.437
								0.000	958.358

$$\text{Std deviation} = \left[\frac{958.358}{52 - 1} \right]^{0.5}$$

$$= 4.335$$

Average Mean Return for the Year 1997

0.523

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

Year 1998

Mean Return

WEEKEND	KPL	KCB	KENAIR	BBK	DTK	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
2-Jan-98	0.000	-2.025	-1.328	-1.202	4.961	0.081	-0.051	0.132	0.017
9-Jan-98	4.315	2.754	-0.271	2.262	-0.089	1.794	-0.051	1.845	3.404
16-Jan-98	7.360	13.457	16.592	3.337	4.199	8.989	-0.051	9.040	81.720
23-Jan-98	0.858	-1.033	4.678	0.726	0.942	1.234	-0.051	1.285	1.652
30-Jan-98	-2.045	-4.255	-1.841	-3.082	-1.170	-2.478	-0.051	-2.428	5.893
6-Feb-98	-3.347	-3.213	-15.312	-1.551	-3.374	-5.359	-0.051	-5.309	28.181
13-Feb-98	4.085	-0.785	2.224	4.454	-0.620	1.872	-0.051	1.922	3.696
20-Feb-98	2.045	-0.429	3.849	2.132	0.475	1.614	-0.051	1.665	2.773
27-Feb-98	0.095	-0.884	-3.441	5.298	3.318	0.877	-0.051	0.928	0.861
WEEKEND	BBOND	KCB	KENAIR	BBK	DTK				
6-Mar-98	-4.289	0.626	-0.925	-1.611	-1.652	-1.570	-0.051	-1.519	2.308
13-Mar-98	-2.643	-4.550	-1.588	0.801	-0.565	-1.709	-0.051	-1.658	2.749
20-Mar-98	4.315	-4.399	-1.270	-7.551	-0.266	-1.834	-0.051	-1.783	3.180
27-Mar-98	0.083	-6.987	-3.912	-1.328	-1.401	-2.709	-0.051	-2.658	7.064
WEEKEND	BBOND	KCB	KENAIR	BBK	BAT				
3-Apr-98	0.000	-0.050	11.927	-1.896	0.059	2.008	-0.051	2.059	4.239
10-Apr-98	-3.367	2.043	-10.175	-0.222	-0.712	-2.487	-0.051	-2.436	5.933
17-Apr-98	1.759	3.659	-0.265	-2.239	0.030	0.589	-0.051	0.640	0.409
24-Apr-98	-2.169	-3.428	9.824	-2.343	-1.046	0.167	-0.051	0.218	0.048
1-May-98	2.148	-0.311	-9.953	0.288	0.302	-1.505	-0.051	-1.454	2.115
8-May-98	-2.103	-0.017	-0.646	-1.272	-0.572	-0.922	-0.051	-0.871	0.759
15-May-98	-0.381	-0.320	12.553	0.083	0.000	2.387	-0.051	2.438	5.943
22-May-98	2.609	-8.299	-11.503	2.435	2.059	-2.540	-0.051	-2.489	6.194
29-May-98	1.907	5.812	-0.060	5.890	0.030	2.715	-0.051	2.766	7.652
5-Jun-98	0.532	4.728	0.671	6.417	-0.059	2.458	-0.051	2.509	6.293
12-Jun-98	4.574	1.268	-2.981	2.014	0.000	0.975	-0.051	1.026	1.053
19-Jun-98	1.028	-4.583	2.079	-2.244	0.030	-0.738	-0.051	-0.687	0.472
26-Jun-98	2.552	0.676	1.046	-3.726	-0.445	0.021	-0.051	0.072	0.005
WEEKEND	BBOND	KCB	KENAIR	GWK	BAT				
3-Jul-98	1.718	1.470	1.470	-9.104	0.477	-0.794	-0.051	-0.743	0.552
10-Jul-98	-0.270	-0.172	-0.172	-0.945	0.059	-0.300	-0.051	-0.249	0.062
17-Jul-98	4.651	-0.608	-0.608	-3.980	-2.550	-0.619	-0.051	-0.568	0.323
24-Jul-98	1.381	-0.145	-0.145	-15.713	2.190	-2.487	-0.051	-2.436	5.932
31-Jul-98	0.731	1.015	1.015	5.455	0.357	1.715	-0.051	1.766	3.118
WEEKEND	BBOND	KCB	KENAIR	GWK	BBK				
7-Aug-98	2.063	-6.388	0.700	9.167	2.340	1.576	-0.051	1.627	2.648
14-Aug-98	2.063	-0.622	1.138	-0.068	1.213	0.745	-0.051	0.796	0.633
21-Aug-98	-0.534	1.457	-1.095	0.000	-0.303	-0.095	-0.051	-0.044	0.002
28-Aug-98	0.136	2.279	-1.112	0.403	0.633	0.468	-0.051	0.519	0.269
WEEKEND	BBOND	KCB	KENAIR	GWK	NIC				
4-Sep-98	3.306	-0.327	-14.566	-0.264	-15.990	-5.568	-0.051	-5.517	30.442
11-Sep-98	-2.372	0.061	-1.150	-0.137	12.792	1.839	-0.051	1.890	3.572
18-Sep-98	-0.155	-5.234	0.852	0.382	-5.476	-1.926	-0.051	-1.875	3.517
25-Sep-98	-0.236	-2.924	0.646	-0.380	-5.074	-1.594	-0.051	-1.543	2.380
2-Oct-98	-1.122	-2.384	0.699	1.538	-0.079	-0.269	-0.051	-0.219	0.048
9-Oct-98	0.943	-5.834	0.852	0.234	-0.353	-0.832	-0.051	-0.781	0.610
16-Oct-98	0.332	-0.912	-0.081	0.281	0.626	0.049	-0.051	0.100	0.010
23-Oct-98	-1.707	0.966	0.456	-0.505	-0.675	-0.293	-0.051	-0.242	0.059
30-Oct-98	-3.906	-1.549	0.902	-0.009	-1.795	-1.271	-0.051	-1.220	1.490
6-Nov-98	-3.271	0.703	1.471	0.099	2.562	0.313	-0.051	0.364	0.132
13-Nov-98	-7.695	1.402	-0.923	2.147	-11.714	-3.357	-0.051	-3.306	10.928
20-Nov-98	-3.288	0.668	0.403	0.132	-1.193	-0.656	-0.051	-0.605	0.366
27-Nov-98	-0.538	-0.517	-0.408	0.633	-3.338	-0.833	-0.051	-0.783	0.612
4-Dec-98	6.121	-6.610	-0.104	0.000	3.679	0.617	-0.051	0.668	0.447
11-Dec-98	1.027	-5.035	2.104	3.235	-0.715	0.123	-0.051	0.174	0.030
18-Dec-98	1.102	-0.161	0.167	-3.133	6.393	0.874	-0.051	0.924	0.855
25-Dec-98	7.174	12.672	1.297	0.000	8.848	5.998	-0.051	6.049	36.590
Average Mean Return for the Year 1998						-0.051		0.000	290.239

$$\text{Std deviation} = \left[\frac{290.239}{52 - 1} \right]^{0.5} = 2.386$$

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DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

Year 1999

Mean Return

WEEKEND	BOND	KCB	KENAIR	GWK	NIC	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
1-Jan-99	1.546	3.872	7.354	4.412	8.146	5.066	0.054	5.012	25.124
8-Jan-99	0.113	0.237	0.644	-0.704	3.698	0.797	0.054	0.744	0.553
15-Jan-99	0.000	0.216	6.097	-1.587	15.631	4.071	0.054	4.018	16.140
22-Jan-99	-0.176	9.855	-3.324	4.697	-10.607	0.089	0.054	0.035	0.001
29-Jan-99	0.176	-6.424	4.215	0.000	-5.749	-1.556	0.054	-1.610	2.592
5-Feb-99	-0.472	-0.103	-6.079	-1.569	-9.393	-3.523	0.054	-3.577	12.796
12-Feb-99	-0.163	-0.050	-10.495	-4.873	7.655	-1.585	0.054	-1.639	2.686
19-Feb-99	0.071	2.740	6.102	1.447	0.910	2.254	0.054	2.200	4.842
26-Feb-99	0.191	-0.095	-3.159	0.000	-1.935	-0.999	0.054	-1.053	1.109
5-Mar-99	-1.483	7.876	-1.334	2.635	0.744	1.688	0.054	1.634	2.670
12-Mar-99	0.897	5.301	0.112	-1.155	2.299	1.491	0.054	1.437	2.065
19-Mar-99	0.910	-0.463	4.236	0.000	-3.279	0.281	0.054	0.227	0.052
26-Mar-99	-3.234	-5.662	1.758	0.000	5.122	-0.403	0.054	-0.457	0.209
2-Apr-99	2.664	2.220	-3.401	0.000	-2.716	-0.247	0.054	-0.300	0.090
9-Apr-99	-2.762	0.885	1.342	0.000	-2.237	-0.554	0.054	-0.608	0.370
16-Apr-99	-0.581	0.399	3.242	0.120	4.898	1.616	0.054	1.562	2.439
23-Apr-99	1.034	2.716	-4.876	1.193	0.959	0.205	0.054	0.152	0.023
30-Apr-99	-0.329	10.453	2.331	-0.592	11.938	4.760	0.054	4.706	22.149
7-May-99	3.672	0.848	3.672	0.000	-17.150	-1.792	0.054	-1.845	3.406
14-May-99	-0.152	-1.646	-0.152	1.165	-2.541	-0.665	0.054	-0.719	0.517
21-May-99	1.436	-0.240	1.436	-0.450	5.833	1.603	0.054	1.549	2.400
28-May-99	-0.557	-4.163	-0.557	0.000	3.485	-0.358	0.054	-0.412	0.170
4-Jun-99	0.771	1.916	0.771	0.000	0.167	0.725	0.054	0.671	0.450
11-Jun-99	0.481	-0.028	0.481	0.704	-0.181	0.292	0.054	0.238	0.057
18-Jun-99	2.583	-0.015	2.583	-0.699	-1.627	0.565	0.054	0.511	0.262
25-Jun-99	-2.132	-0.002	-2.132	1.046	-0.236	-0.691	0.054	-0.745	0.555
2-Jul-99	1.485	-1.441	-1.622	-0.361	-0.690	-0.526	0.054	-0.580	0.336
9-Jul-99	1.604	-1.023	1.962	-4.128	5.320	0.747	0.054	0.693	0.481
16-Jul-99	2.522	0.218	0.516	-6.634	1.643	-0.347	0.054	-0.401	0.160
23-Jul-99	5.861	2.313	-15.073	-2.400	-0.830	-2.026	0.054	-2.079	4.324
30-Jul-99	0.868	-2.190	0.021	-2.746	-4.198	-1.649	0.054	-1.703	2.899
6-Aug-99	-1.304	0.435	-2.025	-1.888	3.087	-1.574	0.054	-1.627	2.648
13-Aug-99	0.990	-0.626	-1.215	-4.082	-4.692	-1.925	0.054	-1.979	3.916
20-Aug-99	3.662	0.654	-4.021	2.686	0.403	0.677	0.054	0.623	0.388
27-Aug-99	0.423	-1.319	-5.497	-0.612	3.055	-0.790	0.054	-0.844	0.712
3-Sep-99	0.779	-3.004	0.618	1.914	3.066	0.675	0.054	0.621	0.385
10-Sep-99	3.259	-4.726	-1.945	0.470	-2.555	-1.099	0.054	-1.153	1.330
17-Sep-99	-6.288	-1.225	-0.770	3.288	7.072	0.415	0.054	0.362	0.131
24-Sep-99	-3.502	-0.519	-1.029	1.713	-9.968	-2.661	0.054	-2.715	7.370
1-Oct-99	-4.594	-2.173	-9.844	0.731	4.591	-2.258	0.054	-2.311	5.343
8-Oct-99	2.190	-0.599	12.326	0.142	0.374	2.886	0.054	2.833	8.025
15-Oct-99	2.992	1.349	-0.420	-0.551	3.354	1.345	0.054	1.291	1.667
22-Oct-99	-0.890	-1.951	-0.005	-0.348	1.531	-0.333	0.054	-0.386	0.149
29-Oct-99	-0.275	-3.170	0.656	-0.429	-2.533	-1.150	0.054	-1.204	1.450
5-Nov-99	-4.124	-11.399	-0.036	0.415	-0.515	-3.132	0.054	-3.185	10.147
12-Nov-99	-3.113	-4.044	5.446	-8.584	0.959	-1.867	0.054	-1.921	3.690
19-Nov-99	-11.098	1.109	5.138	-1.165	1.330	-0.937	0.054	-0.991	0.982
26-Nov-99	-0.486	0.016	5.783	1.601	-2.935	0.796	0.054	0.742	0.551
3-Dec-99	11.385	1.674	8.949	3.619	-6.398	3.846	0.054	3.792	14.380
10-Dec-99	-1.103	1.882	3.342	-5.916	-0.937	-0.546	0.054	-0.600	0.360
17-Dec-99	5.721	7.517	-1.780	0.053	-0.224	2.257	0.054	2.204	4.856
24-Dec-99	-8.008	3.726	2.031	1.118	-5.378	-1.302	0.054	-1.356	1.839
31-Dec-99	-4.494	0.326	-0.122	-0.421	5.701	0.198	0.054	0.144	0.021

0.054

0.000 182.267

Average Mean Return for the Year 1999

$$\text{Std deviation} = \left[\frac{182.267}{52 - 1} \right]^{0.5}$$

$$= 1.890$$

UNIVERSITY OF NAIROBI
LOWER KABETE LIBRARY

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

Year 2000

WEEKEND	TOP 5 COMPANIES					Year 2000			
	KCB	KPL	KENAIR	BAT	NIC	AVERAGE	(X)	(X - X)	(X - X)^2
7-Jan-00	2.241	-0.242	-1.947	0.476	1.587	0.423	-0.449	0.872	0.760
14-Jan-00	4.142	-0.363	0.282	0.070	0.247	0.876	-0.449	1.324	1.754
21-Jan-00	3.590	-0.118	-0.314	-3.016	-2.347	-0.441	-0.449	0.008	0.000
28-Jan-00	0.348	1.013	-1.753	-1.085	-0.580	-0.411	-0.449	0.037	0.001
4-Feb-00	2.623	0.072	-1.609	0.073	0.149	0.261	-0.449	0.710	0.504
11-Feb-00	-12.324	-0.720	-1.248	0.000	0.368	-2.785	-0.449	-2.336	5.458
18-Feb-00	0.803	0.801	-0.742	0.073	1.904	0.568	-0.449	1.016	1.033
25-Feb-00	-2.546	-2.254	-16.011	1.188	-3.389	-4.603	-0.449	-4.154	17.255
3-Mar-00	0.493	2.729	11.690	16.595	-0.485	6.204	-0.449	6.653	44.260
10-Mar-00	0.037	-3.605	1.267	12.624	2.734	2.611	-0.449	3.060	9.362
17-Mar-00	0.438	0.458	-0.619	0.934	7.325	1.707	-0.449	2.155	4.646
24-Mar-00	-0.425	-2.602	0.621	-14.562	-3.312	-4.056	-0.449	-3.607	13.014
31-Mar-00	-6.331	1.190	3.617	1.529	0.278	0.057	-0.449	0.505	0.255
7-Apr-00	-6.154	-1.022	2.557	-1.130	-0.626	-1.275	-0.449	-0.826	0.683
14-Apr-00	4.358	-4.211	0.649	0.841	0.490	0.426	-0.449	0.874	0.764
21-Apr-00	6.854	-8.025	0.262	0.519	-1.374	-0.353	-0.449	0.096	0.009
28-Apr-00	1.235	-1.904	0.161	0.376	0.418	0.057	-0.449	0.506	0.256
5-May-00	-6.796	0.929	3.067	-6.223	-0.324	-1.869	-0.449	-1.421	2.018
12-May-00	-12.852	0.257	-1.555	0.283	0.743	-2.625	-0.449	-2.176	4.736
19-May-00	15.941	-15.239	1.770	-0.498	-0.335	0.328	-0.449	0.776	0.603
26-May-00	-0.367	0.443	-0.169	1.200	0.556	0.332	-0.449	0.781	0.610
2-Jun-00	2.917	-8.796	1.679	-0.478	1.332	-0.669	-0.449	-0.220	0.049
9-Jun-00	-3.250	-15.650	3.800	-1.142	-1.257	-3.500	-0.449	-3.051	9.310
16-Jun-00	-3.179	-0.762	0.462	-1.188	-0.825	-1.099	-0.449	-0.650	0.423
23-Jun-00	-2.437	-0.101	-2.045	-1.863	-0.793	-1.448	-0.449	-0.999	0.999
30-Jun-00	6.034	0.608	-1.155	-3.660	-0.918	0.182	-0.449	0.630	0.397
7-Jul-00	1.020	0.102	-0.144	1.702	-15.884	-2.641	-0.449	-2.192	4.805
14-Jul-00	-6.379	1.875	-0.126	5.338	-8.683	-1.595	-0.449	-1.146	1.314
21-Jul-00	1.663	-2.300	-2.423	-0.318	14.378	2.200	-0.449	2.649	7.016
28-Jul-00	-6.768	2.500	0.347	1.174	9.826	1.416	-0.449	1.865	3.477
4-Aug-00	-4.127	-3.312	-10.391	-0.498	-0.684	-3.802	-0.449	-3.354	11.248
11-Aug-00	-0.969	0.424	-0.082	0.050	3.576	0.600	-0.449	1.048	1.099
18-Aug-00	0.400	0.844	3.303	5.164	-2.127	1.517	-0.449	1.965	3.863
25-Aug-00	-2.064	-3.260	3.884	-0.158	-0.094	-0.338	-0.449	0.110	0.012
1-Sep-00	-5.418	-3.303	5.966	0.333	-0.111	-0.506	-0.449	-0.058	0.003
8-Sep-00	9.191	-0.257	2.603	1.439	0.121	2.619	-0.449	3.068	9.413
15-Sep-00	3.027	-2.387	5.041	2.479	0.372	1.706	-0.449	2.155	4.643
22-Sep-00	0.163	-1.986	1.201	9.020	2.968	2.273	-0.449	2.722	7.409
29-Sep-00	0.104	-0.538	-0.887	-0.098	-3.398	-0.963	-0.449	-0.515	0.265
6-Oct-00	5.602	-1.844	1.127	-2.179	-7.756	-1.010	-0.449	-0.561	0.315
13-Oct-00	2.060	-1.992	1.479	0.228	0.211	0.397	-0.449	0.846	0.715
20-Oct-00	0.931	-4.881	1.913	1.068	-0.182	-0.230	-0.449	0.219	0.048
27-Oct-00	3.931	-24.646	0.087	0.409	0.008	-4.042	-0.449	-3.594	12.914
3-Nov-00	-4.316	20.927	-0.133	-1.039	-3.110	2.466	-0.449	2.914	8.494
10-Nov-00	4.843	12.412	0.132	-0.340	-0.085	3.392	-0.449	3.841	14.753
17-Nov-00	-0.328	2.350	-4.037	1.181	-5.017	-1.170	-0.449	-0.722	0.521
24-Nov-00	-0.111	2.705	-1.126	-1.407	-4.135	-0.815	-0.449	-0.366	0.134
1-Dec-00	0.159	2.839	0.598	1.042	0.391	1.006	-0.449	1.454	2.115
8-Dec-00	-0.587	-2.258	1.699	-0.254	-3.811	-1.042	-0.449	-0.594	0.352
15-Dec-00	-2.327	0.587	1.731	-5.167	-2.692	-1.574	-0.449	-1.125	1.266
22-Dec-00	-17.356	-0.114	-0.586	-4.225	-10.111	-6.478	-0.449	-6.030	36.358
29-Dec-00	-11.929	-2.144	0.260	-10.022	-4.218	-5.611	-0.449	-5.162	26.646
						0.000		278.357	
						-0.449			

Std deviation = $\left[\frac{278.357}{52 - 1} \right]^{0.5}$
= 2.336

Average Mean Return for the Year 2000

UNIVERSITY OF NAIROBI
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DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

TOP 5 COMPANIES

Year 2001

Mean Return

WEEKEND	KCB	KPL	KENAIR	BAT	NIC	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
5-Jan-01	23.319	-11.401	1.371	4.798	3.873	4.392	-0.248	4.640	21.528
12-Jan-01	4.243	2.997	-1.308	6.612	11.546	4.818	-0.248	5.065	25.659
19-Jan-01	-21.610	2.173	0.156	1.504	3.742	-2.807	-0.248	-2.559	6.549
26-Jan-01	-0.751	-1.616	1.861	-0.733	-2.032	-0.654	-0.248	-0.407	0.166
2-Feb-01	1.203	-0.015	2.742	-0.508	-0.599	0.565	-0.248	0.812	0.660
9-Feb-01	1.650	1.861	-2.054	0.433	1.481	0.674	-0.248	0.922	0.850
16-Feb-01	-0.977	2.327	-0.016	0.092	-11.104	-1.936	-0.248	-1.688	2.849
23-Feb-01	1.317	29.470	0.694	-4.308	7.482	6.931	-0.248	7.178	51.531
WEEKEND	KCB	KPL	KENAIR	BBK	NIC	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
2-Mar-01	-2.088	-5.985	-0.357	-0.105	-4.226	-2.552	-0.248	-2.305	5.311
9-Mar-01	19.233	-0.219	-0.282	3.722	-0.208	4.449	-0.248	4.697	22.060
16-Mar-01	11.532	-3.272	-12.629	3.588	3.130	0.470	-0.248	0.717	0.515
23-Mar-01	-1.172	-4.568	-2.532	-4.835	-8.817	-4.385	-0.248	-4.137	17.115
30-Mar-01	-9.840	-14.249	0.725	-1.363	-3.892	-5.724	-0.248	-5.476	29.991
WEEKEND	KCB	KPL	KENAIR	KAKUZ	NIC	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
6-Apr-01	3.864	0.400	-1.813	0.000	-5.206	-0.551	-0.248	-0.303	0.092
13-Apr-01	0.250	-0.405	-0.045	-12.376	0.662	-2.383	-0.248	-2.135	4.559
20-Apr-01	0.093	-0.420	-2.675	-0.762	-2.702	-0.223	-0.248	0.024	0.001
27-Apr-01	6.076	-0.092	1.541	0.000	-0.384	1.428	-0.248	1.676	2.808
4-May-01	-1.040	-3.118	-3.122	0.000	-3.017	-2.059	-0.248	-1.812	3.282
11-May-01	-0.397	-9.871	-0.381	0.000	-0.183	-2.166	-0.248	-1.919	3.682
18-May-01	4.455	-12.425	1.656	-2.969	0.010	-1.854	-0.248	-1.607	2.582
25-May-01	11.039	-7.452	1.529	3.060	-0.234	1.588	-0.248	1.836	3.371
1-Jun-01	-2.794	-0.463	0.870	2.216	-5.519	-1.138	-0.248	-0.891	0.793
8-Jun-01	-4.933	0.439	1.899	0.000	-1.010	-0.721	-0.248	-0.473	0.224
15-Jun-01	1.812	-0.267	8.430	-4.328	0.581	1.246	-0.248	1.493	2.230
22-Jun-01	-5.811	1.213	-0.723	2.259	3.871	0.161	-0.248	0.409	0.167
29-Jun-01	2.832	1.121	-0.983	0.000	2.946	1.183	-0.248	1.431	2.047
6-Jul-01	3.103	0.953	-2.451	0.000	-0.087	0.304	-0.248	0.551	0.304
13-Jul-01	-2.178	-0.316	0.180	0.000	0.256	-0.412	-0.248	-0.164	0.027
20-Jul-01	-4.251	-6.324	1.825	0.000	1.167	-1.517	-0.248	-1.269	1.610
27-Jul-01	1.246	2.691	-0.867	-2.500	0.297	0.173	-0.248	0.421	0.177
3-Aug-01	-4.119	-3.057	1.085	-6.410	3.611	-1.778	-0.248	-1.530	2.342
10-Aug-01	18.031	2.042	-8.011	-2.055	0.029	2.007	-0.248	2.255	5.084
17-Aug-01	-4.307	-1.751	-1.723	-2.098	-2.117	-2.399	-0.248	-2.151	4.629
24-Aug-01	-7.449	-8.793	1.046	0.000	0.307	-2.978	-0.248	-2.730	7.453
31-Aug-01	-5.489	-2.827	0.268	0.000	-3.302	-2.270	-0.248	-2.022	4.090
7-Sep-01	-0.422	-5.968	-0.196	-2.723	-7.471	-3.356	-0.248	-3.109	9.663
14-Sep-01	-0.079	-0.521	-0.555	0.000	0.556	-0.120	-0.248	0.128	0.016
21-Sep-01	-2.964	-10.993	-0.698	0.000	-0.077	-2.946	-0.248	-2.699	7.283
28-Sep-01	-6.431	1.930	-0.018	0.000	-12.768	-3.457	-0.248	-3.210	10.304
5-Oct-01	-0.449	12.314	-4.112	0.000	-0.948	1.361	-0.248	1.608	2.587
12-Oct-01	0.576	11.720	-16.741	0.000	-7.764	-2.442	-0.248	-2.194	4.814
19-Oct-01	1.005	2.853	16.541	0.000	4.237	4.927	-0.248	5.175	26.780
26-Oct-01	8.500	2.526	6.714	6.470	11.408	7.124	-0.248	7.371	54.336
2-Nov-01	19.530	0.155	-2.951	2.069	3.613	4.483	-0.248	4.731	22.380
9-Nov-01	-2.922	-19.544	-8.358	0.000	13.129	-3.539	-0.248	-3.292	10.835
16-Nov-01	-7.643	-17.608	8.470	0.000	2.653	-2.826	-0.248	-2.578	6.646
23-Nov-01	-10.881	-2.991	2.434	0.000	-4.819	-3.251	-0.248	-3.004	9.022
30-Nov-01	-2.395	5.327	-2.167	0.000	1.151	0.383	-0.248	0.631	0.398
7-Dec-01	-3.551	8.879	0.942	0.000	0.055	1.265	-0.248	1.512	2.288
14-Dec-01	0.369	-0.856	-0.522	0.000	0.134	-0.175	-0.248	0.073	0.005
21-Dec-01	0.880	-1.112	0.456	0.000	0.072	0.059	-0.248	0.307	0.094

$$\text{Std deviation} = \left[\frac{403.790}{52 - 1} \right]^{0.5}$$

$$= 2.814$$

0.000	403.790
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-0.248

Average Mean Return for the Year 2001

Descriptive Statistics: Mean Return and Risk

Year	Number	Mean Return	Risk
1996	5	0.336	1.534
1997	5	0.523	4.335
1998	5	-0.051	2.386
1999	5	0.054	1.890
2000	5	-0.449	2.336
2001	5	-0.248	2.814
Average		0.028	2.549

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
NSE 20 SHARE INDEX CONSTITUENT SECURITIES
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GHW	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	Year 1996			
																					AVERAGE	Mean Return (X)	(X - X)	(X - X) ²
05-Apr-96	-0.600	-8.564	-4.670	0.023	-1.107		-5.991		-0.346	-0.138	5.274	-3.151	-2.480	-1.419	-0.235	0.000	6.950	-7.976	-2.747	-0.470	-1.541	0.249	-1.790	3.203
12-Apr-96	2.444	-2.439	-1.176	1.511	-1.472		3.624		1.604	-2.158	-11.008	-2.748	-0.992	0.120	0.236	0.000	-0.542	-1.716	0.066	-1.988	-0.924	0.249	-1.173	1.376
19-Apr-96	0.029	-1.000	2.976	14.737	1.893		5.273		6.723	-0.033	9.299	11.296	13.881	11.983	1.511	0.000	-6.379	3.886	1.468	-0.887	4.259	0.249	4.010	16.079
26-Apr-96	1.097	0.000	0.000	9.794	0.613		0.404		-2.244	0.572	1.181	-0.362	-1.689	7.384	-0.077	0.000	0.346	2.366	-1.780	0.810	1.023	0.249	0.774	0.600
03-May-96	0.577	0.000	3.683	-1.714	-0.058		0.969		-1.122	1.611	0.071	0.493	-3.526	-4.684	-0.426	0.000	0.647	1.342	-4.398	6.336	-0.023	0.249	-0.271	0.074
10-May-96	-0.040	11.930	6.380	-1.229	-0.342		0.202		0.459	-0.071	2.403	0.589	6.031	-1.673	0.019	-4.293	1.979	5.342	6.311	1.296	1.961	0.249	1.712	2.931
17-May-96	0.091	1.073	-0.427	1.688	-1.433		1.035		-1.244	-1.491	-3.177	0.008	-2.765	0.372	0.019	0.000	0.125	-1.197	-2.221	7.814	-0.096	0.249	-0.345	0.119
24-May-96	-0.165	0.000	1.930	-1.117	1.896		0.335		0.141	-3.088	-4.259	2.444	2.515	7.945	0.330	-0.357	-0.265	-0.160	2.771	-1.695	0.496	0.249	-1.113	1.240
31-May-96	-1.097	3.891	0.461	-3.281	-2.306		1.719		-0.450	1.724	6.101	1.944	29.266	1.766	-1.013	-1.718	1.964	3.289	0.692	-3.956	2.363	0.249	2.114	4.468
07-Jun-96	1.587	0.000	2.797	-3.467	1.636	1.627	1.108		-1.038	0.901	2.371	-1.210	0.337	0.289	3.822	-0.074	9.479	4.188	1.482	-5.857	0.742	0.249	0.993	0.243
14-Jun-96	0.232	0.000	0.448	-3.080	-0.441	-5.542	7.791		-1.826	3.404	-0.467	-1.706	1.824	2.739	-1.878	3.291	-0.882	2.125	6.152	1.168	1.502	0.249	1.253	1.571
21-Jun-96	-0.062	9.097	2.170	-0.590	7.458	-4.786	1.307		-1.003	0.386	-0.056	-1.546	-1.954	-2.713	-0.379	-5.655	-0.559	-1.807	5.274	0.782	-0.242	0.249	-0.491	0.241
28-Jun-96	0.367	2.606	-1.794	-0.062	2.446	-0.585	1.652		0.680	1.733	0.464	1.522	0.908	-0.625	0.285	-2.312	2.450	3.410	3.740	-1.434	0.097	0.249	-0.152	0.023
05-Jul-96	0.439	-2.482	-10.624	3.624	0.310	-4.529	4.290		-1.284	-2.108	-1.379	-3.176	-3.391	-2.080	0.000	-1.978	-2.660	1.733	0.500	-0.794	-0.560	0.249	-0.809	0.654
12-Jul-96	0.286	2.545	0.000	-0.590	-0.073	3.458	0.347		0.469	-0.565	0.266	-0.732	1.794	-0.247	0.038	-1.557	4.860	-1.012	4.062	-1.194	0.276	0.249	0.027	0.001
19-Jul-96	0.006	0.299	-0.088	0.000	-1.104	-2.556	2.510		-1.414	0.129	5.733	-1.537	-1.610	-3.764	0.455	0.065	-1.991	-1.572	0.887	-2.130	-0.624	0.249	-0.873	0.761
26-Jul-96	0.028	2.003	0.000	0.000	-2.229	-3.057	-1.847		2.301	-0.982	2.039	0.478	-1.707	0.360	0.132	0.016	-2.383	-2.962	-0.460	-2.500	-1.537	0.249	-1.785	3.188
02-Aug-96	0.134	-5.995	0.894	-11.952	0.292	-5.190	-1.711		0.026	-1.932	-5.644	1.897	-0.661	0.974	-0.679	-0.016	-0.061	9.379	-1.663	-0.158	0.472	0.249	0.223	0.050
09-Aug-96	-0.134	2.830	0.028	4.786	4.189	-4.930	0.737		-2.474	-19.618	-2.205	-1.652	-4.642	-1.067	-1.575	0.806	-2.455	-11.302	-0.708	-3.659	-2.825	0.249	-3.074	9.448
16-Aug-96	-3.179	1.529	-0.371	-0.369	-1.085	-1.137	1.486		0.515	4.320	0.067	0.968	-2.805	0.154	-1.253	-0.704	-1.548	-5.663	3.104	-1.051	0.300	0.249	0.051	0.003
23-Aug-96	1.794	0.235	2.218	-2.279	-0.285	3.013	4.903		-0.621	0.365	2.496	-2.396	4.080	2.460	0.957	0.467	13.224	2.378	2.484	-4.640	-1.498	0.249	1.249	1.561
30-Aug-96	-0.062	0.952	0.000	1.395	2.288	6.062	-0.605		-5.173	0.021	-3.223	-3.390	1.580	0.050	-2.360	1.524	-10.139	2.484	1.870	-3.413	-1.586	0.249	-1.835	3.368
06-Sep-96	-0.017	0.695	-5.946	-1.462	-3.492	2.546	-0.297		-5.384	0.435	-0.762	-2.538	-0.026	0.150	2.714	-0.253	6.004	-2.966	4.326	-2.332	0.234	0.249	-0.015	0.000
13-Sep-96	0.403	0.781	9.195	-0.277	-1.260	-4.846	1.074		3.859	0.884	-1.607	4.351	11.066	-7.339	-3.742	-1.315	-7.316	23.609	8.257	1.620	1.674	0.249	1.425	2.031
20-Sep-96	0.011	-0.806	1.018	2.698	0.384	-4.909	1.080		-2.419	1.958	-2.699	-2.015	0.381	4.041	-5.069	4.301	9.185	-5.653	2.510	-2.229	0.166	0.249	-0.083	0.007
27-Sep-96	-0.008	0.783	-0.366	-0.017	2.168	-1.833	0.129		0.688	-0.589	2.465	1.512	-0.812	-0.718	1.456	-2.754	-0.741	-0.878	8.430	-1.119	1.601	0.249	1.352	1.828
04-Oct-96	0.821	0.000	-0.643	-3.969	1.621	-0.115	0.017		0.152	-0.624	-5.216	0.979	-0.785	-0.207	-0.557	0.000	2.817	0.723	-3.834	-0.645	-0.323	0.249	-0.572	0.327
11-Oct-96	-0.606	3.909	0.526	3.920	18.210	-2.691	0.205		-1.941	-2.968	0.916	-0.040	0.373	-2.589	0.366	2.848	5.011	-1.601	1.675	0.026	0.354	0.249	0.105	0.011
18-Oct-96	-0.034	0.547	0.000	2.001	-0.124	-1.370	0.038		0.250	-1.513	-0.314	0.498	1.179	-2.149	1.137	0.000	0.115	-13.364	2.294	-1.332	-1.037	0.249	-1.285	1.652
25-Oct-96	0.023	0.000	0.524	1.730	6.017	2.220	2.001		-1.144	-1.434	1.293	0.555	-1.195	1.435	0.043	0.000	0.773	11.574	4.911	-0.640	0.171	0.249	-0.077	0.006
01-Nov-96	-3.955	0.000	0.416	-1.569	0.627	2.220	2.001		0.468	-1.599	2.338	0.319	2.143	0.803	-0.488	0.000	-2.330	10.418	2.342	-8.928	0.202	0.249	1.783	3.178
08-Nov-96	0.000	0.000	0.891	1.986	-8.388	0.892	-1.876		0.016	4.858	4.453	-0.276	0.275	0.053	0.533	2.046	3.697	12.085	3.541	0.741	0.137	0.249	-0.112	0.012
15-Nov-96	0.000	-0.563	-0.591	3.933	-1.388	-5.426	1.804		0.373	-4.603	7.270	0.575	0.356	-0.850	-0.848	-1.251	2.754	-0.511	-0.147	0.325	0.521	0.249	0.272	0.074
22-Nov-96	3.941	3.397	0.591	1.932	-0.795	-1.839	-0.647		0.696	0.613	19.429	0.179	0.749	3.642	0.663	0.000	-3.784	-6.235	3.527	0.792	1.110	0.249	0.861	0.741
29-Nov-96	-0.481	-1.997	0.047	2.282	-0.173	-0.796	0.279		-0.061	-4.619	4.812	0.967	-0.176	1.809	-0.064	0.000	7.934	-0.079	-0.701	1.758	-0.266	0.249	-0.515	0.265
06-Dec-96	0.717	-0.046	0.396	2.510	-0.525	-13.926	0.503		0.784	0.191	-8.356	1.502	-1.491	-0.152	0.404	-0.763	-6.752	-1.935	0.008	0.734	0.029	0.249	-0.220	0.048
13-Dec-96	0.000	-0.709	1.208	1.706	4.884	1.404	1.009		0.381	-0.249	-2.022	-0.144	-1.061	-0.864	0.000	0.000	-0.695	0.676	0.440	0.411	0.000	0.249	0.000	65.593
20-Dec-96	-5.144	0.714	-1.381	-1.058	8.718	9.766	-0.847																	
27-Dec-96	0.000	-0.709	0.000	-2.673	5.402	0.438	1.218																	

Average Mean Return for the Year 1996

0.249

Std deviation = $\sqrt{\frac{65.593}{39 - 1}}$ ^{0.5}
= 1.314

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 NSE 20 SHARE INDEX CONSTITUENT SECURITIES
 FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GIWK	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE	Year 1996			
																						Mean Return (X)	(X - X)	(X - X) ²	
03-Jan-97	1.024	0.264	0.000	9.852	0.700	0.574	-0.477		1.808	-3.169	8.072	1.540	2.939	3.333	0.021	0.123	1.850	8.129	17.175	2.114	2.941	0.347	2.593	6.724	
10-Jan-97	-7.754	0.599	0.000	-0.971	1.758	9.464	1.311		5.581	0.491	6.779	6.823	1.666	8.834	3.936	1.414	-1.244	-3.970	1.567	2.115	2.021	0.347	1.674	2.801	
17-Jan-97	-4.733	4.100	0.513	10.536	10.761	11.369	1.780		13.428	17.355	2.069	13.636	8.998	35.157	20.236	0.000	4.487	4.603	95.615	35.000	14.995	0.347	14.648	214.557	
24-Jan-97	-0.664	0.000	2.020	5.926	0.871	-4.040	0.429		-4.449	12.303	4.733	-5.786	7.492	-2.665	5.537	3.636	-0.341	0.851	-16.507	7.050	0.863	0.347	0.515	0.266	
31-Jan-97	0.607	-0.226	-0.494	-12.751	-2.780	-13.744	-0.953		-1.226	-11.360	-0.447	-2.875	1.533	-7.106	-0.128	2.339	5.688	9.208	-3.664	-5.469	-2.308	0.347	-2.655	7.051	
07-Feb-97	0.631	0.227	0.453	10.829	-7.392	-0.103	-3.927		0.515	0.149	1.266	3.932	0.378	-0.037	-3.614	1.814	-4.317	-0.285	21.442	-9.767	0.642	0.347	0.294	0.087	
14-Feb-97	-0.020	0.850	0.063	0.512	10.459	2.664	0.002		3.074	-6.064	1.555	-0.694	-0.216	6.420	-5.450	0.772	-0.090	0.057	23.347	-4.994	1.697	0.347	1.350	1.822	
21-Feb-97	-0.060	0.120	0.967	0.000	6.383	1.602	2.979		1.109	-1.146	3.386	2.100	-6.429	30.796	-17.874	3.286	8.545	0.004	-6.210	-1.942	1.453	0.347	1.106	1.223	
28-Feb-97	0.567	0.000	0.561	2.116	-1.580	-3.963	-1.043		-5.029	9.036	4.206	-4.207	-1.319	-5.953	-1.460	-0.243	10.916	-1.219	-0.911	-1.944	-0.077	0.347	-0.425	0.180	
07-Mar-97	0.000	-0.524	1.244	-0.050	-1.985	2.748	-0.371		-2.190	-18.360	5.203	-12.913	2.179	7.528	3.267	1.351	-6.522	2.091	0.032	-2.866	-1.060	0.347	-1.407	1.981	
14-Mar-97	-4.863	-0.460	-2.154	7.062	-8.859	-2.897	0.484		0.434	1.896	-7.630	-1.514	2.637	-1.352	-0.295	-4.000	-3.411	-0.176	-1.055	-17.596	-2.303	0.347	-2.650	7.023	
21-Mar-97	-4.686	-0.293	0.394	-5.087	-5.002	1.822	0.913		-0.743	-0.538	0.053	0.259	-0.383	9.435	0.000	0.000	0.461	-3.880	-1.361	0.272	-0.440	0.347	-0.788	0.620	
28-Mar-97	-4.068	0.000	0.000	-0.227	-0.373	-4.609	-0.666		-0.745	6.717	1.460	-2.801	3.978	-5.546	-0.429	0.742	-4.008	-2.172	4.290	1.947	0.457	0.347	0.110	0.012	
04-Apr-97	-6.955	-2.962	0.699	2.284	4.880	-2.522	9.831		-0.631	2.858	0.138	-2.295	0.975	1.974	-0.431	0.000	1.704	-3.153	0.573	-1.271	0.115	0.347	-0.232	0.054	
11-Apr-97	-1.402	-1.209	-0.673	-1.494	0.754	0.515	5.178		0.771	-0.248	-1.997	-2.396	-1.585	0.528	-0.476	-2.778	-2.599	5.692	0.050	-0.650	0.842	0.347	0.495	0.245	
18-Apr-97	2.502	-0.290	0.000	3.936	-0.134	-0.952	16.633		2.970	3.265	-7.421	0.561	-0.118	0.475	-0.022	-1.200	-0.098	3.527	1.875	0.357	0.337	0.347	-0.011	0.000	
25-Apr-97	-0.170	-0.052	0.000	-3.052	-0.059	1.918	3.641		6.118	-2.816	2.400	3.003	0.109	1.067	-0.739	-0.347	2.790	0.203	-0.022	1.234	1.857	0.347	1.510	2.279	
02-May-97	1.617	0.714	0.564	-0.669	6.965	8.067	4.126		5.120	1.326	4.565	1.263	4.826	1.660	0.920	1.103	-0.016	9.584	5.150	1.620	2.364	0.347	2.016	4.066	
09-May-97	-0.580	-0.709	-0.343	4.850	2.774	-0.593	3.093		5.120	1.326	4.565	1.263	4.826	1.660	0.920	1.103	-0.016	9.584	5.150	1.620	2.364	0.347	2.016	4.066	
16-May-97	-0.990	0.000	0.710	-4.385	-0.421	-0.638	0.312	-4.184	-0.039	-0.373	1.007	1.711	1.368	-3.698	-0.808	0.459	-2.162	8.908	4.715	1.889	0.131	0.347	-0.217	0.047	
23-May-97	0.553	-1.163	0.323	0.321	0.478	-5.344	5.622	-4.973	-2.560	1.644	0.607	-0.302	0.719	-0.524	2.365	-0.314	-0.373	-15.356	14.559	6.097	0.119	0.347	0.585	0.342	
30-May-97	0.614	-0.269	1.449	-8.492	2.283	0.088	2.019	-10.547	-2.261	-0.797	-1.295	3.016	0.987	0.215	0.152	0.169	1.401	-2.815	-0.290	-0.840	-0.339	-0.970	0.347	-1.318	1.736
06-Jun-97	-3.504	1.449	-8.492	2.283	0.088	2.019	-10.547	-2.261	-0.797	-1.295	3.016	0.987	0.215	0.152	0.169	1.401	-2.815	-0.290	-0.840	-0.339	-0.970	0.347	1.208	1.459	
13-Jun-97	4.089	0.000	12.050	0.694	0.000	11.407	10.302	-0.079	0.134	-2.023	4.176	-0.160	0.983	-0.177	-3.148	0.451	1.715	-1.206	-1.374	-6.188	1.555	0.347	1.223	1.496	
20-Jun-97	-2.272	0.110	-1.127	3.907	0.000	-9.490	4.159	3.983	0.000	-1.699	12.303	1.244	1.434	1.089	2.138	6.553	-1.989	11.402	3.098	-3.429	1.571	0.347	0.076	0.006	
27-Jun-97	-3.930	0.940	0.652	0.210	-3.620	12.799	-0.591	2.453	-0.589	0.582	5.878	-0.425	4.372	0.025	-1.495	0.000	2.806	-11.066	-1.591	1.064	0.424	0.347	-0.236	0.056	
04-Jul-97	2.096	0.810	-5.602	3.734	-2.600	-6.614	1.248	0.330	-0.606	-0.472	-0.390	1.326	13.137	-0.225	0.000	0.000	-3.890	-1.155	1.422	-0.320	0.111	0.347	-0.746	0.557	
11-Jul-97	2.145	-1.134	5.000	-6.148	-0.400	-7.487	3.186	-1.153	-0.230	0.022	-14.053	5.107	-13.762	3.640	-0.564	-2.542	0.035	17.366	2.531	0.462	-0.399	0.347	-1.589	2.526	
18-Jul-97	-2.329	1.388	1.317	2.390	3.731	-4.227	-12.007	-0.261	-0.421	-0.143	-2.455	0.062	1.012	-2.979	0.283	-1.351	0.207	-7.317	-2.650	0.911	-1.242	0.347	-0.699	0.489	
25-Jul-97	-3.338	0.380	-0.360	0.626	-1.161	14.070	11.606	-0.068	-3.421	-0.082	2.050	-3.988	2.274	0.424	-1.913	2.740	-0.211	2.185	0.214	-1.098	1.047	0.347	-1.521	2.313	
01-Aug-97	8.457	0.605	0.000	-0.538	-1.834	-7.689	-5.902	0.149	-0.945	-0.009	-4.773	-2.229	0.373	1.665	0.953	-2.333	-1.161	-4.474	-0.813	-0.972	-1.173	0.347	-2.594	6.731	
08-Aug-97	-0.927	-1.133	2.596	-1.761	0.942	-2.887	6.866	-0.049	0.769	-0.637	-4.201	-3.781	-16.462	-3.007	-1.888	0.341	-2.856	-5.319	-6.336	-5.210	-2.247	0.347	0.770	0.593	
15-Aug-97	-1.231	2.989	5.745	1.194	-0.654	3.041	1.563	0.014	2.587	-2.485	1.076	1.122	2.936	6.050	-1.365	1.361	1.029	-3.535	-0.511	1.429	1.118	0.347	0.585	0.342	
22-Aug-97	4.835	4.082	7.439	6.603	2.628	-2.163	0.697	-1.207	-3.275	1.905	5.057	-1.846	1.711	-2.473	-2.685	-1.018	-0.349	2.205	-1.361	0.933	0.347	-0.078	0.006		
29-Aug-97	-3.162	0.000	3.334	4.819	1.411	18.261	0.253	-9.412	-0.127	-1.374	0.035	-2.501	6.486	5.422	-2.303	-3.448	-6.676	-6.182	2.657	-2.094	0.270	0.347	0.095	0.009	
05-Sep-97	-2.578	15.583	4.774	3.041	0.474	-18.745	1.573	1.526	-2.129	-6.166	1.181	1.108	-3.901	-0.067	-1.572	1.157	6.508	8.258	-0.188	-1.072	0.443	0.347	2.425	5.881	
12-Sep-97	0.806	22.055	20.871	5.848	0.229	0.777	2.585	9.478	0.980	0.321	-0.347	-1.835	4.499	-0.044	-2.057	0.000	-0.375	-10.528	-0.439	2.628	2.772	0.347	0.013	0.000	
19-Sep-97	0.383	8.923	1.791	0.680	1.942	10.451	0.133	-1.544	0.599	-1.040	-0.250	-4.419	3.565	-6.480	-1.655	-1.144	-1.963	1.694	-1.091	-2.461	0.361	0.347	-1.415	2.001	
26-Sep-97	-0.349	6.345	-5.969	-1.932	-1.743	0.779	0.124	0.195	0.340	-2.621	-0.114	-0.051	-1.865	-2.682	-1.306	1.429	-10.170	-2.431	2.138	-1.459	-1.067	0.347	-1.114	1.241	
03-Oct-97	0.192	1.005	-3.880	1.827	-2.851	2.435	4.894	-1.010	0.085	-0.474	-7.086	0.853	-11.420	-0.853	-4.378	0.000	-0.788	-1.945	8.850	-0.788	-0.767	0.347	-1.886	3.558	
10-Oct-97	0.765	0.459	0.000	-4.785	-0.391	-14.869	-3.113	-0.189	0.833	-3.095	-1.828	0.124	0.035	-12.568	-0.160	-0.563	0.674	0.004	-3.195	-1.539	-1.539	0.347	-1.797	3.229	
17-Oct-97	0.668	-5.396	-2.524	-0.085	-2.492	-0.734	-1.146	-3.304	1.862	0.251	-11.322	-1.846	2.204	-12.124	1.466	-0.850	9.842	-3.038	0.430	-0.854	-1.450	0.347	-1.922	3.696	
24-Oct-97	-2.352	5.000	0.000	-1.876	1.821	-3.579	1.113	-8.184	-0.206	-1.953	4.193	-1.030	3.519	-1.184	1.366	0.000	-13.815	-4.595	-7.560	-2.178	-1.575	0.347	-0.622	0.387	
31-Oct-97	-0.831	-6.667	0.000	0.066	-0.280	-1.036	-1.193	-5.222	-0.882	-3.810	4.979	0.419	-2.873	19.145	-0.026	0.000	2.410	-4.781	-0.807	-4.109	-0.275	0.347	-0.355	0.126	
07-Nov-97	1.481	0.000	-4.138	-2.712	-4.065	0.030	0.886	-0.797	-0.542	1.267	3.016	0.316	0.494	-1.631	0.544	-1.757	3.734	8.272	-4.506	0.151	-0.008	0.347	-1.809	3.271	
14-Nov-97	0.000	0.000	0.000	3.528	-2.993	-0.841	1.669	0.992	-1.369	0.366	-11.349	-2.406	-1.106	-9.701	0.877	0.000	0.274	4.111	-11.644	0.369	-1.461	0.347	-3.341	11.165	
21-Nov-97	0.325	0.000	-30.358	-1.805	4.945	-0.82																			

NSE 20 SHARE INDEX CONSTITUENT SECURITIES
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BROND	GWK	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	Year 1996				
																					AVERAGE	Mean Return (X)	(X - X)	(X - X) ²	
02-Jan-98	0.000	0.000	0.000	0.000	0.000	-1.328	1.065	0.000	-1.202	4.961	-2.025	3.288	-1.961	4.468	-1.867	0.000	0.000	0.000	0.000	0.709	0.305	0.320	-0.014	0.000	
09-Jan-98	12.018	-0.233	0.000	-1.635	4.001	-0.271	-0.873	0.319	2.262	-0.089	2.754	1.711	1.067	4.080	1.902	0.000	-1.140	0.193	4.315	0.000	1.514	0.320	1.195	1.427	
16-Jan-98	6.433	4.350	0.000	1.622	19.282	16.592	1.102	8.020	3.337	4.199	13.457	4.727	1.892	19.194	0.000	-0.688	2.718	2.358	7.360	3.882	5.992	0.320	5.672	32.176	
23-Jan-98	-0.684	0.000	0.000	0.503	5.119	4.678	0.297	4.359	0.726	0.942	-1.033	0.176	0.599	-0.839	0.027	0.000	5.131	7.959	0.858	16.671	2.274	0.320	1.955	3.822	
30-Jan-98	-0.727	13.551	14.583	0.430	-14.701	-1.841	0.708	21.372	-3.082	-1.170	-4.255	-1.451	-0.818	-4.758	0.027	0.000	-2.713	9.497	-2.045	9.444	1.603	0.320	1.283	1.646	
06-Feb-98	-0.771	8.199	0.909	-2.412	-2.101	-15.312	0.161	-18.331	-1.551	-3.374	-3.213	-3.630	-0.055	-3.939	1.333	0.000	1.317	2.408	-3.347	-8.864	-2.629	0.320	-2.948	8.692	
13-Feb-98	1.352	0.927	0.000	-2.299	3.944	2.224	1.131	2.058	4.454	-0.620	-0.785	-0.716	-0.287	0.000	-1.131	4.446	-1.557	-12.866	4.085	-5.733	-0.669	0.320	-0.388	0.151	
20-Feb-98	-0.100	0.000	2.703	9.270	-0.639	3.849	0.385	0.213	2.132	0.475	-0.429	-2.755	0.918	-0.100	0.505	-1.311	-0.553	-2.258	2.045	-1.484	0.643	0.320	0.324	0.105	
27-Feb-98	-5.334	9.350	12.214	23.091	0.497	-3.441	0.531	1.866	5.298	3.318	-0.884	-1.956	2.261	-19.820	-0.371	3.358	1.030	25.757	0.095	1.798	2.933	0.320	2.613	6.830	
06-Mar-98	-4.289	0.247	0.841	-0.899	1.404	-0.925	-0.419	1.562	-1.611	-1.652	0.626	-8.221	0.213	12.297	0.133	0.000	0.169	8.497	0.475	-0.268	0.409	0.320	0.090	0.008	
13-Mar-98	-2.643	3.523	-10.853	-13.974	4.291	-1.588	0.160	-0.206	0.801	-0.565	-4.550	2.437	-5.363	7.393	-0.504	-0.361	0.946	-3.999	-0.568	-4.441	-1.503	0.320	-1.823	3.322	
20-Mar-98	4.315	3.236	11.927	-4.097	-3.655	-1.270	1.785	-0.403	-7.551	-0.266	-4.399	-0.348	3.074	3.494	-9.440	1.304	-0.135	-19.836	-0.094	-5.565	-1.396	0.320	-1.716	2.943	
27-Mar-98	0.083	2.663	3.986	37.168	-5.248	-3.912	5.363	-0.648	-1.328	-1.401	-6.987	0.417	-3.732	0.025	-0.854	-1.845	0.115	11.724	-4.912	-3.366	1.366	0.320	1.046	1.094	
03-Apr-98	0.000	1.850	-2.710	-1.515	-5.554	11.927	1.395	-15.380	-1.896	0.385	-0.050	2.486	-4.219	-0.150	0.059	0.568	-0.175	-0.441	-3.118	-3.349	-0.994	0.320	-1.314	1.726	
10-Apr-98	-3.367	13.845	-0.168	-10.991	-4.720	-10.175	34.048	0.183	-0.222	-9.451	2.043	0.500	-2.853	-13.020	-0.712	0.000	-8.702	-1.401	-4.598	-5.831	-1.280	0.320	-1.599	2.557	
17-Apr-98	1.759	0.756	0.000	-5.916	2.929	-0.265	2.068	2.019	-2.239	0.863	3.659	-2.865	-0.934	-7.887	0.030	0.000	5.355	-5.005	-2.934	-3.835	-0.612	0.320	-0.932	0.868	
24-Apr-98	-2.169	0.513	0.000	-2.420	1.253	9.824	0.662	0.495	-2.343	0.805	-3.428	-5.282	-4.086	-0.406	-1.046	-0.725	-0.014	-2.330	-1.250	0.447	-0.575	0.320	-0.895	0.800	
01-May-98	2.148	-3.168	-7.692	-4.140	0.670	-9.953	1.431	-1.595	0.288	0.580	-0.311	-1.688	-18.732	4.456	0.302	-0.730	-1.445	-4.566	0.461	-3.335	-2.351	0.320	-2.670	7.131	
08-May-98	-2.103	-4.960	0.000	2.095	-0.375	-0.646	1.337	-0.259	-1.272	0.689	-0.557	-0.577	-2.105	-7.540	-0.572	0.000	-1.556	7.066	-0.274	-2.614	-0.413	0.320	-0.733	0.537	
15-May-98	-0.381	6.312	0.000	-1.245	0.831	12.553	0.538	-10.130	0.083	0.666	-0.320	-0.348	0.528	1.917	0.000	-3.765	-14.201	-4.195	3.201	-1.729	-0.484	0.320	-0.804	0.646	
22-May-98	2.609	0.264	1.667	0.416	2.040	-11.503	-0.102	-3.452	2.435	1.174	-8.299	7.329	5.198	4.909	2.059	-2.017	2.103	-0.732	2.183	-4.296	0.199	0.320	-0.120	0.014	
29-May-98	1.907	-0.530	-1.639	5.190	9.647	-0.060	0.420	7.228	5.890	0.732	5.812	-1.807	19.598	0.425	0.030	2.823	11.535	-1.342	0.742	0.465	3.353	0.320	3.034	9.203	
05-Jun-98	0.532	1.338	0.000	1.686	0.754	0.671	-0.642	6.757	6.417	-0.297	4.728	3.548	-3.770	5.991	-0.059	0.410	9.076	1.246	2.155	-1.818	1.936	0.320	1.617	2.613	
12-Jun-98	4.574	-2.157	8.333	3.912	-5.906	-2.981	46.528	-0.632	2.014	3.387	1.268	4.683	-1.230	-0.057	0.000	1.000	0.047	4.413	1.985	3.459	0.320	3.140	9.857		
19-Jun-98	1.028	7.582	5.020	-2.574	-4.408	2.079	-20.932	-4.843	-2.244	-0.198	-4.583	-1.988	-4.149	0.486	0.030	1.269	0.774	3.188	1.625	0.029	-1.141	0.320	-1.460	2.132	
26-Jun-98	2.552	-4.983	-12.104	-0.585	5.038	1.046	-8.953	5.937	-3.726	-2.878	0.676	0.077	0.437	-0.426	-0.445	-1.551	1.637	-0.372	0.378	-0.938	0.320	-1.258	1.582		
03-Jul-98	1.718	-9.104	18.204	-1.867	5.847	-0.106	2.878	-6.309	1.336	-0.900	1.470	-3.620	2.296	0.285	0.477	2.273	4.607	-4.483	1.517	0.582	0.855	0.320	0.535	0.287	
10-Jul-98	-0.270	-0.945	1.268	-0.167	-7.116	10.486	-1.294	1.515	-0.123	-0.190	-0.172	-0.854	-0.520	-0.057	0.059	0.000	-0.411	-0.347	-2.622	-1.223	-0.149	0.320	-0.469	0.220	
17-Jul-98	4.651	-3.980	0.944	0.085	-1.717	3.160	3.961	1.187	-2.628	-9.091	-0.608	1.216	6.120	-2.103	-2.550	2.903	0.666	1.331	-9.239	0.814	-0.244	0.320	-0.563	0.317	
24-Jul-98	1.381	-15.713	0.000	0.381	1.262	0.111	-3.215	-1.355	-3.015	0.000	-0.145	-4.364	-4.956	-0.990	2.190	0.357	-0.086	-0.102	4.547	1.511	0.907	0.673	0.320	0.353	0.125
31-Jul-98	0.731	5.455	0.000	-0.494	-0.709	5.327	5.948	-1.701	-0.065	-0.056	1.015	0.924	-0.260	-9.794	0.357	-0.086	-0.102	4.547	1.511	0.907	0.673	0.320	0.073	0.005	
07-Aug-98	2.063	9.167	-3.551	2.382	0.473	-6.388	-2.709	0.175	2.340	-0.112	0.700	-1.906	6.703	-3.750	0.030	0.086	1.719	0.500	2.017	-2.082	0.393	0.320	-0.130	0.017	
14-Aug-98	2.063	-0.068	0.000	0.000	-1.926	-0.622	5.788	-0.061	1.213	0.065	1.138	1.667	-5.576	-1.762	2.313	0.000	0.081	-0.531	-0.107	-0.107	0.189	0.320	-0.631	0.398	
21-Aug-98	-0.534	0.000	5.354	-2.209	2.815	1.457	-1.462	0.020	-0.303	0.091	-1.095	-1.707	-6.086	-2.310	2.841	0.000	-2.314	-0.549	-0.429	0.192	-0.311	0.320	-0.631	0.398	
28-Aug-98	0.136	0.403	0.449	-2.528	-0.659	2.279	2.469	0.461	0.633	-0.005	-1.112	0.879	-0.397	5.507	1.635	-2.857	0.728	0.550	-1.306	2.904	0.508	0.320	0.189	0.036	
04-Sep-98	3.306	-0.264	1.373	2.576	1.018	-14.566	0.207	-2.674	0.465	-6.872	-0.327	-1.527	-15.990	-6.557	-0.693	0.000	-0.011	-5.876	-0.006	-1.863	-2.414	0.320	-2.734	7.472	
11-Sep-98	-2.372	-0.137	-1.133	-1.289	0.548	-1.150	1.121	-12.953	-2.917	1.061	0.061	5.370	12.702	3.580	0.335	0.000	-0.039	-5.056	-0.763	1.141	-0.090	0.320	-0.409	0.168	
18-Sep-98	-0.155	0.382	1.069	2.420	0.075	0.852	0.408	0.687	0.181	2.005	-5.234	0.464	-5.476	3.699	1.475	0.000	-0.759	-0.034	-1.215	-4.213	-0.180	0.320	-0.499	0.249	
25-Sep-98	-0.236	-0.380	1.382	-0.799	2.510	0.646	-0.672	-0.352	0.322	2.358	-2.924	-5.760	-5.074	-6.067	2.962	0.676	-7.117	-0.218	-0.879	-1.268	-1.044	0.320	-0.837	0.701	
02-Oct-98	-1.122	1.538	-7.889	3.583	-2.904	0.699	-0.189	0.760	0.603	1.572	-2.384	-1.649	-0.079	-0.639	1.172	2.220	1.763	0.661	-4.725	-3.341	-0.517	0.320	-0.921	0.849	
09-Oct-98	0.943	0.234	0.000	-1.232	-1.125	0.852	-9.955	2.138	0.561	-2.472	-5.834	0.610	-0.353	-0.893	3.423	0.029	-0.075	2.765	0.722	-2.377	-0.602	0.320	-0.580	0.336	
16-Oct-98	0.332	0.281	0.000	-2.631	0.658	-0.081	-6.048	0.269	-0.671	3.841	0.966	-0.274	-0.675	-3.081	2.083	0.000	-1.370	-0.127	-1.168	-0.422	0.116	0.320	-0.203	0.041	
23-Oct-98	-1.707	-0.505	-3.281	0.107	2.917	0.456	4.962	0.269	-0.671	3.841	0.966	-0.274	-0.675	-3.081	2.083	0.000	-1.370	-0.127	-1.168	-0.422	0.116	0.320	-0.203	0.041	
30-Oct-98	-3.906	-0.009	3.248	-0.595	1.663	0.902	8.394	-0.917	0.331	1.151	-1.549	0.178	-1.795	0.000	1.916	0.000	-1.273	-0.368	-0.227	-4.357	-0.139	0.320	-0.180	0.032	
06-Nov-98	-3.271	0.099	0.000	0.598	-1.094	1.471	0.790	0.260	0.610	2.075	0.703	1.077	2.562	-1.250	0.903	0.681	-5.171	-3.867	-0.413	1.895	-0.067	0.320	-0.387	0.150	
13-Nov-98	-7.695	2.147	-2.005	-3.949	-2.750	-0.923	0.357	-3.618	0.303	2.137	1.402	0.347	-11.714	-8.101	-1.234	0.000	8.947	-1.610	-8.462	-4.886	-2.065	0.320	-2.385	5.687	
20-Nov-98	-3.288	0.132	-0.706	-2.829	-6.171	0.403	-0.198	8.183	-0.013	-0.079	0.668	0.779	-1.193	-1.6											

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 NSE 20 SHARE INDEX CONSTITUENT SECURITIES
 FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GWK	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE	Year 1996				
																						Mean Return (X)	(X - X)	(X - X) ²		
01-Jan-99	1.546	4.412	0.000	-0.229	-2.981	7.354	-1.037	6.833	-3.883	-4.817	3.872	5.695	8.146	1.925	8.862	0.000	17.119	0.812	1.619	17.420	3.633	-0.148	3.781	14.296		
08-Jan-99	0.113	-0.704	0.714	0.000	-1.444	0.644	1.457	6.857	3.324	4.506	0.237	-0.215	3.698	0.000	3.109	0.000	0.000	0.000	3.860	9.236	1.770	-0.148	1.917	3.676		
15-Jan-99	0.000	-1.587	0.000	5.218	2.395	6.077	3.473	11.270	2.168	1.461	0.216	0.568	15.631	3.722	2.754	-0.197	-12.159	11.722	5.219	0.477	2.922	-0.148	3.070	9.425		
22-Jan-99	-0.176	4.697	0.000	-0.482	0.393	-3.324	0.246	7.386	0.785	1.965	9.855	-3.533	-10.607	4.205	0.611	1.309	1.131	19.107	10.024	11.720	2.766	-0.148	2.913	8.486		
29-Jan-99	0.176	0.000	0.000	0.621	-1.159	4.215	-0.881	-14.880	-6.604	8.145	-6.424	1.440	-5.749	-7.222	-1.062	0.694	4.487	-6.709	-6.616	-1.067	-1.930	-0.148	-1.782	3.176		
05-Feb-99	-0.472	-1.569	0.000	-4.849	-1.533	-6.079	-4.524	-13.430	-1.019	1.620	-0.103	-10.992	-9.393	2.327	-7.378	4.248	-7.247	-0.010	-3.861	-7.529	-3.590	-0.148	-3.442	11.848		
12-Feb-99	-0.163	-4.873	-0.405	-0.024	2.263	-10.495	0.020	6.263	6.489	0.305	-0.050	0.586	7.655	-1.408	-10.210	-0.542	2.021	-4.647	-0.259	-4.949	-0.621	-0.148	-0.474	0.224		
19-Feb-99	0.071	1.447	0.000	-4.786	2.212	6.102	0.791	2.386	0.029	2.163	2.740	1.838	0.910	-7.166	-0.307	-0.226	-0.715	-1.249	-0.005	-7.099	-0.043	-0.148	0.104	0.011		
26-Feb-99	0.191	0.000	0.467	-2.957	2.621	-3.159	0.726	-7.664	-1.640	1.200	-0.095	3.392	-1.935	-2.307	17.160	0.107	1.533	0.398	-1.388	-6.039	0.031	-0.148	0.178	0.032		
05-Mar-99	-0.148	2.835	2.775	-6.977	2.706	-1.334	0.999	-2.518	-2.868	0.236	-6.177	-1.483	0.744	-8.719	7.876	-18.207	7.071	0.089	0.944	0.537	-1.091	-0.148	-0.943	0.890		
12-Mar-99	1.048	-1.155	-2.479	-1.268	2.588	0.112	0.568	6.932	-2.289	0.000	-6.928	0.897	2.299	0.332	5.301	13.988	-0.299	-4.859	-0.375	24.879	1.965	-0.148	2.112	4.461		
19-Mar-99	0.182	0.000	-0.789	1.093	1.425	4.236	-1.360	1.168	-2.018	0.125	0.720	0.910	-3.279	-0.826	-0.463	0.357	1.582	-0.072	-3.803	-15.059	-0.793	-0.148	-0.646	0.417		
26-Mar-99	0.000	0.000	1.932	-1.152	1.545	1.758	-0.826	-6.944	-12.189	-3.692	-6.512	-3.234	5.122	0.000	-5.662	1.068	8.731	-5.439	-2.692	-7.221	-1.770	-0.148	-1.623	2.633		
02-Apr-99	-1.783	0.000	0.000	-0.199	-0.521	-3.401	-0.397	0.122	5.616	-0.285	-7.230	2.664	-2.716	0.000	2.220	0.000	-1.920	-0.049	-4.320	0.463	-0.587	-0.148	-0.439	0.193		
09-Apr-99	2.528	0.000	-15.837	-2.397	-2.484	1.342	-0.531	3.266	2.152	1.099	-1.728	-2.762	-2.237	0.000	0.885	0.000	-0.691	-7.674	-4.030	8.801	-1.015	-0.148	-0.867	0.752		
16-Apr-99	0.437	0.120	9.677	-3.343	0.447	3.242	-0.293	0.958	-0.856	-1.066	-5.963	-0.581	4.898	0.000	0.399	0.000	4.835	6.797	0.212	0.454	1.019	-0.148	1.166	1.360		
23-Apr-99	-0.311	1.193	-5.260	0.189	-0.445	-4.876	0.604	1.690	0.216	-0.016	6.462	1.034	0.959	0.000	2.716	-2.817	-1.573	1.534	6.337	0.083	0.386	-0.148	0.533	0.285		
30-Apr-99	1.186	-0.592	-4.383	4.026	-3.169	2.331	-0.351	2.271	-0.658	1.571	-8.113	-0.329	11.938	-1.467	10.453	-1.014	5.620	-0.077	-0.531	0.614	0.966	-0.148	1.114	1.241		
07-May-99	0.720	0.000	-1.568	-1.792	-0.135	3.672	1.356	-1.105	-3.105	-1.552	-0.866	-1.231	-17.150	-12.618	0.616	1.977	0.808	0.012	0.848	0.536	-1.533	-0.148	-1.386	1.920		
14-May-99	-0.578	1.165	0.000	-1.504	-1.066	-0.152	-0.700	0.357	0.660	0.000	-0.443	0.729	-2.541	-6.175	-0.807	0.747	0.031	-0.865	-1.646	2.357	-0.552	-0.148	0.404	0.164		
21-May-99	0.116	-0.450	-2.218	0.689	0.712	1.436	-11.686	-0.187	2.095	-3.924	-0.424	-6.447	5.833	3.281	2.230	0.000	0.399	0.000	4.835	6.797	0.212	0.454	1.019	-0.148	1.166	1.360
28-May-99	-0.308	0.000	-2.631	-10.106	-0.185	-0.557	11.344	0.521	0.252	-0.109	2.843	3.485	2.001	3.485	2.001	3.485	-0.127	-1.657	0.538	-4.163	-3.929	-0.294	-0.148	-0.056	0.003	
04-Jun-99	0.981	0.000	7.083	0.004	0.690	0.771	-1.187	-0.570	-0.011	-3.249	-2.822	8.472	0.167	2.563	-2.976	0.581	2.687	0.016	1.916	4.065	0.959	-0.148	1.107	1.224		
11-Jun-99	-0.163	0.704	-3.333	2.386	-0.204	0.481	-14.394	0.879	-1.304	2.210	1.771	-2.354	-0.181	0.887	-0.502	1.155	-1.583	-0.013	-0.028	-1.984	-0.778	-0.148	-0.631	0.398		
18-Jun-99	0.102	-0.699	3.773	3.294	2.676	2.583	14.000	-3.139	1.101	1.211	-1.715	2.553	-1.627	14.942	0.518	-1.086	-0.269	0.151	-0.015	2.608	2.048	-0.148	2.196	4.821		
25-Jun-99	-0.102	1.046	0.000	0.000	-2.512	-2.132	-0.541	-0.288	-0.252	3.196	-0.154	0.719	-0.236	-8.655	0.307	0.648	-0.238	-1.624	-0.002	-0.442	-0.563	-0.148	-0.416	0.173		
02-Jul-99	-1.136	-0.338	0.046	0.112	0.270	-1.622	1.368	0.013	0.758	-3.631	-0.173	1.485	-0.690	-0.989	-0.361	0.000	0.534	-1.654	-1.441	0.069	-0.369	-0.148	-0.221	0.049		
09-Jul-99	1.142	-0.755	0.000	0.000	0.234	1.962	-0.424	1.627	1.847	-1.574	0.588	1.604	5.320	1.768	-4.128	0.000	1.557	-1.252	-1.023	0.631	0.456	-0.148	0.604	0.365		
16-Jul-99	0.007	-1.353	0.471	0.301	2.189	0.516	1.860	0.926	2.228	-0.601	5.802	2.522	1.643	12.613	-6.634	-4.895	0.482	4.517	0.218	3.143	1.298	-0.148	1.445	2.089		
23-Jul-99	0.000	0.000	0.000	-0.301	0.513	-15.073	-0.012	3.351	3.724	1.331	6.633	5.861	-0.830	-3.555	-2.400	0.000	0.951	0.067	2.313	1.033	0.180	-0.148	0.328	0.108		
30-Jul-99	0.000	0.000	2.479	1.182	0.627	0.021	-1.486	-0.239	-0.813	1.373	-7.028	0.868	-4.198	0.661	-2.746	4.412	0.330	-0.073	-2.190	1.937	-0.244	-0.148	-0.097	0.009		
06-Aug-99	0.170	0.000	-2.419	-1.168	1.027	-2.025	0.023	0.726	0.777	-0.596	-4.747	-1.304	-3.087	4.594	-1.888	0.000	0.157	-0.072	0.435	-0.469	-0.493	-0.148	-0.346	0.119		
13-Aug-99	0.340	0.000	0.000	0.000	0.069	-1.215	-2.101	0.087	1.426	0.432	1.039	0.990	-4.692	-1.288	-4.082	-0.085	1.842	0.024	-0.626	0.543	-0.365	-0.148	-0.217	0.047		
20-Aug-99	-0.494	0.000	0.000	1.852	-1.755	-4.021	-5.507	0.004	-3.312	1.910	0.926	3.662	0.403	0.368	2.686	-1.325	1.710	0.061	0.654	1.278	-0.045	-0.148	0.103	0.011		
27-Aug-99	-24.541	0.000	0.000	0.000	2.672	-5.497	-6.812	0.361	-5.913	-5.779	-13.013	0.423	3.055	-0.400	-0.612	0.000	3.024	-2.952	-1.319	-0.077	-2.869	-0.148	-2.721	7.406		
03-Sep-99	0.000	0.000	0.000	0.303	0.287	0.618	-6.165	0.265	-0.641	-8.656	0.779	-2.253	3.066	-2.544	1.914	0.171	-0.219	-5.875	-3.004	2.126	-0.991	-0.148	-0.844	0.712		
10-Sep-99	-14.639	-17.857	0.000	4.230	0.073	-1.945	4.635	1.738	-8.123	-3.823	3.259	-1.245	-2.555	3.022	-0.100	3.288	-0.171	-1.596	-1.439	-1.225	-0.427	0.592	-0.148	0.740	0.547	
17-Sep-99	8.528	0.000	0.000	0.248	-0.243	-0.770	-0.294	3.976	3.449	-1.042	-6.288	0.882	7.072	-0.100	3.288	-0.171	-1.596	-1.439	-1.225	-0.427	-2.324	-0.148	-2.176	4.735		
24-Sep-99	-1.814	0.000	-17.355	-2.265	-2.581	-1.029	-2.894	4.802	-0.449	0.724	-3.502	-0.381	-9.968	-6.306	1.713	-0.114	-2.836	1.701	-0.519	-3.398	-0.762	-0.148	-0.614	0.377		
01-Oct-99	1.292	0.000	0.000	-1.487	-1.156	-9.844	1.205	2.595	-3.970	3.331	-4.594	-0.282	4.591	-5.413	0.731	0.057	4.430	-1.105	-2.173	-3.441	-1.053	-0.148	1.201	1.442		
08-Oct-99	1.674	-1.860	0.000	0.000	-4.807	12.326	-0.128	-0.192	0.710	10.931	2.190	0.611	0.374	0.753	0.142	0.000	0.922	1.450	-0.599	-3.434	1.053	-0.148	0.663	0.439		
15-Oct-99	0.000	1.252	-0.858	2.137	0.028	-0.420	-0.500	-0.033	2.178	4.077	2.992	1.409	3.354	0.299	-0.551	0.057	-4.774	0.178	1.349	-1.870	0.515	-0.148	-0.307	0.094		
22-Oct-99	0.970	0.000	-0.075	-2.974	-1.080	-0.005	-0.267	0.013	2.132	-4.302	-0.890	0.625	1.531	-2.869	-0.348	0.000	-1.548	0.227	-1.951	1.710	-0.455	-0.148	-0.206	0.043		
29-Oct-99	-0.971	-3.741	0.000	-2.020	2.022	0.656	-1.430	-0.091	-0.012	4.348	-0.275	1.745	-2.533	-0.269	-0.429	-2.857	-1.241	0.277	-3.170	2.914	-0.354	-0.148	-0.206	0.043		
05-Nov-99	0.000	0.000	0.000	0.000	-11.793	-0.036	3.204	-0.040	-0.531	-2.083	-4.124	2.057	-0.515	1.038	0.415	0.000	-0.455	1.305	-11.399	-0.075	-1.152	-0.148	-1.004	1.008		
12-Nov-99	2.647	2.424	0.000	0.000	-6.232	5.446	-5.639	-0.322	-2.463	-2.744	-3.113	0.965	0.959	-0.914	-8.584	0.000	-10.042	-2.064	-4.044	0.286	-1.672	-0.148	-1.524	2.323		
19-Nov-99	-0.745	-2.944	0.000	-8.317	0.150	5.138	2.																			

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 NSE 20 SHARE INDEX CONSTITUENT SECURITIES
 FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GWK	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE	Year 1996			
																						Mean Return (X)	(X - X)	(X - X) ²	
07-Jan-00	0.000	0.000	0.000	0.000	0.233	-1.947	0.021	-0.566	0.488	2.763	2.241	0.630	1.587	0.962	0.476	0.000	-2.817	-0.143	-0.242	0.490	0.209	-0.241	0.450	0.202	
14-Jan-00	0.000	0.000	5.172	0.000	2.376	0.282	0.658	0.828	0.606	-0.080	4.142	0.675	0.247	-0.952	0.070	-0.775	0.060	3.478	-0.363	-0.078	0.817	-0.241	1.058	1.120	
21-Jan-00	-0.822	0.930	3.148	-8.020	-1.773	-0.314	-1.475	0.038	0.024	0.000	3.590	1.388	-2.347	1.308	-3.016	0.000	-0.834	-1.192	-0.118	-0.445	-0.526	-0.241	-0.285	0.081	
28-Jan-00	0.173	1.075	0.000	8.048	0.231	-1.753	-2.723	-0.093	-2.145	-1.772	0.348	0.708	-0.580	-0.873	-1.085	0.000	0.869	-0.679	1.013	1.895	0.133	-0.241	0.374	0.140	
04-Feb-00	0.000	-1.064	3.464	0.000	2.706	-1.609	-3.049	-0.246	-0.505	-2.034	2.623	1.258	0.149	0.651	0.073	0.000	-3.007	-0.545	0.072	0.111	-0.048	-0.241	0.193	0.037	
11-Feb-00	0.000	0.000	-0.154	-11.915	4.229	-1.248	-1.196	-0.042	-4.407	3.028	-12.324	-3.291	0.368	-0.875	0.000	0.000	2.017	-0.988	-0.720	-0.031	-1.377	-0.241	-1.136	1.291	
18-Feb-00	0.000	0.000	0.000	-1.338	-1.247	-0.742	-1.251	0.155	-0.518	0.172	0.803	1.901	1.904	0.729	0.073	0.000	0.443	0.000	0.801	-2.381	-0.025	-0.241	0.216	0.047	
25-Feb-00	-6.115	-3.226	0.000	-6.489	-2.172	-16.011	-0.068	0.278	1.341	0.840	-2.546	10.969	-3.389	-0.953	1.186	0.000	1.290	-0.201	-2.254	1.565	-1.298	-0.241	-1.057	1.117	
03-Mar-00	-17.554	-1.620	-7.692	0.000	2.255	11.690	-1.268	-0.300	15.145	0.133	0.493	20.310	-0.485	0.038	16.595	0.000	-0.624	-14.927	2.729	7.059	1.599	-0.241	1.840	3.387	
10-Mar-00	0.000	-1.741	-14.923	-2.778	2.379	1.267	0.561	0.210	1.517	7.475	0.037	-1.431	2.734	0.269	12.624	0.000	4.188	-8.687	-3.605	18.322	0.921	-0.241	1.162	1.350	
17-Mar-00	22.286	0.000	0.000	0.024	3.167	-0.619	-0.705	0.494	-1.714	-0.104	0.438	1.061	7.325	-0.230	0.934	1.047	0.593	1.654	0.458	-14.507	0.915	-0.241	1.156	1.336	
24-Mar-00	-4.510	-0.048	-8.579	2.833	1.528	0.621	-0.124	1.001	-18.683	-2.509	-0.368	-0.425	-0.368	-3.312	3.576	-14.562	0.000	1.666	2.876	-2.602	-2.484	-0.241	-2.243	5.030	
31-Mar-00	-4.277	0.000	0.045	-2.728	-6.708	3.617	-0.851	0.128	23.677	-0.987	-6.331	-3.592	0.278	3.898	1.529	0.000	-5.647	3.583	1.190	1.202	0.401	-0.241	0.642	0.413	
07-Apr-00	-7.802	0.048	0.083	0.149	3.534	2.557	-1.077	0.922	0.111	-0.006	-6.154	7.271	-0.626	-4.895	-1.130	0.000	-2.488	-2.912	-1.022	-1.478	-0.746	-0.241	-0.505	0.255	
14-Apr-00	-4.677	0.038	2.012	-2.170	-0.912	0.649	-8.405	-0.814	0.033	-1.846	4.358	1.195	0.490	1.315	0.841	-0.387	1.930	-0.868	-4.211	2.371	-0.353	-0.241	-0.112	0.012	
21-Apr-00	-0.847	3.409	-1.399	-14.689	0.050	0.262	-13.299	-6.313	0.500	1.887	6.854	0.880	-1.374	-1.520	0.519	0.900	2.665	3.444	-8.025	0.271	-1.291	-0.241	-1.050	1.103	
28-Apr-00	-0.523	0.000	-3.344	7.142	2.742	0.161	1.758	-2.672	-0.541	-0.231	1.235	-0.432	0.418	-2.108	0.376	0.000	-3.678	-3.033	-1.904	-0.882	-0.276	-0.241	0.035	0.001	
05-May-00	0.000	0.000	0.000	0.000	-2.655	3.067	1.484	4.962	-1.155	-6.757	0.000	-12.852	-2.024	0.743	5.547	0.283	-4.837	1.458	-4.083	0.257	0.109	-0.241	0.018	0.000	
12-May-00	-0.103	0.000	0.000	5.230	0.006	-1.555	2.407	4.575	0.382	0.000	-12.852	-2.024	0.743	5.547	0.283	-4.837	1.458	-4.083	0.257	0.109	-0.241	-0.676	0.457		
19-May-00	-0.398	-9.715	-1.677	5.412	0.207	1.770	0.121	-0.089	-0.716	-18.694	15.941	-1.555	-0.335	0.322	-0.498	5.000	-0.153	1.039	-15.239	0.017	-0.917	-0.241	-0.245	0.081	
26-May-00	0.503	-5.239	0.000	3.541	-0.686	-0.169	-1.101	-3.028	0.282	2.756	-0.367	2.263	0.556	0.000	1.200	-10.746	-0.383	-0.901	0.443	0.565	-0.526	-0.241	0.245	0.126	
02-Jun-00	-3.128	0.000	0.000	5.548	0.052	1.679	-0.304	0.401	-0.562	1.144	2.917	-0.129	1.332	1.300	-0.478	-10.190	-1.299	-1.017	-8.796	-0.483	-0.596	-0.241	-0.355	0.126	
09-Jun-00	0.185	0.051	0.000	-3.807	-1.492	3.800	-0.919	0.805	-2.793	-0.485	-3.250	-1.712	-1.257	0.281	-1.142	0.000	-3.987	-14.916	-15.650	0.785	-2.275	-0.241	-2.034	4.137	
16-Jun-00	-0.410	0.000	-0.746	0.000	-1.407	0.462	-0.270	-0.275	-1.210	0.755	-3.179	-4.755	-0.825	1.227	-1.188	0.000	-3.441	26.267	-0.762	-0.951	0.465	-0.241	0.706	0.498	
23-Jun-00	-0.623	-1.622	-3.759	-4.201	1.021	-2.045	0.096	-0.278	-0.153	1.137	-2.437	-0.793	-0.519	-1.863	-14.396	4.282	-10.772	-0.101	0.997	-0.101	-1.630	-0.241	-1.389	1.930	
30-Jun-00	-1.361	-0.603	0.000	0.215	1.101	-1.155	0.109	0.563	1.203	-4.898	6.034	0.179	-0.918	0.661	-3.660	0.000	-3.652	13.095	0.608	1.433	0.448	-0.241	0.689	0.474	
07-Jul-00	1.015	0.000	0.000	0.000	1.181	-0.144	0.154	-0.680	0.245	-0.506	1.020	0.773	-15.884	0.415	1.702	0.000	1.508	-1.074	0.102	2.258	-0.396	-0.241	-0.155	0.024	
14-Jul-00	-0.750	-4.469	-0.781	-0.306	-0.442	-0.126	0.364	-0.312	0.697	-1.353	-6.379	0.997	-8.683	0.826	5.338	0.000	2.340	-0.256	1.875	3.322	-0.405	-0.241	-0.164	0.027	
21-Jul-00	0.000	-0.648	-2.504	-1.800	-0.107	-2.423	0.843	-0.009	-0.554	0.000	1.663	5.291	14.378	4.542	-0.318	9.045	1.158	-2.624	-2.300	3.039	1.334	-0.241	1.575	2.479	
28-Jul-00	-0.540	0.000	0.000	1.761	0.000	0.295	0.347	0.264	0.009	0.221	-0.022	-6.768	0.480	9.826	4.443	1.174	0.000	0.418	-0.309	2.500	-0.812	0.664	-0.241	0.905	0.820
04-Aug-00	0.421	0.000	0.000	-1.077	0.245	-10.391	-0.494	0.020	-1.992	-0.925	-4.127	0.387	-0.684	0.063	-0.498	0.000	0.636	0.000	-3.312	-1.448	-1.159	-0.241	-0.918	0.842	
11-Aug-00	-0.243	-4.895	0.000	0.770	-2.806	-0.082	0.006	-0.029	-3.746	0.452	-0.969	1.231	3.576	0.031	0.050	-6.491	-0.953	-3.707	0.424	2.404	-0.749	-0.241	-0.508	0.258	
18-Aug-00	-7.207	-5.882	0.000	-0.632	1.441	3.303	-0.188	1.494	3.928	0.000	0.400	2.099	-2.127	-0.750	5.164	-2.450	0.085	0.000	0.844	3.787	0.165	-0.241	0.407	0.165	
25-Aug-00	5.839	-7.503	0.000	-0.295	1.211	3.884	0.081	4.675	0.862	-2.964	-2.064	0.602	-0.094	0.787	-0.158	0.000	6.363	-5.682	-3.260	-0.171	0.106	-0.241	0.347	0.120	
01-Sep-00	4.924	0.000	0.000	0.000	2.587	5.966	-4.246	0.619	0.902	-7.205	-5.418	0.536	-0.111	0.156	0.333	-4.651	7.235	-2.528	-3.303	1.338	-0.143	-0.241	0.098	0.010	
08-Sep-00	-2.432	0.000	0.000	0.162	0.041	2.603	4.217	-0.291	0.464	0.000	9.191	1.293	0.121	-0.998	1.439	0.000	-0.987	0.163	-0.257	-1.656	0.654	-0.241	0.895	0.801	
15-Sep-00	7.788	5.342	-3.571	2.907	0.435	5.041	-0.412	-0.471	-0.300	-0.768	3.027	1.408	0.372	1.008	2.479	0.000	2.257	5.005	-2.387	-2.713	1.322	-0.241	1.563	2.444	
22-Sep-00	0.625	3.185	2.058	-7.824	1.284	1.201	-1.434	0.184	0.997	-15.758	0.163	1.085	2.968	0.561	9.020	2.439	0.259	4.470	-0.983	-0.538	1.594	-0.908	-0.241	-0.667	0.444
29-Sep-00	-0.149	1.016	-3.968	-0.695	0.600	-0.887	-6.924	-2.134	0.539	-0.312	0.104	-0.096	-3.398	-0.589	-0.098	-1.762	0.526	0.102	-1.844	0.846	0.004	-0.241	0.245	0.060	
06-Oct-00	1.996	7.754	-7.265	0.470	-0.124	1.127	-0.264	-4.292	1.130	0.000	5.602	0.012	-7.756	0.624	-2.179	4.023	-0.050	0.304	-1.844	0.846	0.004	-0.241	1.391	1.936	
13-Oct-00	1.025	0.000	0.000	5.664	2.790	1.479	-1.181	2.830	1.433	6.667	2.060	-0.595	0.211	1.519	0.228	0.186	1.698	0.767	-1.992	-1.785	1.150	-0.241	1.716	2.943	
20-Oct-00	6.884	8.203	4.477	0.000	2.692	1.913	4.187	-0.429	1.824	-0.014	0.931	0.233	-0.182	1.802	1.068	0.000	-0.385	0.083	-4.881	1.083	1.475	-0.241	1.716	2.943	
27-Oct-00	2.384	15.704	4.011	0.000	0.936	0.087	-0.571	1.351	3.059	-0.105	3.931	-0.228	0.008	-0.270	0.409	0.000	0.091	-0.685	-24.646	-0.118	0.267	-0.241	0.508	0.259	
03-Nov-00	-0.673	3.748	-12.474	0.000	2.699	-0.133	2.660	0.337	1.717	0.119	-4.316	0.528	-3.110	1.384	-1.039	0.000	0.979	0.068	20.927	0.893	0.716	-0.241	0.957	0.915	
10-Nov-00	3.056	0.030	-1.324	0.000	3.905	0.132	-1.162	-0.481	0.990	-1.174	4.843	0.062	-0.085	-1.306	-0.340	2.326	3.024	0.775	12.412	0.301	1.299	-0.241	1.540	2.372	
17-Nov-00	-1.531	0.000	4.206	0.735	-1.359	-4.037	0.532	0.096	-10.144	-4.909	-0.328	-4.571	-5.017	-0.301	1.181	0.000	-0.636	-0.253	2.350	0.582	-1.170	-0.241	-0.929	0.863	
24-Nov-00	6.055	-1.099	2.070	1.402	0.001	-1.126	-1.854	0.120	-2.665	-2															

WEEKEND	BBOND	GWK	KAKUZI	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	Year 1996			
																					AVERAGE	Mean Return (X)	(X - X)	(X - X) ²
05-Jan-01	0.000	0.000	0.000	0.382	2.636	1.371	-1.040	-0.371	21.854	0.000	23.319	19.373	3.873	-0.413	4.798	0.000	0.740	0.000	-11.401	0.000	3.256	-0.379	3.636	13.217
12-Jan-01	0.247	-3.093	0.000	-1.567	-2.302	-1.308	-0.475	0.748	0.358	0.000	4.243	6.733	11.546	1.007	6.612	0.000	1.476	-0.016	2.997	-5.537	1.083	-0.379	1.463	2.140
19-Jan-01	0.123	0.000	-58.205	-4.748	0.689	0.156	-1.720	0.716	5.899	2.922	-21.610	-2.550	3.742	-0.616	1.504	0.000	1.988	-0.448	2.173	-3.928	-3.695	-0.379	-3.316	10.996
26-Jan-01	1.424	2.660	0.000	0.000	2.282	1.861	1.299	1.226	-4.397	-0.757	-0.751	-3.626	-2.032	1.063	-0.733	0.529	-3.433	-1.034	-1.616	-1.201	-0.362	-0.379	0.018	0.000
02-Feb-01	0.040	1.036	0.000	0.030	5.253	2.742	2.560	0.504	-5.866	-2.256	1.203	-5.750	-0.599	0.496	-0.508	-1.053	1.169	-8.626	-0.015	-0.570	-0.510	-0.379	-0.131	0.017
09-Feb-01	-0.899	0.000	126.621	0.730	0.021	-2.054	-0.014	-1.288	1.513	-6.025	1.650	6.806	1.481	0.291	0.433	-1.064	1.545	-4.818	1.861	-0.045	6.337	-0.379	6.717	45.115
16-Feb-01	-10.341	-1.521	5.269	9.032	-0.200	-0.016	1.313	1.596	1.736	-1.029	-0.977	3.089	-11.104	0.753	0.092	-0.344	0.944	-3.807	2.327	-10.098	-0.664	-0.379	-0.285	0.081
23-Feb-01	13.227	1.903	0.000	1.964	-3.224	0.694	0.099	0.994	2.298	0.024	1.317	-1.233	7.482	-1.553	-4.308	0.000	0.183	-1.306	29.470	0.205	2.412	-0.379	2.791	7.791
02-Mar-01	3.974	0.159	-1.964	-7.320	0.440	-0.357	0.557	0.374	-0.105	1.816	-2.088	4.005	-4.226	-12.212	1.302	0.000	0.172	-0.166	-5.985	0.000	-1.054	-0.379	-1.675	0.455
09-Mar-01	0.734	7.143	-2.264	6.325	0.101	-0.282	-0.378	0.067	3.722	2.127	19.233	12.027	-0.208	3.195	-0.111	-9.301	1.809	-14.286	-0.219	-10.218	-1.020	-0.379	-0.640	0.410
16-Mar-01	-0.814	-1.905	0.000	-0.524	-0.755	-12.629	-0.546	2.414	3.588	-3.852	11.532	-3.300	3.130	-4.708	-3.035	-0.071	0.027	-1.361	-3.272	-4.310	-1.620	-0.379	-1.190	1.416
23-Mar-01	-0.338	0.026	0.000	-6.673	-5.015	-2.532	-1.018	0.118	-4.835	0.009	-1.172	1.653	-8.817	-5.212	-1.835	0.000	0.442	0.132	-4.568	8.246	-1.569	-0.379	-1.190	1.416
30-Mar-01	-2.307	-0.026	-12.456	9.693	-2.022	0.725	-2.497	-0.033	-1.363	0.376	-9.840	0.840	-3.892	-0.036	-2.187	-0.952	-0.867	0.492	-14.249	2.515	-1.904	-0.379	-1.525	2.325
06-Apr-01	3.185	-2.913	0.000	-8.077	0.939	-1.813	-7.314	0.067	2.751	-0.383	3.864	-19.271	-5.206	0.000	-0.939	0.000	1.362	-0.762	0.400	0.656	-1.673	-0.379	-1.293	1.672
13-Apr-01	-5.780	0.000	-12.376	-2.804	-2.070	-0.045	-5.582	-0.096	-0.295	2.084	0.250	7.929	0.662	0.000	4.747	0.962	0.623	-6.335	-0.405	2.608	-0.795	-0.379	-0.416	0.173
20-Apr-01	-0.264	0.000	-0.762	0.000	0.013	2.675	0.122	0.019	0.424	-2.042	0.093	0.852	-2.702	0.000	-1.325	-4.762	-0.721	0.099	-0.420	2.150	-0.328	-0.379	0.052	0.003
27-Apr-01	-0.395	0.000	0.000	-3.487	-0.097	1.541	-5.802	0.048	-0.425	0.000	6.076	0.088	-0.384	-3.571	-5.888	0.000	0.508	0.058	-0.092	-2.611	-0.722	-0.379	-0.342	0.117
04-May-01	-1.494	0.000	0.000	-3.285	-2.207	-3.122	2.088	0.076	0.825	0.000	-1.040	-0.036	-3.017	-3.383	2.830	0.000	-0.038	-0.606	-3.118	1.423	-0.705	-0.379	-0.326	0.106
11-May-01	3.231	0.000	0.000	0.250	-2.051	-0.381	-2.372	-0.103	-9.477	0.000	-0.397	2.064	-0.183	7.333	-3.378	0.000	-1.802	-6.145	-9.871	5.011	-0.914	-0.379	-0.534	0.295
18-May-01	-1.010	2.000	-2.969	-0.249	-0.173	1.656	-2.061	0.286	-2.232	-0.399	4.455	1.484	0.010	0.002	-1.934	0.000	1.030	-0.106	-12.425	-2.485	-0.756	-0.379	-0.376	0.142
25-May-01	0.000	-1.837	3.060	-1.614	-6.953	1.529	-6.321	-0.426	0.711	-7.323	11.039	-0.279	-0.234	0.000	-0.033	-12.881	0.265	1.339	-7.452	-2.023	-1.472	-0.379	-1.092	1.193
01-Jun-01	-1.531	0.000	2.216	-0.245	5.852	0.870	-4.537	0.121	-0.146	-2.500	-2.500	0.133	-5.519	0.000	-0.558	0.000	-2.213	-0.463	-2.861	-0.775	-0.379	-0.395	0.156	
08-Jun-01	2.447	5.867	0.000	0.757	-0.378	1.899	-8.293	0.212	1.961	0.000	-4.933	-3.009	-1.010	0.000	-1.077	-11.061	-3.966	0.648	0.439	-3.899	-1.170	-0.379	-0.790	0.625
15-Jun-01	1.152	-2.869	-4.328	-8.671	-0.221	8.430	-3.558	0.360	7.965	-5.804	1.812	1.753	0.581	0.000	-0.638	-2.677	-2.576	1.462	-2.802	1.213	-6.179	-0.379	-0.130	0.017
22-Jun-01	-0.689	1.012	2.259	3.343	1.239	-0.723	-3.376	-0.208	-1.370	-0.190	-5.811	2.651	3.871	-0.638	-2.677	-2.576	1.462	-2.802	1.213	-6.179	-0.379	-0.130	0.017	
29-Jun-01	1.226	0.835	0.000	-3.571	-0.513	-0.983	2.526	-0.703	2.957	1.818	2.832	4.099	2.946	2.918	-1.979	1.898	-0.592	0.073	1.121	0.691	0.880	-0.379	2.110	4.454
06-Jul-01	1.101	0.000	0.000	-0.855	3.845	-2.451	8.855	-3.322	7.371	0.504	3.103	2.697	-0.087	-9.968	1.242	10.714	2.841	2.809	0.953	5.269	1.731	-0.379	1.002	1.004
13-Jul-01	0.000	0.481	0.000	0.000	0.046	0.180	8.028	1.380	-1.077	-2.369	-2.178	-2.460	0.256	8.609	1.841	0.000	0.089	0.004	-0.316	-0.058	0.623	-0.379	1.002	1.004
20-Jul-01	1.405	-0.353	0.000	0.942	0.093	1.825	0.572	2.318	-4.893	0.093	-4.251	-1.772	1.167	-2.411	-1.831	0.000	0.355	-0.015	-6.324	1.703	-0.569	-0.379	-0.189	0.036
27-Jul-01	-1.542	0.947	-2.500	-1.230	-0.095	-0.867	-0.191	-1.070	0.571	0.000	1.246	0.158	0.297	-1.183	3.665	0.000	0.145	0.023	2.691	1.769	0.142	-0.379	0.521	0.272
03-Aug-01	1.457	-4.712	-6.410	-0.709	-0.039	1.085	-2.505	-1.832	0.731	0.328	-1.132	1.542	-2.117	-0.247	-0.197	0.660	1.654	-0.413	-1.751	0.236	-0.839	-0.379	-0.460	0.211
10-Aug-01	-2.869	0.990	-2.055	0.000	-1.348	-8.011	0.798	0.134	0.697	1.329	18.031	-0.373	0.029	-2.433	-10.911	0.000	-0.021	-0.106	0.000	-5.295	-0.469	-0.379	-0.089	0.008
17-Aug-01	0.006	-0.980	-2.098	-6.263	-0.875	-1.723	0.300	-0.033	1.301	-1.482	-4.307	1.542	-2.117	-0.247	-0.197	0.660	1.654	-0.413	-1.751	0.236	-0.839	-0.379	-0.460	0.211
24-Aug-01	-0.229	0.990	0.000	0.643	-0.070	1.046	-2.310	-0.684	-2.595	-0.045	-7.449	-1.645	0.307	-6.509	-0.152	-1.639	-0.830	-5.731	-8.793	1.128	-1.728	-0.379	-1.349	1.820
31-Aug-01	-1.984	-1.961	0.000	0.000	-7.168	0.268	-0.143	-2.300	-0.953	2.273	-5.489	-8.714	-3.302	-1.939	-5.446	0.000	-1.664	6.795	-2.827	-5.513	-2.003	-0.379	-1.624	2.637
07-Sep-01	0.000	-5.000	-2.723	0.000	-1.111	-0.196	0.602	-0.164	-2.964	-2.222	-0.422	-5.676	-7.471	0.000	1.034	1.667	-1.365	1.418	-5.968	-4.765	-1.766	-0.379	-1.387	1.923
14-Sep-01	-3.882	0.000	0.000	0.000	-0.992	-0.555	-0.444	-1.883	-4.748	0.000	-0.079	-0.752	0.556	-5.297	-0.698	-1.639	2.651	6.088	-0.521	0.000	-0.610	-0.379	-0.230	0.053
21-Sep-01	-2.647	0.000	0.000	-10.000	-3.152	-0.698	-0.172	-4.547	-2.296	0.000	-2.964	-4.064	-0.077	-1.317	0.000	1.028	-3.608	-10.993	-11.367	-2.878	-0.379	-2.498	6.240	
28-Sep-01	0.534	0.000	0.000	-11.585	-4.327	-0.018	-9.547	-2.215	-1.726	-3.564	-6.431	1.639	-12.768	0.000	-3.322	-2.174	-0.152	-11.832	1.930	-4.721	-3.514	-0.379	-3.135	9.825
05-Oct-01	-3.955	0.000	0.000	0.000	-1.253	-4.112	-3.160	-0.418	0.044	0.000	-0.449	10.349	-0.948	-1.340	3.146	2.222	0.129	-3.372	12.314	-9.490	-0.015	-0.379	0.365	0.133
12-Oct-01	-0.975	0.000	0.000	0.000	-1.645	-16.741	-4.733	-2.937	0.232	-10.941	0.576	0.056	-7.764	-5.112	2.240	0.000	-0.204	5.868	11.720	-0.651	-1.551	-0.379	-1.171	1.372
19-Oct-01	0.571	-3.158	0.000	-3.270	5.569	16.541	3.556	4.903	4.758	-12.638	1.005	0.643	4.237	0.000	2.461	0.000	0.183	0.758	2.853	-1.547	1.371	-0.379	1.751	3.066
26-Oct-01	0.568	0.000	6.470	-0.742	7.888	6.714	3.934	2.964	4.326	2.480	8.500	-0.046	11.408	-3.435	4.343	-0.512	0.415	3.843	2.526	-0.025	2.841	-0.379	3.221	10.372
02-Nov-01	1.867	1.018	2.069	-0.498	6.742	-2.915	9.137	4.186	1.199	6.416	19.530	0.668	3.613	3.428	-1.176	-1.192	2.688	-7.186	0.155	9.972	2.984	-0.379	3.364	11.314
09-Nov-01	0.568	2.221	0.000	-0.001	-17.602	-8.358	6.190	0.508	-4.199	0.060	-2.922	-3.461	13.129	0.264	-0.384	-0.242	-0.947	-17.295	-19.544	10.366	-0.353	-0.379	0.026	0.001
16-Nov-01	0.370	0.000	0.000	0.501	0.378	8.470	-1.689	0.815	-2.064	-0.009	-7.643	-1.873	2.653	-4.523	-1.103	0.000	-3.157	0.084	-17.608	1.052	-1.267	-0.379	-0.888	0.788
23-Nov-01	0.000	0.000	0.000	-10.413	0.154	2.434	-1.943	1.865	2.610	0.000	-10.881	3.268	-4.819	-0.998	0									

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

Year 1996

Mean Return

WEEKEND	KAKUZII	EABL	GWK	TOTAL	BBOND	AVERAGE	(X)	(X - X)	(X - X)^2
05-Apr-96	-4.670	6.950	-8.564	-0.470	-0.600	-1.471	0.153	-1.624	2.637
12-Apr-96	-1.176	-0.542	-2.439	-1.988	2.444	-0.740	0.153	-0.893	0.798
19-Apr-96	2.976	-6.379	-1.000	-0.887	0.029	-1.052	0.153	-1.205	1.453
26-Apr-96	0.000	0.346	0.000	0.810	1.097	0.451	0.153	0.298	0.089
03-May-96	3.683	0.647	0.000	6.336	0.577	2.249	0.153	2.096	4.392
10-May-96	6.380	1.979	11.930	1.296	-0.040	4.309	0.153	4.156	17.271
17-May-96	-0.427	0.125	1.073	7.814	0.091	1.735	0.153	1.582	2.503
24-May-96	1.930	-0.265	0.000	-1.695	-0.165	-0.039	0.153	-0.192	0.037
31-May-96	0.461	1.262	3.691	-2.800	-1.097	0.303	0.153	0.150	0.023
07-Jun-96	2.797	1.964	0.000	-3.956	1.587	0.478	0.153	0.325	0.106
14-Jun-96	0.448	9.479	0.000	-5.857	0.232	0.861	0.153	0.708	0.501
21-Jun-96	2.170	-0.882	9.097	1.168	-0.062	2.298	0.153	2.145	4.602
28-Jun-96	-1.794	-0.559	2.606	0.782	0.367	0.280	0.153	0.127	0.016
05-Jul-96	-10.624	2.450	-2.482	-1.434	0.439	-2.330	0.153	-2.483	6.167
12-Jul-96	0.000	-2.660	2.545	-0.794	0.286	-0.125	0.153	-0.278	0.077
19-Jul-96	-0.088	4.860	0.299	-1.194	0.006	0.777	0.153	0.624	0.389
26-Jul-96	0.000	-1.991	2.003	-2.130	0.028	-0.418	0.153	-0.571	0.326

WEEK END	SASINI	KAKUZII	TOTAL	GWK	BBOND	AVERAGE	(X)	(X - X)	(X - X)^2
02-Aug-96	-11.952	0.894	-2.500	-5.995	0.134	-3.884	0.153	-4.037	16.297
09-Aug-96	4.786	0.028	-0.158	2.830	-0.134	1.471	0.153	1.318	1.736
16-Aug-96	-0.369	-0.371	-3.659	1.529	-3.179	-1.210	0.153	-1.363	1.857
23-Aug-96	-2.279	2.218	-1.051	0.235	1.794	0.183	0.153	0.030	0.001
30-Aug-96	1.395	0.000	-0.331	0.952	-0.062	0.391	0.153	0.238	0.056
6-Sep-96	-1.462	-5.946	-3.413	0.695	-0.017	-2.029	0.153	-2.182	4.759
13-Sep-96	-0.277	9.195	-2.332	0.781	0.403	1.554	0.153	1.401	1.963
20-Sep-96	2.698	1.018	1.620	-0.806	0.011	0.908	0.153	0.755	0.570
27-Sep-96	-0.017	-0.366	-2.229	0.783	-0.006	-0.367	0.153	-0.520	0.270
4-Oct-96	-3.969	-0.643	0.538	0.000	0.621	-0.691	0.153	-0.844	0.712
11-Oct-96	3.920	0.526	-1.119	3.909	-0.606	1.326	0.153	1.173	1.376
18-Oct-96	2.001	0.000	-0.645	0.547	-0.034	0.374	0.153	0.221	0.049
25-Oct-96	1.730	0.524	0.026	0.000	0.023	0.460	0.153	0.307	0.094
1-Nov-96	-1.569	0.416	-0.640	0.000	-3.955	-1.150	0.153	-1.303	1.697
8-Nov-96	1.986	0.891	-1.332	0.000	0.000	0.309	0.153	0.156	0.024
15-Nov-96	3.933	-0.591	-8.928	-0.563	0.000	-1.230	0.153	-1.383	1.912
22-Nov-96	1.932	0.591	0.741	3.397	3.941	2.120	0.153	1.967	3.871
29-Nov-96	2.282	0.047	0.325	-1.997	-0.481	0.035	0.153	-0.118	0.014
6-Dec-96	2.510	0.396	0.792	-0.046	0.717	0.874	0.153	0.721	0.519
13-Dec-96	1.706	1.208	1.758	-0.709	0.000	0.793	0.153	0.640	0.409
20-Dec-96	-1.058	-1.381	0.734	0.714	-5.144	-1.227	0.153	-1.380	1.904
27-Dec-96	-2.673	0.000	0.411	-0.709	0.000	-0.594	0.153	-0.747	0.558

$$\text{Std deviation} = \left[\frac{82.035}{39 - 1} \right]^{0.5} = 1.469$$

Average Mean Return for the Year 1996: 0.153

Average Mean Return for the Year 1996

WEEKEND	KAKUZII	EABL	GWK	TOTAL	BBOND	AVERAGE	(X)	(X - X)	(X - X)^2
02-Aug-96	-11.952	0.894	-2.500	-5.995	0.134	-3.884	0.153	-4.037	16.297
09-Aug-96	4.786	0.028	-0.158	2.830	-0.134	1.471	0.153	1.318	1.736
16-Aug-96	-0.369	-0.371	-3.659	1.529	-3.179	-1.210	0.153	-1.363	1.857
23-Aug-96	-2.279	2.218	-1.051	0.235	1.794	0.183	0.153	0.030	0.001
30-Aug-96	1.395	0.000	-0.331	0.952	-0.062	0.391	0.153	0.238	0.056
6-Sep-96	-1.462	-5.946	-3.413	0.695	-0.017	-2.029	0.153	-2.182	4.759
13-Sep-96	-0.277	9.195	-2.332	0.781	0.403	1.554	0.153	1.401	1.963
20-Sep-96	2.698	1.018	1.620	-0.806	0.011	0.908	0.153	0.755	0.570
27-Sep-96	-0.017	-0.366	-2.229	0.783	-0.006	-0.367	0.153	-0.520	0.270
4-Oct-96	-3.969	-0.643	0.538	0.000	0.621	-0.691	0.153	-0.844	0.712
11-Oct-96	3.920	0.526	-1.119	3.909	-0.606	1.326	0.153	1.173	1.376
18-Oct-96	2.001	0.000	-0.645	0.547	-0.034	0.374	0.153	0.221	0.049
25-Oct-96	1.730	0.524	0.026	0.000	0.023	0.460	0.153	0.307	0.094
1-Nov-96	-1.569	0.416	-0.640	0.000	-3.955	-1.150	0.153	-1.303	1.697
8-Nov-96	1.986	0.891	-1.332	0.000	0.000	0.309	0.153	0.156	0.024
15-Nov-96	3.933	-0.591	-8.928	-0.563	0.000	-1.230	0.153	-1.383	1.912
22-Nov-96	1.932	0.591	0.741	3.397	3.941	2.120	0.153	1.967	3.871
29-Nov-96	2.282	0.047	0.325	-1.997	-0.481	0.035	0.153	-0.118	0.014
6-Dec-96	2.510	0.396	0.792	-0.046	0.717	0.874	0.153	0.721	0.519
13-Dec-96	1.706	1.208	1.758	-0.709	0.000	0.793	0.153	0.640	0.409
20-Dec-96	-1.058	-1.381	0.734	0.714	-5.144	-1.227	0.153	-1.380	1.904
27-Dec-96	-2.673	0.000	0.411	-0.709	0.000	-0.594	0.153	-0.747	0.558

$$\text{Std deviation} = \left[\frac{82.035}{39 - 1} \right]^{0.5} = 1.469$$

Average Mean Return for the Year 1996

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

Year 1997

Mean Return

WEEKEND	SASINI	KAKUZI	TOTAL	GWK	BBOND	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
3-Jan-97	9.852	0.000	2.114	0.264	1.024	2.651	0.143	2.508	6.288
10-Jan-97	-0.971	0.000	2.115	0.599	-7.754	-1.202	0.143	-1.345	1.809
17-Jan-97	10.536	0.513	35.000	4.100	-4.733	9.083	0.143	8.940	79.926
24-Jan-97	5.926	2.020	7.050	0.000	-0.664	2.867	0.143	2.724	7.418
31-Jan-97	-12.751	-0.494	-5.469	-0.226	0.607	-3.667	0.143	-3.810	14.514
7-Feb-97	10.829	0.453	-9.767	0.227	0.631	0.474	0.143	0.331	0.110
14-Feb-97	0.512	0.063	-4.994	0.850	-0.020	-0.718	0.143	-0.861	0.741
21-Feb-97	0.000	0.967	-1.942	0.120	-0.060	-0.183	0.143	-0.326	0.106
28-Feb-97	2.116	0.561	-1.944	0.000	0.567	0.260	0.143	0.117	0.014
7-Mar-97	-0.050	1.244	-2.866	-0.524	0.000	-0.439	0.143	-0.582	0.339
14-Mar-97	7.062	-2.154	-17.596	-0.460	-4.863	-3.602	0.143	-3.745	14.028
21-Mar-97	-5.087	0.394	0.272	-0.293	-4.686	-1.880	0.143	-2.023	4.093
28-Mar-97	-0.227	0.000	3.528	0.000	-4.068	-0.153	0.143	-0.296	0.088
WEEKEND	EABL	SASINI	BBOND	GWK	TOTAL				
4-Apr-97	-4.008	2.284	-6.955	-2.962	1.947	-1.939	0.143	-2.082	4.334
11-Apr-97	1.784	-1.494	-1.402	-1.209	-1.271	-0.718	0.143	-0.861	0.742
18-Apr-97	-2.599	3.936	2.502	-0.290	-0.650	0.580	0.143	0.437	0.191
25-Apr-97	-0.098	-3.052	-0.170	-0.052	0.357	-0.603	0.143	-0.746	0.557
2-May-97	2.790	-0.669	1.617	0.714	1.234	1.137	0.143	0.994	0.989
9-May-97	-0.016	4.850	-0.680	-0.709	1.020	0.893	0.143	0.750	0.563
16-May-97	-2.162	-4.385	-0.990	0.000	1.189	-1.270	0.143	-1.413	1.996
23-May-97	-0.373	0.321	0.553	-1.163	6.097	1.087	0.143	0.944	0.891
30-May-97	3.113	0.155	0.614	-0.269	0.580	0.839	0.143	0.696	0.484
6-Jun-97	-2.815	2.283	-3.504	1.449	-0.339	-0.585	0.143	-0.728	0.530
13-Jun-97	1.175	0.694	4.089	0.000	-6.188	-0.046	0.143	-0.189	0.036
20-Jun-97	-1.989	3.907	-2.272	0.110	-3.429	-0.735	0.143	-0.878	0.770
27-Jun-97	2.806	0.210	-3.930	0.940	1.064	0.218	0.143	0.075	0.006
WEEK END	KAKUZI	GWK	BBOND	SASINI	TOTAL				
4-Jul-97	-5.602	0.810	2.096	3.734	-0.320	0.144	0.143	0.001	0.000
11-Jul-97	5.000	-1.134	2.145	-6.148	0.462	0.065	0.143	-0.078	0.006
18-Jul-97	1.317	1.388	-2.329	2.390	0.911	0.735	0.143	0.592	0.351
25-Jul-97	-0.360	0.380	-3.338	0.626	-1.098	-0.758	0.143	-0.901	0.811
1-Aug-97	0.000	0.605	6.457	-0.538	-0.972	1.110	0.143	0.967	0.936
8-Aug-97	2.596	-1.133	-0.927	-1.761	-5.210	-1.287	0.143	-1.430	2.044
15-Aug-97	5.745	2.989	-1.231	1.194	1.429	2.025	0.143	1.882	3.543
22-Aug-97	7.439	4.082	4.835	6.603	-1.361	4.320	0.143	4.177	17.445
29-Aug-97	3.334	0.000	-3.162	4.819	-2.094	0.579	0.143	0.436	0.190
5-Sep-97	4.774	15.583	-2.578	3.041	-1.072	3.949	0.143	3.806	14.488
12-Sep-97	20.871	22.055	0.806	5.848	2.628	10.441	0.143	10.298	106.057
19-Sep-97	1.791	8.923	0.383	0.680	-2.461	1.863	0.143	1.720	2.959
26-Sep-97	-5.969	6.345	-0.349	-1.932	-1.459	-0.673	0.143	-0.816	0.666
3-Oct-97	-3.880	1.005	0.192	1.827	-0.788	-0.329	0.143	-0.472	0.223
10-Oct-97	0.000	0.459	0.765	-4.785	-3.195	-1.351	0.143	-1.494	2.233
17-Oct-97	-2.524	-5.396	0.668	-0.085	-0.854	-1.638	0.143	-1.781	3.172
24-Oct-97	0.000	5.000	-2.352	-1.876	-2.178	-0.281	0.143	-0.424	0.180
31-Oct-97	0.000	-6.667	-0.831	0.066	-4.109	-2.308	0.143	-2.451	6.008
7-Nov-97	-4.138	0.000	1.481	-2.712	0.151	-1.044	0.143	-1.187	1.408
14-Nov-97	0.000	0.000	0.000	3.528	0.369	0.779	0.143	0.636	0.405
21-Nov-97	-30.358	0.000	0.325	-1.805	-1.199	-6.607	0.143	-6.750	45.566
28-Nov-97	-4.816	-31.369	-1.039	-3.529	-0.503	-8.251	0.143	-8.394	70.465
WEEK END	KAKUZI	BAMB	BBOND	SASINI	TOTAL				
5-Dec-97	2.019	14.946	-7.586	-1.101	1.467	1.949	0.143	1.806	3.261
12-Dec-97	-1.819	0.459	0.818	6.877	0.951	1.457	0.143	1.314	1.727
19-Dec-97	0.000	-2.800	-0.514	-0.038	0.251	-0.620	0.143	-0.763	0.582
26-Dec-97	4.020	0.000	0.000	0.000	0.000	0.804	0.143	0.661	0.437

$$\text{Std deviation} = \left[\frac{426.724}{52 - 1} \right]^{0.5} = 2.893$$

0.143

-0.013 426.724

Average Mean Return for the Year 1997

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

						Year 1998			
						Mean Return			
WEEKEND	GWK	BAMB	BBOND	SASINI	TOTAL	AVERAGE	(X)	(X - \bar{X})	(X - \bar{X}) ²
2-Jan-98	0.000	4.468	0.000	0.000	0.709	1.035	0.649	0.386	0.149
9-Jan-98	-0.233	4.080	12.018	-1.635	0.000	2.846	0.649	2.197	4.828
16-Jan-98	4.350	19.194	6.433	1.622	3.882	7.096	0.649	6.447	41.565
23-Jan-98	0.000	-0.839	-0.684	0.503	16.671	3.130	0.649	2.481	6.156
30-Jan-98	13.551	-4.758	-0.727	0.430	9.444	3.588	0.649	2.939	8.638
6-Feb-98	8.199	-3.939	-0.771	-2.412	-8.864	-1.557	0.649	-2.206	4.868
13-Feb-98	0.927	0.000	1.352	-2.299	-5.733	-1.151	0.649	-1.800	3.239
20-Feb-98	0.000	-0.100	-0.100	9.270	-1.484	1.517	0.649	0.868	0.754
27-Feb-98	9.350	-19.820	-5.334	23.091	1.798	1.817	0.649	1.168	1.364
6-Mar-98	0.247	12.297	0.841	-0.899	-0.268	2.444	0.649	1.795	3.221
13-Mar-98	3.523	7.393	-10.853	-13.974	-4.441	-3.670	0.649	-4.319	18.655
20-Mar-98	3.236	3.494	11.927	-4.097	-5.565	1.799	0.649	1.150	1.323
27-Mar-98	2.663	0.025	3.986	37.168	-3.366	8.095	0.649	7.446	55.446
3-Apr-98	1.850	-0.150	0.385	-1.515	-3.349	-0.556	0.649	-1.205	1.452
10-Apr-98	13.845	-13.020	-9.451	-10.991	-5.831	-5.089	0.649	-5.738	32.929
17-Apr-98	0.756	-7.887	0.863	-5.916	-3.635	-3.164	0.649	-3.813	14.537
24-Apr-98	0.513	-0.406	0.805	-2.420	0.447	-0.212	0.649	-0.861	0.742
1-May-98	-3.168	4.456	0.580	-4.140	-3.335	-1.121	0.649	-1.770	3.134
8-May-98	-4.960	-7.540	6.089	2.095	-2.614	-1.386	0.649	-2.035	4.141
15-May-98	6.312	1.917	0.666	-1.245	-1.729	1.184	0.649	0.535	0.286
22-May-98	0.264	4.909	1.174	0.416	-4.296	0.493	0.649	-0.156	0.024
29-May-98	-0.530	0.425	0.732	5.190	0.465	1.257	0.649	0.608	0.369
5-Jun-98	1.338	5.991	-0.642	1.686	-1.818	1.311	0.649	0.662	0.438
12-Jun-98	-2.157	-0.057	46.528	3.912	1.985	10.042	0.649	9.393	88.234
19-Jun-98	7.582	0.486	-20.932	-2.574	0.029	-3.082	0.649	-3.731	13.920
26-Jun-98	-4.983	-0.426	-8.953	-0.585	0.378	-2.914	0.649	-3.563	12.693
3-Jul-98	18.204	0.285	2.878	-1.867	0.582	4.017	0.649	3.368	11.341
10-Jul-98	1.268	-0.057	-1.294	-0.167	-1.223	-0.295	0.649	-0.944	0.891
17-Jul-98	0.944	-2.193	3.961	0.085	0.814	0.722	0.649	0.073	0.005
24-Jul-98	0.000	-0.990	-3.215	0.381	-0.509	-0.867	0.649	-1.516	2.297
31-Jul-98	0.000	-9.794	5.948	-0.494	0.907	-0.687	0.649	-1.336	1.784
7-Aug-98	-3.551	1.719	-2.709	2.382	-2.082	-0.848	0.649	-1.497	2.242
14-Aug-98	0.000	0.081	5.788	0.000	-0.107	1.153	0.649	0.504	0.254
21-Aug-98	5.354	-2.314	-1.462	-2.209	0.192	-0.088	0.649	-0.737	0.543
28-Aug-98	0.449	0.728	2.469	-2.528	2.904	0.804	0.649	0.155	0.024
4-Sep-98	1.373	-0.011	0.207	2.576	-1.863	0.457	0.649	-0.192	0.037
11-Sep-98	-1.133	-0.039	1.121	-1.289	1.141	-0.040	0.649	-0.689	0.474
18-Sep-98	1.069	-0.759	0.408	2.420	-4.213	-0.215	0.649	-0.864	0.747
25-Sep-98	1.382	-7.117	-0.672	-0.799	-1.268	-1.695	0.649	-2.344	5.493
2-Oct-98	-7.889	1.763	-0.189	3.583	-3.341	-1.215	0.649	-1.864	3.473
9-Oct-98	0.000	-0.075	-9.955	-1.232	-2.377	-2.728	0.649	-3.377	11.402
16-Oct-98	0.000	-4.283	-6.048	-2.631	1.436	-2.305	0.649	-2.954	8.728
23-Oct-98	-3.281	-1.370	4.962	0.107	-0.422	-0.001	0.649	-0.650	0.422
30-Oct-98	3.246	-1.273	8.394	-0.595	-4.357	1.083	0.649	0.434	0.188
6-Nov-98	0.000	-5.171	0.790	0.598	1.895	-0.378	0.649	-1.027	1.054
13-Nov-98	-2.005	8.947	0.357	-3.949	-4.886	-0.307	0.649	-0.956	0.914
20-Nov-98	-0.706	1.283	-0.198	-2.829	0.485	-0.393	0.649	-1.042	1.086
27-Nov-98	-2.332	0.966	1.911	0.543	0.636	0.345	0.649	-0.304	0.093
4-Dec-98	-0.760	-0.886	1.365	-8.326	-2.754	-2.272	0.649	-2.921	8.534
11-Dec-98	-0.383	0.318	1.907	8.375	0.579	2.159	0.649	1.510	2.281
18-Dec-98	2.884	4.506	-0.515	0.110	9.171	3.231	0.649	2.582	6.667
25-Dec-98	31.988	9.462	7.990	0.000	2.328	10.354	0.649	9.705	94.179

Std deviation = $\sqrt{\frac{488.255}{52 - 1}}$
 = 3.094

Average Mean Return for the Year 1998

0.649

-0.003 488.255

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

WEEKEND						Year 1999			
	BAMB	EABL	NMG	SASINI	TOTAL	AVERAGE	Mean Return (\bar{X})	($X - \bar{X}$)	($X - \bar{X}$) ²
1-Jan-99	1.925	17.119	-1.037	-0.229	17.420	7.040	-0.236	7.276	52.937
8-Jan-99	0.000	0.000	1.457	0.000	9.236	2.139	-0.236	2.375	5.638
15-Jan-99	3.722	-12.159	3.473	5.218	0.477	0.146	-0.236	0.382	0.146
22-Jan-99	4.205	1.131	0.246	-0.482	11.720	3.364	-0.236	3.600	12.961
29-Jan-99	-7.222	4.487	-0.881	0.621	-1.067	-0.812	-0.236	-0.576	0.332
5-Feb-99	1.620	-7.247	-4.524	-4.849	-7.529	-4.506	-0.236	-4.270	18.232
12-Feb-99	0.305	2.021	0.020	-0.024	-4.949	-0.526	-0.236	-0.290	0.084
19-Feb-99	2.163	-0.715	0.791	-4.786	-7.099	-1.929	-0.236	-1.693	2.867
26-Feb-99	1.200	1.533	0.726	-2.957	-6.039	-1.107	-0.236	-0.871	0.759
5-Mar-99	BAMB	EABL	BBOND	SASINI	TOTAL				
12-Mar-99	-8.719	7.071	-0.148	-6.977	0.537	-1.647	-0.236	-1.411	1.992
19-Mar-99	0.332	-0.299	1.048	-1.268	24.879	4.938	-0.236	5.174	26.773
26-Mar-99	-0.826	1.582	0.182	1.093	-15.059	-2.605	-0.236	-2.369	5.614
26-Mar-99	0.000	8.731	0.000	-1.152	-7.221	0.072	-0.236	0.308	0.095
2-Apr-99	BAMB	EABL	BBOND	KAKUZI	TOTAL				
9-Apr-99	0.000	-1.920	-1.783	0.000	0.463	-0.648	-0.236	-0.412	0.170
16-Apr-99	0.000	-0.691	2.528	-15.837	8.801	-1.040	-0.236	-0.804	0.646
23-Apr-99	0.000	4.835	0.437	9.677	0.454	3.081	-0.236	3.317	11.000
30-Apr-99	0.000	-1.573	-0.311	-5.260	0.083	-1.412	-0.236	-1.176	1.384
7-May-99	-1.467	5.620	1.186	-4.383	0.614	0.314	-0.236	0.550	0.302
7-May-99	SASINI	EABL	BBOND	KAKUZI	TOTAL				
14-May-99	-1.792	0.808	0.720	-1.568	0.536	-0.259	-0.236	-0.023	0.001
21-May-99	-1.504	0.031	-0.578	0.000	2.357	0.061	-0.236	0.297	0.088
28-May-99	0.689	0.852	0.116	-2.218	-0.106	-0.133	-0.236	0.103	0.011
4-Jun-99	-10.106	-1.657	-0.308	-2.631	-3.929	-3.726	-0.236	-3.490	12.180
11-Jun-99	0.004	2.687	0.981	7.083	4.065	2.964	-0.236	3.200	10.240
18-Jun-99	2.386	-1.583	-0.163	-3.333	-1.984	-0.935	-0.236	-0.699	0.489
25-Jun-99	3.294	-0.269	0.102	3.773	2.608	1.902	-0.236	2.138	4.570
2-Jul-99	0.000	-0.238	-0.102	0.000	-0.442	-0.156	-0.236	0.080	0.006
2-Jul-99	BAMB	EABL	BBOND	GWK	TOTAL				
9-Jul-99	-0.989	0.534	-1.136	-0.338	0.069	-0.372	-0.236	-0.136	0.019
16-Jul-99	1.768	1.557	1.142	-0.755	0.631	0.868	-0.236	1.104	1.220
23-Jul-99	12.613	0.482	0.007	-1.353	3.143	2.978	-0.236	3.214	10.332
30-Jul-99	-3.555	0.951	0.000	0.000	1.033	-0.314	-0.236	-0.078	0.006
6-Aug-99	0.661	0.330	0.000	0.000	1.937	0.586	-0.236	0.822	0.675
6-Aug-99	BAMB	KAKUZI	BBOND	GWK	TOTAL				
13-Aug-99	4.594	-2.419	0.170	0.000	-0.469	0.375	-0.236	0.611	0.374
20-Aug-99	-1.288	0.000	0.340	0.000	0.543	-0.081	-0.236	0.155	0.024
27-Aug-99	0.368	0.000	-0.494	0.000	1.278	0.230	-0.236	0.466	0.218
3-Sep-99	-0.400	0.000	-24.541	0.000	-0.077	-5.004	-0.236	-4.768	22.730
3-Sep-99	BAMB	SASINI	BBOND	GWK	TOTAL				
10-Sep-99	-2.544	0.303	0.000	0.000	2.126	-0.023	-0.236	0.213	0.045
17-Sep-99	3.022	4.230	-14.639	-17.857	-0.011	-5.051	-0.236	-4.815	23.185
24-Sep-99	-0.100	0.248	6.526	0.000	-0.427	1.249	-0.236	1.485	2.207
1-Oct-99	-6.306	-2.265	-1.814	0.000	-3.398	-2.757	-0.236	-2.521	6.354
8-Oct-99	-5.413	-1.487	1.292	0.000	-3.441	-1.810	-0.236	-1.574	2.476
15-Oct-99	0.753	0.000	1.674	-1.860	-3.434	-0.573	-0.236	-0.337	0.114
22-Oct-99	0.299	2.137	0.000	1.252	-1.870	0.364	-0.236	0.600	0.359
29-Oct-99	-2.869	-2.974	0.970	0.000	1.710	-0.632	-0.236	-0.396	0.157
5-Nov-99	-0.269	-2.020	-0.971	-3.741	2.914	-0.817	-0.236	-0.581	0.338
12-Nov-99	1.038	0.000	0.000	0.000	-0.075	0.193	-0.236	0.429	0.184
19-Nov-99	-0.914	0.000	2.647	2.424	0.286	0.889	-0.236	1.125	1.265
26-Nov-99	-3.304	-8.317	-0.745	-2.944	0.003	-3.061	-0.236	-2.825	7.982
3-Dec-99	6.357	-3.516	-1.059	-3.978	0.097	-0.420	-0.236	-0.184	0.034
10-Dec-99	-2.727	-7.400	0.370	-8.324	0.020	-3.612	-0.236	-3.376	11.398
17-Dec-99	-0.154	-0.337	0.707	-3.387	0.497	-0.534	-0.236	-0.298	0.089
24-Dec-99	0.000	-0.165	-1.655	0.000	1.371	-0.090	-0.236	0.146	0.021
31-Dec-99	0.000	2.150	1.468	-0.922	-1.952	0.149	-0.236	0.385	0.148
	0.000	0.000	0.935	0.000	0.102	0.207	-0.236	0.443	0.197

$$\text{Std deviation} = \left[\frac{261.668}{52 - 1} \right]^{0.5} = 2.265$$

Average Mean Return for the Year 1999

-0.236 0.022 261.668



DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

WEEKEND	BAMB	SASINI	BBOND	GVK	TOTAL	Year 2000			
						AVERAGE	(X)	(X - X̄)	(X - X̄)^2
7-Jan-00	0.962	0.000	0.000	0.000	0.490	0.290	-0.134	0.424	0.180
14-Jan-00	-0.952	0.000	0.000	0.000	-0.078	-0.206	-0.134	-0.072	0.005
21-Jan-00	1.308	-8.620	-0.822	0.930	-0.445	-1.530	-0.134	-1.396	1.948
28-Jan-00	-0.873	8.048	0.173	1.075	1.895	2.064	-0.134	2.198	4.830
WEEK END	BAMB	SASINI	BBOND	KAKUZI	TOTAL				
4-Feb-00	0.651	0.000	0.000	3.484	0.111	0.845	-0.134	0.979	0.959
11-Feb-00	-0.875	-11.915	0.000	-0.154	-0.031	-2.595	-0.134	-2.461	6.057
18-Feb-00	0.729	-1.338	0.000	0.000	-2.381	-0.598	-0.134	-0.464	0.215
25-Feb-00	-0.953	-6.489	-6.115	0.000	1.565	-2.398	-0.134	-2.264	5.128
WEEK END	BAMB	SASINI	BBOND	DTK	TOTAL				
3-Mar-00	0.038	0.000	-17.554	0.133	7.059	-2.065	-0.134	-1.931	3.728
10-Mar-00	0.269	-2.778	0.000	7.475	18.322	4.658	-0.134	4.792	22.959
17-Mar-00	-0.230	0.024	22.286	-0.104	-14.507	1.494	-0.134	1.628	2.649
24-Mar-00	3.576	2.833	-4.510	-2.509	-8.056	-1.734	-0.134	-1.600	2.559
31-Mar-00	3.898	-2.728	-4.277	-0.987	1.202	-0.578	-0.134	-0.444	0.197
WEEK END	BAMB	SASINI	BBOND	DTK	KAKUZI				
7-Apr-00	-4.895	0.149	-7.802	-0.006	0.083	-2.494	-0.134	-2.360	5.570
14-Apr-00	1.315	-2.170	-4.677	-1.846	2.012	-1.073	-0.134	-0.939	0.882
21-Apr-00	-1.520	-14.689	-0.847	1.887	-1.399	-3.314	-0.134	-3.180	10.110
28-Apr-00	-2.108	7.142	-0.523	-0.231	-3.344	0.187	-0.134	0.321	0.103
5-May-00	1.923	0.000	0.000	-6.757	0.000	-0.967	-0.134	-0.833	0.693
12-May-00	5.547	5.230	-0.103	0.000	0.000	2.135	-0.134	2.269	5.148
19-May-00	0.322	5.412	-0.398	-18.654	-1.677	-3.007	-0.134	-2.873	8.254
26-May-00	0.000	3.541	0.503	2.756	0.000	1.360	-0.134	1.494	2.231
2-Jun-00	1.390	5.548	-3.128	1.144	0.000	0.991	-0.134	1.125	1.265
9-Jun-00	0.281	-3.807	0.185	-0.485	0.000	-0.765	-0.134	-0.631	0.398
16-Jun-00	1.227	0.000	-0.410	0.755	-0.746	0.165	-0.134	0.299	0.090
23-Jun-00	-0.519	-4.201	-0.623	1.137	-3.759	-1.593	-0.134	-1.459	2.129
30-Jun-00	0.661	0.215	-1.361	-4.898	0.000	-1.077	-0.134	-0.943	0.889
7-Jul-00	0.415	0.000	1.015	-0.506	0.000	0.185	-0.134	0.319	0.102
14-Jul-00	0.826	-0.306	-0.750	-1.353	-0.781	-0.473	-0.134	-0.339	0.115
21-Jul-00	4.542	-1.800	0.000	0.000	-2.504	0.048	-0.134	0.182	0.033
28-Jul-00	4.443	0.000	-0.540	-0.022	1.761	1.128	-0.134	1.262	1.594
4-Aug-00	0.063	-1.077	-1.448	-0.525	0.000	-0.677	-0.134	-0.543	0.295
11-Aug-00	0.031	0.770	2.404	0.452	0.000	0.732	-0.134	0.866	0.749
18-Aug-00	-0.750	-0.632	3.787	0.000	0.000	0.481	-0.134	0.615	0.378
25-Aug-00	0.787	-0.295	-0.171	-2.964	0.000	-0.528	-0.134	-0.394	0.156
WEEK END	BAMB	SASINI	TOTAL	BBOND	KAKUZI				
1-Sep-00	0.156	0.000	1.338	4.924	0.000	1.284	-0.134	1.418	2.010
8-Sep-00	-0.998	0.162	-1.656	-2.432	0.000	-0.985	-0.134	-0.851	0.724
15-Sep-00	1.008	2.907	-2.713	7.788	-3.571	1.084	-0.134	1.218	1.483
22-Sep-00	0.561	-7.824	0.281	0.625	2.058	-0.860	-0.134	-0.726	0.527
29-Sep-00	-0.589	-0.695	1.594	-0.149	-3.968	-0.762	-0.134	-0.628	0.394
6-Oct-00	0.624	0.470	0.846	1.966	-7.265	-0.672	-0.134	-0.538	0.289
13-Oct-00	1.519	5.664	-1.785	1.025	0.000	1.285	-0.134	1.419	2.013
20-Oct-00	1.802	0.000	1.083	6.854	4.477	2.849	-0.134	2.983	8.900
27-Oct-00	-0.270	0.030	-0.118	2.384	4.011	1.201	-0.134	1.335	1.783
3-Nov-00	1.384	0.000	0.893	-0.673	-12.474	-2.174	-0.134	-2.040	4.162
10-Nov-00	-1.306	0.000	0.301	3.056	-1.324	0.145	-0.134	0.279	0.078
17-Nov-00	-0.301	0.735	0.582	-1.531	4.206	0.738	-0.134	0.872	0.761
24-Nov-00	-0.452	1.402	-0.763	6.055	2.070	1.662	-0.134	1.796	3.227
WEEK END	BAMB	DTK	TOTAL	BBOND	KAKUZI				
1-Dec-00	-0.061	-0.858	-0.241	-0.237	1.184	-0.043	-0.134	0.091	0.008
8-Dec-00	0.485	0.997	-1.109	0.383	-1.382	-0.125	-0.134	0.009	0.000
15-Dec-00	1.056	-2.822	-0.707	0.000	0.000	-0.495	-0.134	-0.361	0.130
22-Dec-00	0.746	-1.626	-0.136	-0.340	0.000	-0.271	-0.134	-0.137	0.019
29-Dec-00	0.415	0.000	-0.602	0.600	0.000	0.082	-0.134	0.216	0.047

Average Mean Return for the Year 2000

-0.134

0.004 119.152

$$\text{Std deviation} = \left[\frac{119.152}{52 - 1} \right]^{0.5}$$

$$= 1.528$$

DESCRIPTIVE STATISTICS: MEAN RETURN AND RISK
 BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

BOTTOM 5 COMPANIES

WEEK END						Year 2001			
	BAMB	DTK	TOTAL	BBOND	KAKUZI	AVERAGE	(X)	(X - X̄)	(X - X̄) ²
5-Jan-01	-0.413	0.000	0.000	0.000	0.000	-0.083	-0.486	0.403	0.163
12-Jan-01	1.007	0.000	-5.537	0.247	0.000	-0.857	-0.486	-0.371	0.137
19-Jan-01	-0.616	2.922	-3.928	0.123	-58.205	-11.941	-0.486	-11.455	131.208
26-Jan-01	1.063	-0.757	-1.201	1.424	0.000	0.106	-0.486	0.592	0.350
2-Feb-01	0.496	-2.256	-0.570	0.040	0.000	-0.458	-0.486	0.028	0.001
9-Feb-01	0.291	-6.025	-0.045	-0.899	126.621	23.989	-0.486	24.475	599.004
16-Feb-01	0.753	-1.029	-10.098	-10.341	5.269	-3.089	-0.486	-2.603	6.777
23-Feb-01	-1.553	0.024	0.205	13.227	0.000	2.381	-0.486	2.867	8.217
WEEK END	BAMB	DTK	TOTAL	SASINI	KAKUZI				
2-Mar-01	-12.212	1.816	0.000	-7.320	-1.964	-3.936	-0.486	-3.450	11.902
9-Mar-01	3.195	2.127	-10.218	6.325	-2.264	-0.167	-0.486	0.319	0.102
16-Mar-01	-4.708	-3.852	-4.310	-0.524	0.000	-2.679	-0.486	-2.193	4.808
23-Mar-01	-5.212	0.009	8.246	-6.673	0.000	-0.726	-0.486	-0.240	0.058
30-Mar-01	-0.036	0.376	2.515	9.693	-12.456	0.019	-0.486	0.505	0.255
WEEK END	BAMB	BBOND	TOTAL	SASINI	GWK				
6-Apr-01	0.000	3.185	0.656	-8.077	-2.913	-1.430	-0.486	-0.944	0.890
13-Apr-01	0.000	-5.760	2.608	-2.804	0.000	-1.191	-0.486	-0.705	0.497
20-Apr-01	0.000	-0.264	2.150	0.000	0.000	0.377	-0.486	0.863	0.745
27-Apr-01	-3.571	-0.395	-2.611	-3.487	0.000	-2.013	-0.486	-1.527	2.332
4-May-01	-3.383	-1.494	1.423	-3.285	0.000	-1.348	-0.486	-0.862	0.743
11-May-01	7.333	3.231	5.011	0.250	0.000	3.165	-0.486	3.651	13.330
18-May-01	0.002	-1.010	-2.485	-0.249	2.000	-0.349	-0.486	0.137	0.019
25-May-01	0.000	0.000	-2.023	-1.614	-1.837	-1.095	-0.486	-0.609	0.371
1-Jun-01	0.000	-1.531	-2.861	-0.245	0.000	-0.927	-0.486	-0.441	0.195
8-Jun-01	0.000	2.447	-3.899	0.757	5.867	1.034	-0.486	1.520	2.312
15-Jun-01	0.000	1.152	-2.096	-8.671	-2.869	-2.497	-0.486	-2.011	4.044
22-Jun-01	-0.638	-0.689	-6.179	3.343	1.012	-0.630	-0.486	-0.144	0.021
29-Jun-01	2.918	1.226	0.691	-3.571	0.835	0.420	-0.486	0.906	0.820
WEEK END	BAMB	BBOND	TOTAL	BAT	UCHUMI				
6-Jul-01	-9.968	1.101	5.269	1.242	3.845	0.298	-0.486	0.784	0.614
13-Jul-01	8.609	0.000	-0.058	1.841	0.046	2.087	-0.486	2.573	6.623
20-Jul-01	-2.411	1.405	1.703	-1.831	0.093	-0.208	-0.486	0.278	0.077
27-Jul-01	-1.183	-1.542	1.769	3.665	-0.095	0.523	-0.486	1.009	1.017
WEEK END	BAMB	BBOND	TOTAL	NMG	UCHUMI				
3-Aug-01	3.704	1.457	-4.528	-2.505	-0.039	-0.382	-0.486	0.104	0.011
10-Aug-01	-2.433	-2.869	-5.295	0.798	-1.348	-2.229	-0.486	-1.743	3.040
17-Aug-01	-0.247	0.006	0.236	0.300	-0.875	-0.116	-0.486	0.370	0.137
24-Aug-01	-6.509	-0.229	1.128	-2.310	-0.070	-1.598	-0.486	-1.112	1.236
31-Aug-01	-1.939	-1.984	-5.513	-0.143	-7.168	-3.349	-0.486	-2.863	8.199
7-Sep-01	0.000	0.000	-4.765	0.602	-1.111	-1.055	-0.486	-0.569	0.323
14-Sep-01	-5.297	-3.882	0.000	-0.444	-0.992	-2.123	-0.486	-1.637	2.680
21-Sep-01	-0.677	-2.647	-11.367	-0.172	-3.152	-3.603	-0.486	-3.117	9.716
28-Sep-01	0.000	0.534	-4.721	-9.547	-4.327	-3.612	-0.486	-3.126	9.774
WEEK END	BAMB	BBOND	TOTAL	BAT	UCHUMI				
5-Oct-01	-1.340	-3.955	-9.490	3.146	-1.253	-2.578	-0.486	-2.092	4.378
12-Oct-01	-5.112	-0.675	-0.651	2.240	-1.645	-1.228	-0.486	-0.742	0.551
19-Oct-01	0.000	0.571	-1.547	2.461	5.569	1.411	-0.486	1.897	3.599
26-Oct-01	-3.435	0.568	-0.025	4.343	7.888	1.868	-0.486	2.354	5.541
WEEK END	BAMB	BBOND	TOTAL	NMG	UCHUMI				
2-Nov-01	3.428	1.867	9.972	9.137	6.742	6.229	-0.486	6.715	45.095
9-Nov-01	0.264	0.568	10.366	6.190	-17.602	-0.043	-0.486	0.443	0.196
16-Nov-01	-4.523	0.370	1.052	-1.689	0.378	-0.882	-0.486	-0.396	0.157
23-Nov-01	-4.916	0.000	-4.102	-1.943	0.154	-2.162	-0.486	-1.676	2.808
30-Nov-01	-0.111	-1.099	0.313	-2.130	-5.447	-1.695	-0.486	-1.209	1.461
WEEK END	BAMB	BBOND	TOTAL	SASINI	UCHUMI				
7-Dec-01	-10.414	0.000	-0.312	-1.667	-3.796	-3.238	-0.486	-2.752	7.571
14-Dec-01	-1.103	0.000	-0.935	-6.736	-3.573	-2.470	-0.486	-1.984	3.935
21-Dec-01	0.000	-3.974	-0.544	-0.306	1.189	-0.727	-0.486	-0.241	0.058

Average Mean Return for the Year 2001

-0.486

-0.021 908.096

$$\text{Std deviation} = \left[\frac{908.096}{52 - 1} \right]^{0.5}$$

$$= 4.220$$

Descriptive Statistics: Mean Return and Risk

Year	Number	Mean Return	Risk
1996	5	0.153	1.469
1997	5	0.143	2.893
1998	5	0.649	3.094
1999	5	-0.236	2.265
2000	5	-0.134	1.528
2001	5	-0.486	4.220
Average		0.015	2.578

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	BOTTOM 5 AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
05-Apr-96	-1.470795	-2.357111	0.886316	-0.005549	0.891865	0.795423
12-Apr-96	-0.740427	-1.485949	0.745522	-0.005549	0.751071	0.564108
19-Apr-96	-1.052315	5.329646	-6.381961	-0.005549	-6.376412	40.658635
26-Apr-96	0.450652	-0.014359	0.465011	-0.005549	0.470559	0.221426
03-May-96	2.248610	-0.669565	2.918174	-0.005549	2.923723	8.548158
10-May-96	4.308871	2.943285	1.365586	-0.005549	1.371135	1.880010
17-May-96	1.735125	-1.360883	3.096009	-0.005549	3.101558	9.619659
24-May-96	-0.038801	-0.290799	0.251998	-0.005549	0.257547	0.066330
31-May-96	0.303153	0.176842	0.126311	-0.005549	0.131860	0.017387
07-Jun-96	0.478378	1.813730	-1.335352	-0.005549	-1.329803	1.768375
14-Jun-96	0.860600	1.012674	-0.152074	-0.005549	-0.146526	0.021470
21-Jun-96	2.298225	0.076174	2.222051	-0.005549	2.227600	4.962203
28-Jun-96	0.280469	1.056581	-0.776112	-0.005549	-0.770563	0.593767
05-Jul-96	-2.330313	0.928913	-3.259226	-0.005549	-3.253677	10.586413
12-Jul-96	-0.124537	0.328454	-0.452991	-0.005549	-0.447442	0.200204
19-Jul-96	0.776628	0.950258	-0.173629	-0.005549	-0.168080	0.028251
26-Jul-96	-0.418166	0.060286	-0.478452	-0.005549	-0.472904	0.223638
2-Aug-96	-3.883964	-0.604268	-3.279695	-0.005549	-3.274146	10.720034
9-Aug-96	1.470606	-2.294619	3.765224	-0.005549	3.770773	14.218731
16-Aug-96	-1.209800	-1.007237	-0.202563	-0.005549	-0.197014	0.038815
23-Aug-96	0.183300	2.320681	-2.137381	-0.005549	-2.131832	4.544710
30-Aug-96	0.390663	0.538334	-0.147670	-0.005549	-0.142121	0.020199
6-Sep-96	-2.028550	-1.494494	-0.534056	-0.005549	-0.528507	0.279320
13-Sep-96	1.554057	-1.585412	3.139470	-0.005549	3.145019	9.891142
20-Sep-96	0.908070	1.196762	-0.288691	-0.005549	-0.283143	0.080170
27-Sep-96	-0.366969	-0.454615	0.087645	-0.005549	0.093194	0.008685
4-Oct-96	-0.690627	0.185653	-0.876280	-0.005549	-0.870731	0.758172
11-Oct-96	1.326041	1.819624	-0.493583	-0.005549	-0.488035	0.238178
18-Oct-96	0.373906	-2.045976	2.419882	-0.005549	2.425431	5.882714
25-Oct-96	0.460282	-0.599096	1.059378	-0.005549	1.064927	1.134070
1-Nov-96	-1.149545	1.856407	-3.005952	-0.005549	-3.000403	9.002419
8-Nov-96	0.309043	0.249205	0.059839	-0.005549	0.065388	0.004276
15-Nov-96	-1.229809	0.305197	-1.535006	-0.005549	-1.529457	2.339239
22-Nov-96	2.120387	1.104658	1.015730	-0.005549	1.021279	1.043010
29-Nov-96	0.035096	1.395930	-1.360835	-0.005549	-1.355286	1.836800
6-Dec-96	0.873576	2.045787	-1.172211	-0.005549	-1.166662	1.361100
13-Dec-96	0.792714	1.292523	-0.499809	-0.005549	-0.494260	0.244293
20-Dec-96	-1.226854	0.270963	-1.497818	-0.005549	-1.492269	2.226867
27-Dec-96	-0.594315	0.091095	-0.685410	-0.005549	-0.679862	0.462212
3-Jan-97	2.650582	5.430298	-2.779716	-0.005549	-2.774167	7.696002
10-Jan-97	-1.202167	4.940396	-6.142564	-0.005549	-6.137015	37.662949
17-Jan-97	9.083144	24.852022	-15.768878	-0.005549	-15.763329	248.482555
24-Jan-97	2.866526	-3.966811	6.833336	-0.005549	6.838885	46.770352
31-Jan-97	-3.666693	-4.006782	0.340090	-0.005549	0.345638	0.119466
7-Feb-97	0.474484	3.838745	-3.364261	-0.005549	-3.358712	11.280947
14-Feb-97	-0.717611	6.128349	-6.845960	-0.005549	-6.840411	46.791221
21-Feb-97	-0.182937	0.573122	-0.756059	-0.005549	-0.750510	0.563265
28-Feb-97	0.259970	-1.348052	1.608023	-0.005549	1.613572	2.603614
7-Mar-97	-0.439320	1.084332	-1.523651	-0.005549	-1.518102	2.304635
14-Mar-97	-3.602365	-2.132542	-1.469823	-0.005549	-1.464274	2.144100
21-Mar-97	-1.880029	0.136794	-2.016823	-0.005549	-2.011274	4.045224
28-Mar-97	-0.153490	-3.391783	3.238293	-0.005549	3.243842	10.522511
4-Apr-97	-1.938890	1.839883	-3.778772	-0.005549	-3.773224	14.237216
11-Apr-97	-0.718295	0.690652	-1.408947	-0.005549	-1.403398	1.969527
18-Apr-97	0.579746	-0.475134	1.054881	-0.005549	1.060430	1.124511
25-Apr-97	-0.603305	0.521452	-1.124757	-0.005549	-1.119208	1.252626
2-May-97	1.137311	3.354378	-2.217067	-0.005549	-2.211518	4.890812
9-May-97	0.893076	2.335965	-1.442889	-0.005549	-1.437341	2.065948
16-May-97	-1.269734	0.333371	-1.603105	-0.005549	-1.597556	2.552186
23-May-97	1.087094	-1.190981	2.278074	-0.005549	2.283623	5.214935
30-May-97	0.838890	0.328480	0.510410	-0.005549	0.515959	0.266214
6-Jun-97	-0.584995	0.785697	-1.370692	-0.005549	-1.365143	1.863616
13-Jun-97	-0.045926	2.706845	-2.752771	-0.005549	-2.747222	7.547231
20-Jun-97	-0.734601	0.471576	-1.206177	-0.005549	-1.200628	1.441508

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	BOTTOM 5 AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
27-Jun-97	0.218043	3.649253	-3.431210	-0.005549	-3.425661	11.735155
4-Jul-97	0.143830	-1.351323	1.495153	-0.005549	1.500702	2.252106
11-Jul-97	0.065206	-3.328234	3.393440	-0.005549	3.398988	11.553123
18-Jul-97	0.735350	-1.436684	2.172034	-0.005549	2.177583	4.741867
25-Jul-97	-0.757769	1.725891	-2.483660	-0.005549	-2.478111	6.141035
1-Aug-97	1.110361	-3.128895	4.239256	-0.005549	4.244805	18.018366
8-Aug-97	-1.286703	-2.147189	0.860486	-0.005549	0.866035	0.750016
15-Aug-97	2.025246	1.068309	0.956936	-0.005549	0.962485	0.926378
22-Aug-97	4.319763	-0.122252	4.442016	-0.005549	4.447565	19.780830
29-Aug-97	0.579335	2.858642	-2.279307	-0.005549	-2.273758	5.169974
5-Sep-97	3.949311	-5.486188	9.435500	-0.005549	9.441049	89.133402
12-Sep-97	10.441376	-0.065146	10.506522	-0.005549	10.512071	110.503644
19-Sep-97	1.863244	1.440780	0.422464	-0.005549	0.428013	0.183195
26-Sep-97	-0.672856	-0.584387	-0.088469	-0.005549	-0.082920	0.006876
3-Oct-97	-0.328966	-1.883697	1.554732	-0.005549	1.560281	2.434475
10-Oct-97	-1.351223	-3.823773	2.472551	-0.005549	2.478100	6.140978
17-Oct-97	-1.638142	-1.695339	0.057197	-0.005549	0.062746	0.003937
24-Oct-97	-0.281302	-0.035787	-0.245514	-0.005549	-0.239965	0.057583
31-Oct-97	-2.308058	-0.154960	-2.153098	-0.005549	-2.147549	4.611968
7-Nov-97	-1.043538	-0.147089	-0.896449	-0.005549	-0.890900	0.793703
14-Nov-97	0.779333	-4.967406	5.746739	-0.005549	5.752288	33.088814
21-Nov-97	-6.607248	-4.474500	-2.132749	-0.005549	-2.127200	4.524979
28-Nov-97	-8.251373	2.801052	-11.052426	-0.005549	-11.046877	122.033483
5-Dec-97	1.948809	1.327979	0.620830	-0.005549	0.626379	0.392350
12-Dec-97	1.457150	0.845802	0.611348	-0.005549	0.616897	0.380562
19-Dec-97	-0.620173	1.308686	-1.928859	-0.005549	-1.923310	3.699121
26-Dec-97	0.803987	1.184464	-0.380477	-0.005549	-0.374928	0.140571
2-Jan-98	1.035328	0.081195	0.954133	-0.005549	0.959682	0.920989
9-Jan-98	2.846197	1.794045	1.052153	-0.005549	1.057701	1.118732
16-Jan-98	7.096069	8.989038	-1.892969	-0.005549	-1.887421	3.562356
23-Jan-98	3.130173	1.234403	1.895770	-0.005549	1.901319	3.615015
30-Jan-98	3.587992	-2.478449	6.066440	-0.005549	6.071989	36.869054
6-Feb-98	-1.557287	-5.359425	3.802138	-0.005549	3.807687	14.498482
13-Feb-98	-1.150642	1.871560	-3.022201	-0.005549	-3.016652	9.100191
20-Feb-98	1.517204	1.614377	-0.097173	-0.005549	-0.091624	0.008395
27-Feb-98	1.817068	0.877225	0.939842	-0.005549	0.945391	0.893765
6-Mar-98	2.443753	-1.570093	4.013846	-0.005549	4.019395	16.155536
13-Mar-98	-3.670157	-1.708975	-1.961182	-0.005549	-1.955633	3.824502
20-Mar-98	1.799227	-1.834118	3.633345	-0.005549	3.638893	13.241545
27-Mar-98	8.095188	-2.708759	10.803948	-0.005549	10.809496	116.845213
3-Apr-98	-0.555804	2.008037	-2.563841	-0.005549	-2.558292	6.544859
10-Apr-98	-5.089360	-2.486608	-2.602753	-0.005549	-2.597204	6.745467
17-Apr-98	-3.163715	0.588914	-3.752629	-0.005549	-3.747080	14.040610
24-Apr-98	-0.212330	0.167479	-0.379808	-0.005549	-0.374260	0.140070
1-May-98	-1.121249	-1.505238	0.383988	-0.005549	0.389537	0.151739
8-May-98	-1.385895	-0.922107	-0.463788	-0.005549	-0.458239	0.209983
15-May-98	1.184108	2.387000	-1.202892	-0.005549	-1.197343	1.433631
22-May-98	0.493405	-2.539672	3.033077	-0.005549	3.038626	9.233249
29-May-98	1.256676	2.715434	-1.458758	-0.005549	-1.453209	2.111817
5-Jun-98	1.310945	2.457632	-1.146687	-0.005549	-1.141138	1.302195
12-Jun-98	10.042275	0.975115	9.067159	-0.005549	9.072708	82.314036
19-Jun-98	-3.081917	-0.738031	-2.343886	-0.005549	-2.338337	5.467821
26-Jun-98	-2.913780	0.020675	-2.934455	-0.005549	-2.928906	8.578491
3-Jul-98	4.016592	-0.793723	4.810314	-0.005549	4.815863	23.192539
10-Jul-98	-0.294733	-0.299901	0.005168	-0.005549	0.010717	0.000115
17-Jul-98	0.722104	-0.618795	1.340899	-0.005549	1.346448	1.812921
24-Jul-98	-0.866732	-2.486538	1.619806	-0.005549	1.625354	2.641777
31-Jul-98	-0.686608	1.714797	-2.401405	-0.005549	-2.395856	5.740128
7-Aug-98	-0.848262	1.576375	-2.424637	-0.005549	-2.419088	5.851987
14-Aug-98	1.152614	0.744977	0.407637	-0.005549	0.413185	0.170722
21-Aug-98	-0.087808	-0.094929	0.007121	-0.005549	0.012670	0.000161
28-Aug-98	0.804195	0.467846	0.336349	-0.005549	0.341898	0.116894
4-Sep-98	0.456509	-5.568257	6.024767	-0.005549	6.030316	36.364705
11-Sep-98	-0.039838	1.838981	-1.878818	-0.005549	-1.873270	3.509139
18-Sep-98	-0.215030	-1.926228	1.711198	-0.005549	1.716747	2.947219

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	BOTTOM 5 AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
25-Sep-98	-1.694707	-1.593621	-0.101086	-0.005549	-0.095537	0.009127
2-Oct-98	-1.214725	-0.269457	-0.945268	-0.005549	-0.939719	0.883072
9-Oct-98	-2.727658	-0.831587	-1.896071	-0.005549	-1.890522	3.574073
16-Oct-98	-2.305257	0.049218	-2.354475	-0.005549	-2.348926	5.517454
23-Oct-98	-0.000655	-0.292985	0.292330	-0.005549	0.297879	0.088732
30-Oct-98	1.083126	-1.271330	2.354457	-0.005549	2.360006	5.569626
6-Nov-98	-0.377602	0.312688	-0.690290	-0.005549	-0.684741	0.468871
13-Nov-98	-0.307232	-3.356574	3.049341	-0.005549	3.054890	9.332355
20-Nov-98	-0.393098	-0.655642	0.262544	-0.005549	0.268093	0.071874
27-Nov-98	0.344741	-0.833487	1.178228	-0.005549	1.183777	1.401327
4-Dec-98	-2.272289	0.617375	-2.889664	-0.005549	-2.884115	8.318119
11-Dec-98	2.159143	0.123118	2.036025	-0.005549	2.041573	4.168022
18-Dec-98	3.230961	0.873624	2.357337	-0.005549	2.362886	5.583228
25-Dec-98	10.353605	5.998130	4.355475	-0.005549	4.361023	19.018526
1-Jan-99	7.039784	5.066129	1.973655	-0.005549	1.979204	3.917248
8-Jan-99	2.138520	0.797467	1.341053	-0.005549	1.346602	1.813336
15-Jan-99	0.146265	4.071223	-3.924958	-0.005549	-3.919410	15.361771
22-Jan-99	3.364091	0.088962	3.275128	-0.005549	3.280677	10.762842
29-Jan-99	-0.812386	-1.556350	0.743965	-0.005549	0.749513	0.561770
5-Feb-99	-4.505931	-3.523380	-0.982551	-0.005549	-0.977002	0.954534
12-Feb-99	-0.525541	-1.585123	1.059582	-0.005549	1.065131	1.134504
19-Feb-99	-1.929342	2.254142	-4.183484	-0.005549	-4.177935	17.455140
26-Feb-99	-1.107403	-0.999437	-0.107966	-0.005549	-0.102417	0.010489
5-Mar-99	-1.647298	1.687738	-3.335036	-0.005549	-3.329487	11.085487
12-Mar-99	4.938246	1.490861	3.447385	-0.005549	3.452934	11.922751
19-Mar-99	-2.605445	0.280777	-2.886222	-0.005549	-2.880673	8.298279
26-Mar-99	0.071686	-0.403208	0.474894	-0.005549	0.480443	0.230826
2-Apr-99	-0.648124	-0.246670	-0.401453	-0.005549	-0.395905	0.156740
9-Apr-99	-1.039803	-0.554328	-0.485475	-0.005549	-0.479926	0.230329
16-Apr-99	3.080700	1.615523	1.465177	-0.005549	1.470725	2.163033
23-Apr-99	-1.412359	0.205262	-1.617621	-0.005549	-1.612072	2.598777
30-Apr-99	0.313930	4.760026	-4.446096	-0.005549	-4.440547	19.718458
7-May-99	-0.259177	-1.791689	1.532512	-0.005549	1.538061	2.365631
14-May-99	0.061063	-0.665076	0.726139	-0.005549	0.731688	0.535367
21-May-99	-0.133493	1.602985	-1.736478	-0.005549	-1.730929	2.996115
28-May-99	-3.726017	-0.358193	-3.367824	-0.005549	-3.362275	11.304891
4-Jun-99	2.964072	0.724770	2.239302	-0.005549	2.244851	5.039355
11-Jun-99	-0.935373	0.291509	-1.226881	-0.005549	-1.221332	1.491653
18-Jun-99	1.901815	0.565116	1.336700	-0.005549	1.342249	1.801631
25-Jun-99	-0.156487	-0.691441	0.534955	-0.005549	0.540503	0.292144
2-Jul-99	-0.372118	-0.525819	0.153701	-0.005549	0.159250	0.025360
9-Jul-99	0.868423	0.747000	0.121423	-0.005549	0.126972	0.016122
16-Jul-99	2.978275	-0.346893	3.325168	-0.005549	3.330717	11.093677
23-Jul-99	-0.314147	-2.025726	1.711579	-0.005549	1.717128	2.948528
30-Jul-99	0.585538	-1.648839	2.234377	-0.005549	2.239926	5.017269
6-Aug-99	0.375248	-1.573579	1.948827	-0.005549	1.954376	3.819585
13-Aug-99	-0.081070	-1.925070	1.844000	-0.005549	1.849549	3.420830
20-Aug-99	0.230486	0.676804	-0.446317	-0.005549	-0.440768	0.194277
27-Aug-99	-5.003571	-0.790095	-4.213476	-0.005549	-4.207927	17.706651
3-Sep-99	-0.022955	0.674582	-0.697538	-0.005549	-0.691989	0.478849
10-Sep-99	-5.051040	-1.099460	-3.951580	-0.005549	-3.946031	15.571163
17-Sep-99	1.249459	0.415334	0.834126	-0.005549	0.839675	0.705053
24-Sep-99	-2.756654	-2.661090	-0.095564	-0.005549	-0.090015	0.008103
1-Oct-99	-1.809626	-2.257780	0.448154	-0.005549	0.453703	0.205846
8-Oct-99	-0.573131	2.886489	-3.459620	-0.005549	-3.454071	11.930609
15-Oct-99	0.363564	1.344695	-0.981131	-0.005549	-0.975582	0.951760
22-Oct-99	-0.632373	-0.332665	-0.299709	-0.005549	-0.294160	0.086530
29-Oct-99	-0.817193	-1.150301	0.333108	-0.005549	0.338657	0.114689
5-Nov-99	0.192610	-3.131761	3.324371	-0.005549	3.329920	11.088364
12-Nov-99	0.888683	-1.867305	2.755988	-0.005549	2.761536	7.626083
19-Nov-99	-3.061287	-0.937095	-2.124192	-0.005549	-2.118643	4.488650
26-Nov-99	-0.419677	0.795866	-1.215543	-0.005549	-1.209994	1.464085
3-Dec-99	-3.612131	3.845840	-7.457971	-0.005549	-7.452422	55.538595
10-Dec-99	-0.534425	-0.546473	0.012048	-0.005549	0.017597	0.000310
17-Dec-99	-0.089654	2.257444	-2.347098	-0.005549	-2.341549	5.482854

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	BOTTOM 5 AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
24-Dec-99	0.148928	-1.302389	1.451318	-0.005549	1.456866	2.122460
31-Dec-99	0.207413	0.197681	0.009733	-0.005549	0.015282	0.000234
7-Jan-00	0.290300	0.422964	-0.132664	-0.005549	-0.127115	0.016158
14-Jan-00	-0.206172	0.875675	-1.081846	-0.005549	-1.076297	1.158416
21-Jan-00	-1.529735	-0.441080	-1.088655	-0.005549	-1.083106	1.173119
28-Jan-00	2.063646	-0.411254	2.474900	-0.005549	2.480449	6.152628
4-Feb-00	0.845284	0.261495	0.583789	-0.005549	0.589338	0.347319
11-Feb-00	-2.595000	-2.784898	0.189898	-0.005549	0.195447	0.038199
18-Feb-00	-0.597766	0.567763	-1.165529	-0.005549	-1.159980	1.345553
25-Feb-00	-2.398460	-4.602569	2.204109	-0.005549	2.209658	4.882590
3-Mar-00	-2.064685	6.204232	-8.268917	-0.005549	-8.263368	68.283256
10-Mar-00	4.657585	2.611204	2.046381	-0.005549	2.051930	4.210416
17-Mar-00	1.493696	1.706889	-0.213193	-0.005549	-0.207644	0.043116
24-Mar-00	-1.733536	-4.056095	2.322559	-0.005549	2.328108	5.420087
31-Mar-00	-0.578337	0.056715	-0.635052	-0.005549	-0.629503	0.396274
7-Apr-00	-2.494172	-1.275029	-1.219143	-0.005549	-1.213594	1.472811
14-Apr-00	-1.072974	0.425540	-1.498514	-0.005549	-1.492965	2.228944
21-Apr-00	-3.313597	-0.352664	-2.960934	-0.005549	-2.955385	8.734300
28-Apr-00	0.187140	0.057028	0.130112	-0.005549	0.135661	0.018404
5-May-00	-0.966732	-1.869193	0.902461	-0.005549	0.908010	0.824482
12-May-00	2.134840	-2.624873	4.759712	-0.005549	4.765261	22.707713
19-May-00	-3.006957	0.327840	-3.334797	-0.005549	-3.329248	11.083894
26-May-00	1.359711	0.332433	1.027278	-0.005549	1.032827	1.066731
2-Jun-00	0.990730	-0.669009	1.659739	-0.005549	1.665288	2.773185
9-Jun-00	-0.765095	-3.499778	2.734683	-0.005549	2.740232	7.508873
16-Jun-00	0.165281	-1.098741	1.264022	-0.005549	1.269570	1.611809
23-Jun-00	-1.593247	-1.447991	-0.145257	-0.005549	-0.139708	0.019518
30-Jun-00	-1.076665	0.181763	-1.258428	-0.005549	-1.252879	1.569705
7-Jul-00	0.184792	-2.640740	2.825532	-0.005549	2.831081	8.015018
14-Jul-00	-0.472790	-1.595005	1.122215	-0.005549	1.127764	1.271851
21-Jul-00	0.047683	2.200099	-2.152416	-0.005549	-2.146868	4.609040
28-Jul-00	1.128436	1.415949	-0.287512	-0.005549	-0.281964	0.079503
4-Aug-00	-0.677365	-3.802408	3.125042	-0.005549	3.130591	9.800602
11-Aug-00	0.731511	0.599766	0.131745	-0.005549	0.137293	0.018849
18-Aug-00	0.480963	1.516799	-1.035836	-0.005549	-1.030287	1.061491
25-Aug-00	-0.528429	-0.338497	-0.189932	-0.005549	-0.184383	0.033997
1-Sep-00	1.283609	-0.506435	1.790044	-0.005549	1.795593	3.224154
8-Sep-00	-0.984861	2.619403	-3.604264	-0.005549	-3.598715	12.950750
15-Sep-00	1.083806	1.706139	-0.622332	-0.005549	-0.616783	0.380422
22-Sep-00	-0.859822	2.273296	-3.133117	-0.005549	-3.127569	9.781685
29-Sep-00	-0.761550	-0.963341	0.201790	-0.005549	0.207339	0.042989
6-Oct-00	-0.671947	-1.009746	0.337799	-0.005549	0.343348	0.117888
13-Oct-00	1.284690	0.397094	0.887596	-0.005549	0.893145	0.797707
20-Oct-00	2.849314	-0.230083	3.079397	-0.005549	3.084946	9.516892
27-Oct-00	1.201318	-4.042162	5.243481	-0.005549	5.249029	27.552310
3-Nov-00	-2.174064	2.465825	-4.639889	-0.005549	-4.634340	21.477110
10-Nov-00	0.145389	3.392399	-3.247010	-0.005549	-3.241461	10.507072
17-Nov-00	0.738378	-1.170153	1.908531	-0.005549	1.914080	3.663702
24-Nov-00	1.662391	-0.814644	2.477035	-0.005549	2.482584	6.163223
1-Dec-00	-0.042613	1.005614	-1.048227	-0.005549	-1.042678	1.087177
8-Dec-00	-0.125031	-1.042271	0.917240	-0.005549	0.922789	0.851539
15-Dec-00	-0.494616	-1.573793	1.079178	-0.005549	1.084727	1.176632
22-Dec-00	-0.271093	-6.478338	6.207245	-0.005549	6.212794	38.598813
29-Dec-00	0.082477	-5.610613	5.693090	-0.005549	5.698639	32.474486
5-Jan-01	-0.082620	4.392287	-4.474907	-0.005549	-4.469358	19.975164

MEAN RETURN ASSESSMENT
 COMPARISON BETWEEN TOP 5 AND BOTTOM 5 SECURITIES
 FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	BOTTOM 5 AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
12-Jan-01	-0.856599	4.817913	-5.674512	-0.005549	-5.668964	32.137148
19-Jan-01	-11.940599	-2.806740	-9.133859	-0.005549	-9.128310	83.326047
26-Jan-01	0.105610	-0.654389	0.759999	-0.005549	0.765548	0.586064
2-Feb-01	-0.457970	0.564705	-1.022675	-0.005549	-1.017126	1.034546
9-Feb-01	23.988553	0.674264	23.314289	-0.005549	23.319838	543.814834
16-Feb-01	-3.089342	-1.935562	-1.153780	-0.005549	-1.148232	1.318436
23-Feb-01	2.380602	6.930947	-4.550346	-0.005549	-4.544797	20.655178
2-Mar-01	-3.935878	-2.552091	-1.383787	-0.005549	-1.378238	1.899540
9-Mar-01	-0.167260	4.449297	-4.616558	-0.005549	-4.611009	21.261402
16-Mar-01	-2.678806	0.469751	-3.148557	-0.005549	-3.143008	9.878497
23-Mar-01	-0.726015	-4.384611	3.658595	-0.005549	3.664144	13.425951
30-Mar-01	0.018620	-5.723924	5.742545	-0.005549	5.748094	33.040580
6-Apr-01	-1.429521	-0.550793	-0.878728	-0.005549	-0.873179	0.762441
13-Apr-01	-1.191267	-2.382795	1.191528	-0.005549	1.197077	1.432993
20-Apr-01	0.377327	-0.223095	0.600422	-0.005549	0.605970	0.367200
27-Apr-01	-2.012953	1.428150	-3.441103	-0.005549	-3.435554	11.803032
4-May-01	-1.347709	-2.059232	0.711524	-0.005549	0.717072	0.514193
11-May-01	3.165019	-2.166387	5.331406	-0.005549	5.336955	28.483089
18-May-01	-0.348573	-1.854413	1.505840	-0.005549	1.511389	2.284295
25-May-01	-1.094902	1.588439	-2.683341	-0.005549	-2.677792	7.170569
1-Jun-01	-0.927201	-1.138084	0.210882	-0.005549	0.216431	0.046843
8-Jun-01	1.034460	-0.720886	1.755346	-0.005549	1.760895	3.100751
15-Jun-01	-2.496887	1.245624	-3.742511	-0.005549	-3.736962	13.964886
22-Jun-01	-0.630112	0.161422	-0.791534	-0.005549	-0.785985	0.617773
29-Jun-01	0.419703	1.183317	-0.763614	-0.005549	-0.758065	0.574663
6-Jul-01	0.297874	0.303664	-0.005791	-0.005549	-0.000242	0.000000
13-Jul-01	2.087493	-0.411849	2.499342	-0.005549	2.504891	6.274478
20-Jul-01	-0.208256	-1.516538	1.308282	-0.005549	1.313830	1.726150
27-Jul-01	0.522708	0.173418	0.349290	-0.005549	0.354839	0.125910
3-Aug-01	-0.382266	-1.777924	1.395659	-0.005549	1.401208	1.963383
10-Aug-01	-2.229417	2.007275	-4.236692	-0.005549	-4.231143	17.902571
17-Aug-01	-0.115952	-2.399039	2.283087	-0.005549	2.288636	5.237855
24-Aug-01	-1.597912	-2.977650	1.379738	-0.005549	1.385287	1.919020
31-Aug-01	-3.349349	-2.269966	-1.079383	-0.005549	-1.073834	1.153119
7-Sep-01	-1.054737	-3.356074	2.301337	-0.005549	2.306886	5.321722
14-Sep-01	-2.122929	-0.119837	-2.003092	-0.005549	-1.997543	3.990178
21-Sep-01	-3.603056	-2.946293	-0.656763	-0.005549	-0.651214	0.424079
28-Sep-01	-3.612340	-3.457460	-0.154881	-0.005549	-0.149332	0.022300
5-Oct-01	-2.578321	1.360900	-3.939221	-0.005549	-3.933672	15.473778
12-Oct-01	-1.228495	-2.441739	1.213244	-0.005549	1.218793	1.485456
19-Oct-01	1.411067	4.927399	-3.516332	-0.005549	-3.510783	12.325595
26-Oct-01	1.868005	7.123730	-5.255725	-0.005549	-5.250176	27.564348
2-Nov-01	6.229267	4.483156	1.746111	-0.005549	1.751660	3.068312
9-Nov-01	-0.042912	-3.539139	3.496228	-0.005549	3.501777	12.262441
16-Nov-01	-0.882318	-2.825591	1.943273	-0.005549	1.948822	3.797906
23-Nov-01	-2.161574	-3.251295	1.089721	-0.005549	1.095270	1.199616
30-Nov-01	-1.694637	0.383337	-2.077974	-0.005549	-2.072425	4.294946
7-Dec-01	-3.237541	1.264944	-4.502485	-0.005549	-4.496936	20.222435
14-Dec-01	-2.469571	-0.174983	-2.294588	-0.005549	-2.289039	5.239702
21-Dec-01	-0.727065	0.059381	-0.786446	-0.005549	-0.780897	0.609800
Summation	2.893627	4.552740	-1.659113		0.000000	3,240.715989

$$\bar{d} = \frac{-1.659113}{299}$$

$$= -0.005549$$

$$\text{Std deviation} = \left[\frac{3,240.715989}{299 - 1} \right]^{0.5}$$

$$= 3.297709$$

$$t = \frac{-0.005549}{3.297709 / (299)^{0.5}}$$

$$= -0.029096$$

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN NSE 20 SHARE INDEX CONSTITUENT SECURITIES AND TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	NSE 20 INDEX AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
05-Apr-96	-1.540933	-2.357111	0.816179	0.000412	0.815767	0.665475
12-Apr-96	-0.924235	-1.485949	0.561714	0.000412	0.561302	0.315060
19-Apr-96	4.258642	5.329646	-1.071004	0.000412	-1.071416	1.147932
26-Apr-96	1.023094	-0.014359	1.037453	0.000412	1.037041	1.075455
03-May-96	-0.022661	-0.669565	0.646904	0.000412	0.646492	0.417952
10-May-96	1.960721	2.943285	-0.982564	0.000412	-0.982976	0.966242
17-May-96	-0.096129	-1.360883	1.264754	0.000412	1.264342	1.598562
24-May-96	0.495624	-0.290799	0.786422	0.000412	0.786010	0.617812
31-May-96	-0.864658	0.176842	-1.041500	0.000412	-1.041912	1.085581
07-Jun-96	2.362506	1.813730	0.548776	0.000412	0.548364	0.300703
14-Jun-96	0.742007	1.012674	-0.270667	0.000412	-0.271079	0.073484
21-Jun-96	1.502137	0.076174	1.425962	0.000412	1.425550	2.032194
28-Jun-96	-0.242028	1.056581	-1.298609	0.000412	-1.299021	1.687456
05-Jul-96	0.097211	0.928913	-0.831702	0.000412	-0.832114	0.692413
12-Jul-96	-0.560116	0.328454	-0.888570	0.000412	-0.888982	0.790289
19-Jul-96	0.276293	0.950258	-0.673965	0.000412	-0.674377	0.454784
26-Jul-96	-0.623816	0.060286	-0.684102	0.000412	-0.684514	0.468559
2-Aug-96	-1.536682	-0.604268	-0.932414	0.000412	-0.932826	0.870164
9-Aug-96	0.472193	-2.294619	2.766811	0.000412	2.766399	7.652965
16-Aug-96	-2.824942	-1.007237	-1.817705	0.000412	-1.818117	3.305548
23-Aug-96	0.300260	2.320681	-2.020421	0.000412	-2.020833	4.083767
30-Aug-96	1.498311	0.538334	0.959977	0.000412	0.959565	0.920765
6-Sep-96	-1.586491	-1.494494	-0.091997	0.000412	-0.092409	0.008539
13-Sep-96	0.233545	-1.585412	1.818957	0.000412	1.818545	3.307107
20-Sep-96	1.673848	1.196762	0.477086	0.000412	0.476674	0.227218
27-Sep-96	0.165746	-0.454615	0.620361	0.000412	0.619949	0.384337
4-Oct-96	-1.701321	0.185653	-1.886974	0.000412	-1.887386	3.562226
11-Oct-96	1.600736	1.819624	-0.218888	0.000412	-0.219300	0.048092
18-Oct-96	-0.323012	-2.045976	1.722964	0.000412	1.722552	2.967185
25-Oct-96	0.353871	-0.599096	0.952968	0.000412	0.952556	0.907362
1-Nov-96	0.837485	1.856407	-1.018922	0.000412	-1.019334	1.039042
8-Nov-96	-1.036553	0.249205	-1.285758	0.000412	-1.286170	1.654232
15-Nov-96	0.171325	0.305197	-0.133872	0.000412	-0.134284	0.018032
22-Nov-96	2.031634	1.104658	0.926976	0.000412	0.926564	0.858521
29-Nov-96	0.137078	1.395930	-1.258852	0.000412	-1.259264	1.585747
6-Dec-96	0.520907	2.045787	-1.524880	0.000412	-1.525292	2.326514
13-Dec-96	1.109530	1.292523	-0.182993	0.000412	-0.183405	0.033638
20-Dec-96	-0.266200	0.270963	-0.537163	0.000412	-0.537575	0.288987
27-Dec-96	0.028846	0.091095	-0.062250	0.000412	-0.062662	0.003926
3-Jan-97	2.940578	5.430298	-2.489719	0.000412	-2.490131	6.200755
10-Jan-97	2.020965	4.940396	-2.919431	0.000412	-2.919843	8.525484
17-Jan-97	14.995223	24.852022	-9.856799	0.000412	-9.857211	97.164609
24-Jan-97	0.862935	-3.966811	4.829746	0.000412	4.829334	23.322468
31-Jan-97	-2.307838	-4.006782	1.698944	0.000412	1.698532	2.885012
7-Feb-97	0.641805	3.838745	-3.196940	0.000412	-3.197352	10.223060
14-Feb-97	1.697271	6.128349	-4.431077	0.000412	-4.431489	19.638098
21-Feb-97	1.453451	0.573122	0.880329	0.000412	0.879917	0.774254
28-Feb-97	-0.077289	-1.348052	1.270763	0.000412	1.270351	1.613793
7-Mar-97	-1.059903	1.084332	-2.144234	0.000412	-2.144646	4.599507
14-Mar-97	-2.302591	-2.132542	-0.170050	0.000412	-0.170462	0.029057
21-Mar-97	-0.440212	0.136794	-0.577006	0.000412	-0.577418	0.333412
28-Mar-97	-2.230420	-3.391783	1.161364	0.000412	1.160952	1.347808
4-Apr-97	0.457203	1.839883	-1.382680	0.000412	-1.383092	1.912943
11-Apr-97	0.115374	0.690652	-0.575278	0.000412	-0.575690	0.331419
18-Apr-97	0.842465	-0.475134	1.317600	0.000412	1.317188	1.734984
25-Apr-97	0.336589	0.521452	-0.184864	0.000412	-0.185276	0.034327
2-May-97	1.857051	3.354378	-1.497327	0.000412	-1.497739	2.243222
9-May-97	2.363885	2.335965	0.027919	0.000412	0.027507	0.000757
16-May-97	0.130934	0.333371	-0.202437	0.000412	-0.202849	0.041148
23-May-97	0.118978	-1.190981	1.309959	0.000412	1.309547	1.714913
30-May-97	0.932587	0.328480	0.604107	0.000412	0.603695	0.364448
6-Jun-97	-0.970118	0.785697	-1.755815	0.000412	-1.756227	3.084333
13-Jun-97	1.555351	2.706845	-1.151495	0.000412	-1.151907	1.326889
20-Jun-97	1.570667	0.471578	1.099091	0.000412	1.098679	1.207096

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WEEK ENDING	NSE 20 INDEX AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
27-Jun-97	0.423766	3.649253	-3.225487	0.000412	-3.225899	10.406426
4-Jul-97	0.111454	-1.351323	1.462777	0.000412	1.462365	2.138512
11-Jul-97	-0.398863	-3.328234	2.929371	0.000412	2.928959	8.578801
18-Jul-97	-1.241888	-1.436684	0.194796	0.000412	0.194384	0.037785
25-Jul-97	1.046502	1.725891	-0.679388	0.000412	-0.679800	0.462129
1-Aug-97	-1.173499	-3.128895	1.955396	0.000412	1.954984	3.821962
8-Aug-97	-2.246924	-2.147189	-0.099735	0.000412	-0.100147	0.010029
15-Aug-97	1.117822	1.068309	0.049512	0.000412	0.049100	0.002411
22-Aug-97	0.932592	-0.122252	1.054844	0.000412	1.054432	1.111827
29-Aug-97	0.269821	2.858642	-2.588821	0.000412	-2.589233	6.704128
5-Sep-97	0.442751	-5.486188	5.928939	0.000412	5.928527	35.147434
12-Sep-97	2.772492	-0.065146	2.837638	0.000412	2.837226	8.049850
19-Sep-97	0.360642	1.440780	-1.080138	0.000412	-1.080550	1.167589
26-Sep-97	-1.067107	-0.584387	-0.482720	0.000412	-0.483132	0.233416
3-Oct-97	-0.766665	-1.883697	1.117032	0.000412	1.116620	1.246841
10-Oct-97	-1.538814	-3.823773	2.284960	0.000412	2.284548	5.219158
17-Oct-97	-1.449551	-1.695339	0.245789	0.000412	0.245377	0.060210
24-Oct-97	-1.575030	-0.035787	-1.539242	0.000412	-1.539654	2.370535
31-Oct-97	-0.274848	-0.154960	-0.119889	0.000412	-0.120301	0.014472
7-Nov-97	-0.007877	-0.147089	0.139212	0.000412	0.138800	0.019265
14-Nov-97	-1.461191	-4.967406	3.506215	0.000412	3.505803	12.290653
21-Nov-97	-2.993971	-4.474500	1.480529	0.000412	1.480117	2.190746
28-Nov-97	-1.726853	2.801052	-4.527906	0.000412	-4.528318	20.505662
5-Dec-97	0.853340	1.327979	-0.474639	0.000412	-0.475051	0.225674
12-Dec-97	0.566641	0.845802	-0.279161	0.000412	-0.279573	0.078161
19-Dec-97	0.859448	1.308686	-0.449237	0.000412	-0.449649	0.202185
26-Dec-97	0.727947	1.184464	-0.456517	0.000412	-0.456929	0.208784
2-Jan-98	0.305414	0.081195	0.224218	0.000412	0.223806	0.050089
9-Jan-98	1.514054	1.794045	-0.279991	0.000412	-0.280403	0.078626
16-Jan-98	5.991871	8.989038	-2.997167	0.000412	-2.997579	8.985483
23-Jan-98	2.274486	1.234403	1.040083	0.000412	1.039671	1.080916
30-Jan-98	1.602630	-2.478449	4.081079	0.000412	4.080667	16.651845
6-Feb-98	-2.628653	-5.359425	2.730773	0.000412	2.730361	7.454870
13-Feb-98	-0.068683	1.871560	-1.940243	0.000412	-1.940655	3.766140
20-Feb-98	0.643342	1.614377	-0.971035	0.000412	-0.971447	0.943710
27-Feb-98	2.932889	0.877225	2.055663	0.000412	2.055251	4.224058
6-Mar-98	0.409024	-1.570093	1.979118	0.000412	1.978706	3.915276
13-Mar-98	-1.503187	-1.708975	0.205787	0.000412	0.205375	0.042179
20-Mar-98	-1.396097	-1.834118	0.438020	0.000412	0.437608	0.191501
27-Mar-98	1.365560	-2.708759	4.074319	0.000412	4.073907	16.596718
3-Apr-98	-0.994319	2.008037	-3.002356	0.000412	-3.002768	9.016618
10-Apr-98	-1.279525	-2.486608	1.207083	0.000412	1.206671	1.456055
17-Apr-98	-0.612075	0.588914	-1.200989	0.000412	-1.201401	1.443364
24-Apr-98	-0.575121	0.167479	-0.742600	0.000412	-0.743012	0.552067
1-May-98	-2.350855	-1.505238	-0.845617	0.000412	-0.846029	0.715765
8-May-98	-0.413121	-0.922107	0.508986	0.000412	0.508574	0.258647
15-May-98	-0.484285	2.387000	-2.871286	0.000412	-2.871698	8.246647
22-May-98	0.199241	-2.539672	2.738913	0.000412	2.738501	7.499388
29-May-98	3.353246	2.715434	0.637812	0.000412	0.637400	0.406279
5-Jun-98	1.936125	2.457632	-0.521507	0.000412	-0.521919	0.272400
12-Jun-98	3.459092	0.975115	2.483977	0.000412	2.483565	6.168094
19-Jun-98	-1.140509	-0.738031	-0.402478	0.000412	-0.402890	0.162320
26-Jun-98	-0.938301	0.020675	-0.958976	0.000412	-0.959388	0.920425
3-Jul-98	0.855007	-0.793723	1.648730	0.000412	1.648318	2.716952
10-Jul-98	-0.149095	-0.299901	0.150807	0.000412	0.150395	0.022619
17-Jul-98	-0.243881	-0.618795	0.374914	0.000412	0.374502	0.140252
24-Jul-98	-0.745868	-2.486538	1.740670	0.000412	1.740258	3.028498
31-Jul-98	0.672763	1.714797	-1.042034	0.000412	-1.042446	1.086694
7-Aug-98	0.392846	1.576375	-1.183530	0.000412	-1.183942	1.401718
14-Aug-98	0.189168	0.744977	-0.555809	0.000412	-0.556221	0.309382
21-Aug-98	-0.311448	-0.094929	-0.216519	0.000412	-0.216931	0.047059
28-Aug-98	0.508450	0.467846	0.040604	0.000412	0.040192	0.001615
4-Sep-98	-2.414063	-5.568257	3.154194	0.000412	3.153782	9.946342
11-Sep-98	-0.089946	1.838981	-1.928927	0.000412	-1.929339	3.722349
18-Sep-98	-0.179533	-1.926228	1.746695	0.000412	1.746283	3.049505

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WEEK ENDING	NSE 20 INDEX AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
25-Sep-98	-1.044443	-1.593621	0.549178	0.000412	0.548766	0.301144
2-Oct-98	-0.517489	-0.269457	-0.248032	0.000412	-0.248444	0.061724
9-Oct-98	-0.601954	-0.831587	0.229633	0.000412	0.229221	0.052542
16-Oct-98	-0.260376	0.049218	-0.309594	0.000412	-0.310006	0.096104
23-Oct-98	0.116119	-0.292985	0.409104	0.000412	0.408692	0.167029
30-Oct-98	0.139348	-1.271330	1.410678	0.000412	1.410266	1.988850
6-Nov-98	-0.067134	0.312688	-0.379822	0.000412	-0.380234	0.144578
13-Nov-98	-2.065325	-3.356574	1.291249	0.000412	1.290837	1.666259
20-Nov-98	-0.077767	-0.655642	0.577875	0.000412	0.577463	0.333464
27-Nov-98	-0.612215	-0.833487	0.221272	0.000412	0.220860	0.048779
4-Dec-98	-0.292423	0.617375	-0.909798	0.000412	-0.910210	0.828481
11-Dec-98	1.976228	0.123118	1.853109	0.000412	1.852697	3.432488
18-Dec-98	3.168956	0.873624	2.295332	0.000412	2.294920	5.266656
25-Dec-98	6.666853	5.998130	0.668723	0.000412	0.668311	0.446639
1-Jan-99	3.633439	5.066129	-1.432691	0.000412	-1.433103	2.053784
8-Jan-99	1.769584	0.797467	0.972117	0.000412	0.971705	0.944210
15-Jan-99	2.922371	4.071223	-1.148852	0.000412	-1.149264	1.320807
22-Jan-99	2.765566	0.088962	2.676604	0.000412	2.676192	7.162003
29-Jan-99	-1.929705	-1.556350	-0.373355	0.000412	-0.373767	0.139702
5-Feb-99	-3.589744	-3.523380	-0.066364	0.000412	-0.066776	0.004459
12-Feb-99	-0.621202	-1.585123	0.963921	0.000412	0.963509	0.928349
19-Feb-99	-0.043247	2.254142	-2.297389	0.000412	-2.297801	5.279889
26-Feb-99	0.030598	-0.999437	1.030035	0.000412	1.029623	1.060124
5-Mar-99	-1.090962	1.687738	-2.778700	0.000412	-2.779112	7.723463
12-Mar-99	1.964570	1.490861	0.473709	0.000412	0.473297	0.224010
19-Mar-99	-0.793489	0.280777	-1.074266	0.000412	-1.074678	1.154932
26-Mar-99	-1.770357	-0.403208	-1.367149	0.000412	-1.367561	1.870222
2-Apr-99	-0.586858	-0.246670	-0.340188	0.000412	-0.340600	0.116008
9-Apr-99	-1.014948	-0.554328	-0.460620	0.000412	-0.461032	0.212551
16-Apr-99	1.018760	1.615523	-0.596763	0.000412	-0.597175	0.356618
23-Apr-99	0.385802	0.205262	0.180540	0.000412	0.180128	0.032446
30-Apr-99	0.966337	4.760026	-3.793689	0.000412	-3.794101	14.395203
7-May-99	-1.533374	-1.791689	0.258315	0.000412	0.257903	0.066514
14-May-99	-0.552015	-0.665076	0.113061	0.000412	0.112649	0.012690
21-May-99	-0.368978	1.602985	-1.971963	0.000412	-1.972375	3.890263
28-May-99	-0.204027	-0.358193	0.154167	0.000412	0.153755	0.023640
4-Jun-99	0.958984	0.724770	0.234213	0.000412	0.233801	0.054663
11-Jun-99	-0.778469	0.291509	-1.069978	0.000412	-1.070390	1.145734
18-Jun-99	2.048177	0.565116	1.483061	0.000412	1.482649	2.198249
25-Jun-99	-0.563224	-0.691441	0.128217	0.000412	0.127805	0.016334
2-Jul-99	-0.368958	-0.525819	0.156860	0.000412	0.156448	0.024476
9-Jul-99	0.456165	0.747000	-0.290836	0.000412	-0.291248	0.084825
16-Jul-99	1.297751	-0.346893	1.644644	0.000412	1.644232	2.703500
23-Jul-99	0.180321	-2.025726	2.206047	0.000412	2.205635	4.864827
30-Jul-99	-0.244173	-1.648839	1.404666	0.000412	1.404254	1.971929
6-Aug-99	-0.493196	-1.573579	1.080383	0.000412	1.079971	1.166337
13-Aug-99	-0.364820	-1.925070	1.560250	0.000412	1.559838	2.433094
20-Aug-99	-0.045034	0.676804	-0.721838	0.000412	-0.722250	0.521645
27-Aug-99	-2.869026	-0.790095	-2.078932	0.000412	-2.079344	4.323670
3-Sep-99	-0.991370	0.674582	-1.665952	0.000412	-1.666364	2.776770
10-Sep-99	-2.444261	-1.099460	-1.344802	0.000412	-1.345214	1.809599
17-Sep-99	0.592241	0.415334	0.176907	0.000412	0.176495	0.031150
24-Sep-99	-2.323518	-2.661090	0.337573	0.000412	0.337161	0.113677
1-Oct-99	-0.761584	-2.257780	1.496196	0.000412	1.495784	2.237371
8-Oct-99	1.053122	2.886489	-1.833367	0.000412	-1.833779	3.362746
15-Oct-99	0.515241	1.344695	-0.829454	0.000412	-0.829866	0.688677
22-Oct-99	-0.454979	-0.332665	-0.122315	0.000412	-0.122727	0.015062
29-Oct-99	-0.353873	-1.150301	0.796428	0.000412	0.796016	0.633641
5-Nov-99	-1.151629	-3.131761	1.980132	0.000412	1.979720	3.919290
12-Nov-99	-1.671609	-1.867305	0.195695	0.000412	0.195283	0.038136
19-Nov-99	-0.945197	-0.937095	-0.008102	0.000412	-0.008514	0.000072
26-Nov-99	-0.368819	0.795866	-1.164685	0.000412	-1.165097	1.357452
3-Dec-99	0.524713	3.845840	-3.321127	0.000412	-3.321539	11.032623
10-Dec-99	-0.785024	-0.546473	-0.238551	0.000412	-0.238963	0.057103
17-Dec-99	1.148107	2.257444	-1.109338	0.000412	-1.109750	1.231544

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WEEK ENDING	NSE 20 INDEX AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
24-Dec-99	-0.157416	-1.302389	1.144973	0.000412	1.144561	1.310020
31-Dec-99	0.181286	0.197681	-0.016395	0.000412	-0.016807	0.000282
7-Jan-00	0.208714	0.422964	-0.214250	0.000412	-0.214662	0.046080
14-Jan-00	0.817364	0.875675	-0.058311	0.000412	-0.058723	0.003448
21-Jan-00	-0.526451	-0.441080	-0.085372	0.000412	-0.085784	0.007359
28-Jan-00	0.132943	-0.411254	0.544197	0.000412	0.543785	0.295702
4-Feb-00	-0.047612	0.261495	-0.309106	0.000412	-0.309518	0.095802
11-Feb-00	-1.377500	-2.784898	1.407398	0.000412	1.406986	1.979610
18-Feb-00	-0.024779	0.567763	-0.592541	0.000412	-0.592953	0.351594
25-Feb-00	-1.297729	-4.602569	3.304840	0.000412	3.304428	10.919241
3-Mar-00	1.599259	6.204232	-4.604973	0.000412	-4.605385	21.209573
10-Mar-00	0.920848	2.611204	-1.690356	0.000412	-1.690768	2.858698
17-Mar-00	0.914571	1.706889	-0.792317	0.000412	-0.792729	0.628419
24-Mar-00	-2.483938	-4.056095	1.572156	0.000412	1.571744	2.470381
31-Mar-00	0.401350	0.056715	0.344635	0.000412	0.344223	0.118489
7-Apr-00	-0.745688	-1.275029	0.529341	0.000412	0.528929	0.279766
14-Apr-00	-0.352804	0.425540	-0.778344	0.000412	-0.778756	0.606461
21-Apr-00	-1.291231	-0.352664	-0.938568	0.000412	-0.938980	0.881683
28-Apr-00	-0.275869	0.057028	-0.332897	0.000412	-0.333309	0.111095
5-May-00	-1.148397	-1.869193	0.720796	0.000412	0.720384	0.518953
12-May-00	-0.222889	-2.624873	2.401983	0.000412	2.401571	5.767544
19-May-00	-0.917221	0.327840	-1.245061	0.000412	-1.245473	1.551203
26-May-00	-0.525608	0.332433	-0.858041	0.000412	-0.858453	0.736942
2-Jun-00	-0.596117	-0.669009	0.072892	0.000412	0.072480	0.005253
9-Jun-00	-2.275087	-3.499778	1.224691	0.000412	1.224279	1.498860
16-Jun-00	0.464563	-1.098741	1.563304	0.000412	1.562892	2.442631
23-Jun-00	-1.630213	-1.447991	-0.182223	0.000412	-0.182635	0.033355
30-Jun-00	0.447695	0.181763	0.265932	0.000412	0.265520	0.070501
7-Jul-00	-0.395740	-2.640740	2.245000	0.000412	2.244588	5.038174
14-Jul-00	-0.404872	-1.595005	1.190133	0.000412	1.189721	1.415435
21-Jul-00	1.333532	2.200099	-0.866567	0.000412	-0.866979	0.751653
28-Jul-00	0.664363	1.415949	-0.751585	0.000412	-0.751997	0.565500
4-Aug-00	-1.158737	-3.802408	2.643671	0.000412	2.643259	6.986818
11-Aug-00	-0.748860	0.599766	-1.348626	0.000412	-1.349038	1.819903
18-Aug-00	0.165471	1.516799	-1.351328	0.000412	-1.351740	1.827202
25-Aug-00	0.105689	-0.338497	0.444186	0.000412	0.443774	0.196936
1-Sep-00	-0.143330	-0.506435	0.363105	0.000412	0.362693	0.131546
8-Sep-00	0.653634	2.619403	-1.965770	0.000412	-1.966182	3.865870
15-Sep-00	1.322233	1.706139	-0.383905	0.000412	-0.384317	0.147700
22-Sep-00	0.188852	2.273296	-2.084444	0.000412	-2.084856	4.346623
29-Sep-00	-0.907774	-0.963341	0.055566	0.000412	0.055154	0.003042
6-Oct-00	0.004238	-1.009746	1.013984	0.000412	1.013572	1.027328
13-Oct-00	1.150246	0.397094	0.753152	0.000412	0.752740	0.566617
20-Oct-00	1.474509	-0.230083	1.704592	0.000412	1.704180	2.904229
27-Oct-00	0.267422	-4.042162	4.309584	0.000412	4.309172	18.568965
3-Nov-00	0.715642	2.465825	-1.750183	0.000412	-1.750595	3.064582
10-Nov-00	1.299205	3.392399	-2.093195	0.000412	-2.093607	4.383188
17-Nov-00	-1.170177	-1.170153	-0.000024	0.000412	-0.000436	0.000000
24-Nov-00	-0.468022	-0.814644	0.346622	0.000412	0.346210	0.119861
1-Dec-00	-0.001061	1.005614	-1.006675	0.000412	-1.007087	1.014224
8-Dec-00	-0.644108	-1.042271	0.398164	0.000412	0.397752	0.158207
15-Dec-00	-0.606827	-1.573793	0.966966	0.000412	0.966554	0.934227
22-Dec-00	-2.868615	-6.478338	3.609723	0.000412	3.609311	13.027130
29-Dec-00	-2.531035	-5.610613	3.079578	0.000412	3.079166	9.481263
5-Jan-01	3.256092	4.392287	-1.136195	0.000412	-1.136607	1.291875

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN NSE 20 SHARE INDEX CONSTITUENT SECURITIES AND TOP 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	NSE 20 INDEX AVERAGE	TOP 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
12-Jan-01	1.083449	4.817913	-3.734464	0.000412	-3.734876	13.949302
19-Jan-01	-3.695487	-2.806740	-0.888747	0.000412	-0.889159	0.790603
26-Jan-01	-0.361873	-0.654389	0.292516	0.000412	0.292104	0.085325
2-Feb-01	-0.510395	0.564705	-1.075100	0.000412	-1.075512	1.156727
9-Feb-01	6.337295	0.674264	5.663031	0.000412	5.662619	32.065253
16-Feb-01	-0.664288	-1.935562	1.271273	0.000412	1.270861	1.615088
23-Feb-01	2.411835	6.930947	-4.519112	0.000412	-4.519524	20.426101
2-Mar-01	-1.054133	-2.552091	1.497958	0.000412	1.497546	2.242644
9-Mar-01	0.960702	4.449297	-3.488595	0.000412	-3.489007	12.173171
16-Mar-01	-1.019625	0.469751	-1.489375	0.000412	-1.489787	2.219466
23-Mar-01	-1.569413	-4.384611	2.815198	0.000412	2.814786	7.923019
30-Mar-01	-1.904233	-5.723924	3.819691	0.000412	3.819279	14.586895
6-Apr-01	-1.672594	-0.550793	-1.121801	0.000412	-1.122213	1.259361
13-Apr-01	-0.795176	-2.382795	1.587619	0.000412	1.587207	2.519226
20-Apr-01	-0.327547	-0.223095	-0.104452	0.000412	-0.104864	0.010997
27-Apr-01	-0.721786	1.428150	-2.149935	0.000412	-2.150347	4.623994
4-May-01	-0.705083	-2.059232	1.354149	0.000412	1.353737	1.832603
11-May-01	-0.913531	-2.166387	1.252856	0.000412	1.252444	1.568617
18-May-01	-0.755948	-1.854413	1.098466	0.000412	1.098054	1.205722
25-May-01	-1.471642	1.588439	-3.060081	0.000412	-3.060493	9.366617
1-Jun-01	-0.774804	-1.138084	0.363279	0.000412	0.362867	0.131673
8-Jun-01	-1.169757	-0.720886	-0.448871	0.000412	-0.449283	0.201855
15-Jun-01	-0.565592	1.245624	-1.811216	0.000412	-1.811628	3.281997
22-Jun-01	-0.509525	0.161422	-0.670947	0.000412	-0.671359	0.450723
29-Jun-01	0.879988	1.183317	-0.303329	0.000412	-0.303741	0.092259
6-Jul-01	1.731037	0.303664	1.427373	0.000412	1.426961	2.036217
13-Jul-01	0.622644	-0.411849	1.034492	0.000412	1.034080	1.069322
20-Jul-01	-0.568931	-1.516538	0.947606	0.000412	0.947194	0.897177
27-Jul-01	0.141675	0.173418	-0.031744	0.000412	-0.032156	0.001034
3-Aug-01	-0.765338	-1.777924	1.012586	0.000412	1.012174	1.024497
10-Aug-01	-0.468618	2.007275	-2.475893	0.000412	-2.476305	6.132087
17-Aug-01	-0.839335	-2.399039	1.559704	0.000412	1.559292	2.431391
24-Aug-01	-1.728363	-2.977650	1.249287	0.000412	1.248875	1.559689
31-Aug-01	-2.003406	-2.269966	0.266560	0.000412	0.266148	0.070835
7-Sep-01	-1.766312	-3.356074	1.589762	0.000412	1.589350	2.526034
14-Sep-01	-0.609730	-0.119837	-0.489894	0.000412	-0.490306	0.240400
21-Sep-01	-2.877522	-2.946293	0.068772	0.000412	0.068360	0.004673
28-Sep-01	-3.513956	-3.457460	-0.056496	0.000412	-0.056908	0.003239
5-Oct-01	-0.014631	1.360900	-1.375531	0.000412	-1.375943	1.893219
12-Oct-01	-1.550566	-2.441739	0.891173	0.000412	0.890761	0.793456
19-Oct-01	1.371425	4.927399	-3.555974	0.000412	-3.556386	12.647883
26-Oct-01	2.841081	7.123730	-4.282649	0.000412	-4.283061	18.344615
2-Nov-01	2.984247	4.483156	-1.498909	0.000412	-1.499321	2.247962
9-Nov-01	-0.352975	-3.539139	3.186165	0.000412	3.185753	10.149019
16-Nov-01	-1.267328	-2.825591	1.558263	0.000412	1.557851	2.426901
23-Nov-01	-1.570894	-3.251295	1.680401	0.000412	1.679989	2.822365
30-Nov-01	-1.080777	0.383337	-1.464114	0.000412	-1.464526	2.144837
7-Dec-01	-1.267522	1.264944	-2.532466	0.000412	-2.532878	6.415470
14-Dec-01	-0.203014	-0.174983	-0.028031	0.000412	-0.028443	0.000809
21-Dec-01	-0.361714	0.059381	-0.421095	0.000412	-0.421507	0.177668
Summation	4.676075	4.552740	0.123335		0.000147	959.072678

$$\bar{d} = \frac{0.123335}{299}$$

$$= 0.000412$$

$$\text{Std deviation} = \left[\frac{959.072678}{299 - 1} \right]^{0.5}$$

$$= 1.793980$$

$$t = \frac{0.000412}{1.793980 / (299)^{0.5}}$$

$$= 0.003976$$

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN NSE 20 SHARE INDEX CONSTITUENT SECURITIES AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	NSE 20 INDEX AVERAGE	BOTTOM 5 AVERAGE	DIFFERENCE	d^-	$(d - \bar{d})$	$(d - \bar{d})^2$
05-Apr-96	-1.540933	-1.470795	-0.070138	0.005961	-0.076099	0.005791
12-Apr-96	-0.924235	-0.740427	-0.183808	0.005961	-0.189769	0.036012
19-Apr-96	4.258642	-1.052315	5.310957	0.005961	5.304996	28.142985
26-Apr-96	1.023094	0.450652	0.572443	0.005961	0.566482	0.320902
03-May-96	-0.022661	2.248610	-2.271270	0.005961	-2.277231	5.185783
10-May-96	1.960721	4.308871	-2.348150	0.005961	-2.354111	5.541837
17-May-96	-0.096129	1.735125	-1.831254	0.005961	-1.837215	3.375360
24-May-96	0.495624	-0.038801	0.534424	0.005961	0.528463	0.279273
31-May-96	-0.864658	0.303153	-1.167811	0.005961	-1.173772	1.377740
07-Jun-96	2.362506	0.478378	1.884127	0.005961	1.878166	3.527508
14-Jun-96	0.742007	0.860600	-0.118593	0.005961	-0.124554	0.015514
21-Jun-96	1.502137	2.298225	-0.796089	0.005961	-0.802050	0.643284
28-Jun-96	-0.242028	0.280469	-0.522497	0.005961	-0.528458	0.279268
05-Jul-96	0.097211	-2.330313	2.427524	0.005961	2.421563	5.863968
12-Jul-96	-0.560116	-0.124537	-0.435579	0.005961	-0.441540	0.194958
19-Jul-96	0.276293	0.776628	-0.500335	0.005961	-0.506296	0.256336
26-Jul-96	-0.623816	-0.418166	-0.205649	0.005961	-0.211610	0.044779
2-Aug-96	-1.536682	-3.883964	2.347281	0.005961	2.341320	5.481780
9-Aug-96	0.472193	1.470606	-0.998413	0.005961	-1.004374	1.008767
16-Aug-96	-2.824942	-1.209800	-1.615142	0.005961	-1.621103	2.627974
23-Aug-96	0.300260	0.183300	0.116960	0.005961	0.110999	0.012321
30-Aug-96	1.498311	0.890663	1.107647	0.005961	1.101686	1.213713
6-Sep-96	-1.586491	-2.028550	0.442059	0.005961	0.436098	0.190181
13-Sep-96	0.233545	1.554057	-1.320512	0.005961	-1.326473	1.759531
20-Sep-96	1.673848	0.908070	0.765777	0.005961	0.759816	0.577321
27-Sep-96	0.165746	-0.366969	0.532715	0.005961	0.526754	0.277470
4-Oct-96	-1.701321	-0.690627	-1.010694	0.005961	-1.016655	1.033588
11-Oct-96	1.600736	1.326041	0.274696	0.005961	0.268735	0.072218
18-Oct-96	-0.323012	0.373906	-0.696918	0.005961	-0.702879	0.494039
25-Oct-96	0.353871	0.460282	-0.106411	0.005961	-0.112372	0.012627
1-Nov-96	0.837485	-1.149545	1.987030	0.005961	1.981069	3.924634
8-Nov-96	-1.036553	0.309043	-1.345596	0.005961	-1.351557	1.826707
15-Nov-96	0.171325	-1.229809	1.401135	0.005961	1.395174	1.946509
22-Nov-96	2.031634	2.120387	-0.088753	0.005961	-0.094714	0.008971
29-Nov-96	0.137078	0.035096	0.101982	0.005961	0.096021	0.009220
6-Dec-96	0.520907	0.873576	-0.352669	0.005961	-0.358630	0.128615
13-Dec-96	1.109530	0.792714	0.316816	0.005961	0.310855	0.096631
20-Dec-96	-0.266200	-1.226854	0.960655	0.005961	0.954694	0.911440
27-Dec-96	0.028846	-0.594315	0.623161	0.005961	0.617200	0.380936
3-Jan-97	2.940578	2.650582	0.289996	0.005961	0.284035	0.080676
10-Jan-97	2.020965	-1.202167	3.223132	0.005961	3.217171	10.350192
17-Jan-97	14.995223	9.083144	5.912079	0.005961	5.906118	34.882233
24-Jan-97	0.862935	2.866526	-2.003590	0.005961	-2.009551	4.038296
31-Jan-97	-2.307838	-3.666693	1.358855	0.005961	1.352894	1.830321
7-Feb-97	0.641805	0.474484	0.167321	0.005961	0.161360	0.026037
14-Feb-97	1.697271	-0.717611	2.414882	0.005961	2.408921	5.802902
21-Feb-97	1.453451	-0.182937	1.636388	0.005961	1.630427	2.658291
28-Feb-97	-0.077289	0.259970	-0.337259	0.005961	-0.343220	0.117800
7-Mar-97	-1.059903	-0.439320	-0.620583	0.005961	-0.626544	0.392557
14-Mar-97	-2.302591	-3.602365	1.299774	0.005961	1.293813	1.673951
21-Mar-97	-0.440212	-1.880029	1.439817	0.005961	1.433856	2.055943
28-Mar-97	-2.230420	-0.153490	-2.076930	0.005961	-2.082891	4.338433
4-Apr-97	0.457203	-1.938890	2.396093	0.005961	2.390132	5.712729
11-Apr-97	0.115374	-0.718295	0.833669	0.005961	0.827708	0.685101
18-Apr-97	0.842465	0.579746	0.262719	0.005961	0.256758	0.065925
25-Apr-97	0.336589	-0.603305	0.939893	0.005961	0.933932	0.872229
2-May-97	1.857051	1.137311	0.719740	0.005961	0.713779	0.509481
9-May-97	2.363885	0.893076	1.470809	0.005961	1.464848	2.145778
16-May-97	0.130934	-1.269734	1.400668	0.005961	1.394707	1.945208
23-May-97	0.118978	1.087094	-0.968115	0.005961	-0.974076	0.948825
30-May-97	0.932587	0.838890	0.093697	0.005961	0.087736	0.007698
6-Jun-97	-0.970118	-0.584995	-0.385123	0.005961	-0.391084	0.152947
13-Jun-97	1.555351	-0.045926	1.601277	0.005961	1.595316	2.545032
20-Jun-97	1.570667	-0.734601	2.305268	0.005961	2.299307	5.286813

MEAN RETURN ASSESSMENT
COMPARISON BETWEEN NSE 20 SHARE INDEX CONSTITUENT SECURITIES AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

WEEK ENDING	NSE 20 INDEX AVERAGE	BOTTOM 5 AVERAGE	DIFFERENCE	\bar{d}	$(d - \bar{d})$	$(d - \bar{d})^2$
27-Jun-97	0.423766	0.218043	0.205723	0.005961	0.199762	0.039905
4-Jul-97	0.111454	0.143830	-0.032376	0.005961	-0.038337	0.001470
11-Jul-97	-0.398863	0.065206	-0.464069	0.005961	-0.470030	0.220928
18-Jul-97	-1.241888	0.735350	-1.977238	0.005961	-1.983199	3.933080
25-Jul-97	1.046502	-0.757769	1.804272	0.005961	1.798311	3.233921
1-Aug-97	-1.173499	1.110361	-2.283860	0.005961	-2.289821	5.243279
8-Aug-97	-2.246924	-1.286703	-0.960221	0.005961	-0.966182	0.933507
15-Aug-97	1.117822	2.025246	-0.907424	0.005961	-0.913385	0.834272
22-Aug-97	0.932592	4.319763	-3.387171	0.005961	-3.393132	11.513348
29-Aug-97	0.269821	0.579335	-0.309514	0.005961	-0.315475	0.099525
5-Sep-97	0.442751	3.949311	-3.506561	0.005961	-3.512522	12.337809
12-Sep-97	2.772492	10.441376	-7.668885	0.005961	-7.674846	58.903257
19-Sep-97	0.360642	1.863244	-1.502602	0.005961	-1.508563	2.275763
26-Sep-97	-1.067107	-0.672856	-0.394251	0.005961	-0.400212	0.160170
3-Oct-97	-0.766665	-0.328966	-0.437700	0.005961	-0.443661	0.196835
10-Oct-97	-1.538814	-1.351223	-0.187591	0.005961	-0.193552	0.037462
17-Oct-97	-1.449551	-1.638142	0.188591	0.005961	0.182630	0.033354
24-Oct-97	-1.575030	-0.281302	-1.293728	0.005961	-1.299689	1.689191
31-Oct-97	-0.274848	-2.308058	2.033210	0.005961	2.027249	4.109737
7-Nov-97	-0.007877	-1.043538	1.035661	0.005961	1.029700	1.060282
14-Nov-97	-1.461191	0.779333	-2.240524	0.005961	-2.246485	5.046695
21-Nov-97	-2.993971	-6.607248	3.613278	0.005961	3.607317	13.012734
28-Nov-97	-1.726853	-8.251373	6.524520	0.005961	6.518559	42.491608
5-Dec-97	0.853340	1.948809	-1.095469	0.005961	-1.101430	1.213148
12-Dec-97	0.566641	1.457150	-0.890509	0.005961	-0.896470	0.803658
19-Dec-97	0.859448	-0.620173	1.479621	0.005961	1.473660	2.171675
26-Dec-97	0.727947	0.803987	-0.076040	0.005961	-0.082001	0.006724
2-Jan-98	0.305414	1.035328	-0.729915	0.005961	-0.735876	0.541513
9-Jan-98	1.514054	2.846197	-1.332143	0.005961	-1.338104	1.790523
16-Jan-98	5.991871	7.096069	-1.104198	0.005961	-1.110159	1.232453
23-Jan-98	2.274486	3.130173	-0.855687	0.005961	-0.861648	0.742438
30-Jan-98	1.602630	3.587992	-1.985361	0.005961	-1.991322	3.965364
6-Feb-98	-2.628653	-1.557287	-1.071366	0.005961	-1.077327	1.160633
13-Feb-98	-0.068683	-1.150642	1.081959	0.005961	1.075998	1.157771
20-Feb-98	0.643342	1.517204	-0.873863	0.005961	-0.879824	0.774090
27-Feb-98	2.932889	1.817068	1.115821	0.005961	1.109860	1.231789
6-Mar-98	0.409024	2.443753	-2.034729	0.005961	-2.040690	4.164414
13-Mar-98	-1.503187	-3.670157	2.166970	0.005961	2.161009	4.669959
20-Mar-98	-1.396097	1.799227	-3.195324	0.005961	-3.201285	10.248228
27-Mar-98	1.365560	8.095188	-6.729629	0.005961	-6.735590	45.368168
3-Apr-98	-0.994319	-0.555804	-0.438515	0.005961	-0.444476	0.197559
10-Apr-98	-1.279525	-5.089360	3.809836	0.005961	3.803875	14.469462
17-Apr-98	-0.612075	-3.163715	2.551640	0.005961	2.545679	6.480482
24-Apr-98	-0.575121	-0.212330	-0.362792	0.005961	-0.368753	0.135978
1-May-98	-2.350855	-1.121249	-1.229605	0.005961	-1.235566	1.526624
8-May-98	-0.413121	-1.385895	0.972774	0.005961	0.966813	0.934726
15-May-98	-0.484285	1.184108	-1.668393	0.005961	-1.674354	2.803463
22-May-98	0.199241	0.493405	-0.294164	0.005961	-0.300125	0.090075
29-May-98	3.353246	1.256676	2.096570	0.005961	2.090609	4.370648
5-Jun-98	1.936125	1.310945	0.625179	0.005961	0.619218	0.383431
12-Jun-98	3.459092	10.042275	-6.583183	0.005961	-6.589144	43.416814
19-Jun-98	-1.140509	-3.081917	1.941409	0.005961	1.935448	3.745958
26-Jun-98	-0.938301	-2.913780	1.975479	0.005961	1.969518	3.879002
3-Jul-98	0.855007	4.016592	-3.161585	0.005961	-3.167546	10.033345
10-Jul-98	-0.149095	-0.294733	0.145638	0.005961	0.139677	0.019510
17-Jul-98	-0.243881	0.722104	-0.965985	0.005961	-0.971946	0.944678
24-Jul-98	-0.745868	-0.866732	0.120864	0.005961	0.114903	0.013203
31-Jul-98	0.672763	-0.686608	1.359371	0.005961	1.353410	1.831719
7-Aug-98	0.392846	-0.848262	1.241107	0.005961	1.235146	1.525586
14-Aug-98	0.189168	1.152614	-0.963446	0.005961	-0.969407	0.939749
21-Aug-98	-0.311448	-0.087808	-0.223640	0.005961	-0.229601	0.052717
28-Aug-98	0.508450	0.804195	-0.295745	0.005961	-0.301706	0.091026
4-Sep-98	-2.414063	0.456509	-2.870572	0.005961	-2.876533	8.274445
11-Sep-98	-0.089946	-0.039838	-0.050109	0.005961	-0.056070	0.003144
18-Sep-98	-0.179533	-0.215030	0.035498	0.005961	0.029537	0.000872

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WEEK ENDING	NSE 20 INDEX AVERAGE	BOTTOM 5 AVERAGE	DIFFERENCE	d^-	$(d - \bar{d})$	$(d - \bar{d})^2$
25-Sep-98	-1.044443	-1.694707	0.650264	0.005961	0.644303	0.415126
2-Oct-98	-0.517489	-1.214725	0.697236	0.005961	0.691275	0.477861
9-Oct-98	-0.601954	-2.727658	2.125704	0.005961	2.119743	4.493311
16-Oct-98	-0.260376	-2.305257	2.044881	0.005961	2.038920	4.157194
23-Oct-98	0.116119	-0.000655	0.116774	0.005961	0.110813	0.012280
30-Oct-98	0.139348	1.083126	-0.943779	0.005961	-0.949740	0.902005
6-Nov-98	-0.067134	-0.377602	0.310468	0.005961	0.304507	0.092725
13-Nov-98	-2.065325	-0.307232	-1.758093	0.005961	-1.764054	3.111886
20-Nov-98	-0.077767	-0.393098	0.315331	0.005961	0.309370	0.095710
27-Nov-98	-0.612215	0.344741	-0.956956	0.005961	-0.962917	0.927208
4-Dec-98	-0.292423	-2.272289	1.979866	0.005961	1.973905	3.896302
11-Dec-98	1.976228	2.159143	-0.182915	0.005961	-0.188876	0.035674
18-Dec-98	3.168956	3.230961	-0.062005	0.005961	-0.067966	0.004619
25-Dec-98	6.666853	10.353605	-3.686752	0.005961	-3.692713	13.636128
1-Jan-99	3.633439	7.039784	-3.406346	0.005961	-3.412307	11.643838
8-Jan-99	1.769584	2.138520	-0.368936	0.005961	-0.374897	0.140548
15-Jan-99	2.922371	0.146265	2.776107	0.005961	2.770146	7.673707
22-Jan-99	2.765566	3.364091	-0.598524	0.005961	-0.604485	0.365402
29-Jan-99	-1.929705	-0.812386	-1.117319	0.005961	-1.123280	1.261759
5-Feb-99	-3.589744	-4.505931	0.916188	0.005961	0.910227	0.828512
12-Feb-99	-0.621202	-0.525541	-0.095661	0.005961	-0.101622	0.010327
19-Feb-99	-0.043247	-1.929342	1.886095	0.005961	1.880134	3.534903
26-Feb-99	0.030598	-1.107403	1.138001	0.005961	1.132040	1.281515
5-Mar-99	-1.090962	-1.647298	0.556336	0.005961	0.550375	0.302913
12-Mar-99	1.964570	4.938246	-2.973675	0.005961	-2.979636	8.878233
19-Mar-99	-0.793489	-2.605445	1.811957	0.005961	1.805996	3.261620
26-Mar-99	-1.770357	0.071686	-1.842043	0.005961	-1.848004	3.415118
2-Apr-99	-0.586858	-0.648124	0.061266	0.005961	0.055305	0.003059
9-Apr-99	-1.014948	-1.039803	0.024855	0.005961	0.018894	0.000357
16-Apr-99	1.018760	3.080700	-2.061940	0.005961	-2.067901	4.276213
23-Apr-99	0.385802	-1.412359	1.798161	0.005961	1.792200	3.211981
30-Apr-99	0.966337	0.313930	0.652407	0.005961	0.646446	0.417892
7-May-99	-1.533374	-0.259177	-1.274197	0.005961	-1.280158	1.638804
14-May-99	-0.552015	0.061063	-0.613078	0.005961	-0.619039	0.383210
21-May-99	-0.368978	-0.133493	-0.235485	0.005961	-0.241446	0.058296
28-May-99	-0.204027	-3.726017	3.521990	0.005961	3.516029	12.362461
4-Jun-99	0.958984	2.964072	-2.005088	0.005961	-2.011049	4.044320
11-Jun-99	-0.778469	-0.935373	0.156904	0.005961	0.150943	0.022784
18-Jun-99	2.048177	1.901815	0.146362	0.005961	0.140401	0.019712
25-Jun-99	-0.563224	-0.156487	-0.406737	0.005961	-0.412698	0.170320
2-Jul-99	-0.368958	-0.372118	0.003159	0.005961	-0.002802	0.000008
9-Jul-99	0.456165	0.868423	-0.412259	0.005961	-0.418220	0.174908
16-Jul-99	1.297751	2.978275	-1.680524	0.005961	-1.686485	2.844231
23-Jul-99	0.180321	-0.314147	0.494468	0.005961	0.488507	0.238639
30-Jul-99	-0.244173	0.585538	-0.829711	0.005961	-0.835672	0.698348
6-Aug-99	-0.493196	0.375248	-0.868444	0.005961	-0.874405	0.764584
13-Aug-99	-0.364820	-0.081070	-0.283750	0.005961	-0.289711	0.083932
20-Aug-99	-0.045034	0.230486	-0.275521	0.005961	-0.281482	0.079232
27-Aug-99	-2.869026	-5.003571	2.134544	0.005961	2.128583	4.530867
3-Sep-99	-0.991370	-0.022955	-0.968415	0.005961	-0.974376	0.949408
10-Sep-99	-2.444261	-5.051040	2.606779	0.005961	2.600818	6.764252
17-Sep-99	0.592241	1.249459	-0.657219	0.005961	-0.663180	0.439807
24-Sep-99	-2.323518	-2.756654	0.433136	0.005961	0.427175	0.182479
1-Oct-99	-0.761584	-1.809626	1.048042	0.005961	1.042081	1.085934
8-Oct-99	1.053122	-0.573131	1.626253	0.005961	1.620292	2.625347
15-Oct-99	0.515241	0.363564	0.151677	0.005961	0.145716	0.021233
22-Oct-99	-0.454979	-0.632373	0.177394	0.005961	0.171433	0.029389
29-Oct-99	-0.353873	-0.817193	0.463320	0.005961	0.457359	0.209177
5-Nov-99	-1.151629	0.192610	-1.344239	0.005961	-1.350200	1.823040
12-Nov-99	-1.671609	0.888683	-2.560292	0.005961	-2.566253	6.585655
19-Nov-99	-0.945197	-3.061287	2.116091	0.005961	2.110130	4.452648
26-Nov-99	-0.368819	-0.419677	0.050858	0.005961	0.044897	0.002016
3-Dec-99	0.524713	-3.612131	4.136844	0.005961	4.130883	17.064192
10-Dec-99	-0.785024	-0.534425	-0.250599	0.005961	-0.256560	0.065823
17-Dec-99	1.148107	-0.089654	1.237761	0.005961	1.231800	1.517331

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WEEK ENDING	NSE 20 INDEX AVERAGE	BOTTOM 5 AVERAGE	DIFFERENCE	d^-	$(d - \bar{d})$	$(d - \bar{d})^2$
24-Dec-99	-0.157416	0.148928	-0.306344	0.005961	-0.312305	0.097535
31-Dec-99	0.181286	0.207413	-0.026128	0.005961	-0.032089	0.001030
7-Jan-00	0.208714	0.290300	-0.081586	0.005961	-0.087547	0.007664
14-Jan-00	0.817364	-0.206172	1.023536	0.005961	1.017575	1.035458
21-Jan-00	-0.526451	-1.529735	1.003283	0.005961	0.997322	0.994651
28-Jan-00	0.132943	2.063646	-1.930703	0.005961	-1.936664	3.750667
4-Feb-00	-0.047612	0.845284	-0.892895	0.005961	-0.898856	0.807943
11-Feb-00	-1.377500	-2.595000	1.217500	0.005961	1.211539	1.467827
18-Feb-00	-0.024779	-0.597766	0.572987	0.005961	0.567026	0.321519
25-Feb-00	-1.297729	-2.398460	1.100730	0.005961	1.094769	1.198519
3-Mar-00	1.599259	-2.064685	3.663944	0.005961	3.657983	13.380839
10-Mar-00	0.920848	4.657585	-3.736737	0.005961	-3.742698	14.007791
17-Mar-00	0.914571	1.493696	-0.579124	0.005961	-0.585085	0.342325
24-Mar-00	-2.483938	-1.733536	-0.750403	0.005961	-0.756364	0.572086
31-Mar-00	0.401350	-0.578337	0.979686	0.005961	0.973725	0.948141
7-Apr-00	-0.745688	-2.494172	1.748484	0.005961	1.742523	3.036387
14-Apr-00	-0.352804	-1.072974	0.720169	0.005961	0.714208	0.510093
21-Apr-00	-1.291231	-3.313597	2.022366	0.005961	2.016405	4.065889
28-Apr-00	-0.275869	0.187140	-0.463009	0.005961	-0.468970	0.219933
5-May-00	-1.148397	-0.966732	-0.181665	0.005961	-0.187626	0.035204
12-May-00	-0.222889	2.134840	-2.357729	0.005961	-2.363690	5.587030
19-May-00	-0.917221	-3.006957	2.089736	0.005961	2.083775	4.342118
26-May-00	-0.525608	1.359711	-1.885319	0.005961	-1.891280	3.576942
2-Jun-00	-0.596117	0.990730	-1.586847	0.005961	-1.592808	2.537038
9-Jun-00	-2.275087	-0.765095	-1.509992	0.005961	-1.515953	2.298114
16-Jun-00	0.464563	0.165281	0.299282	0.005961	0.293321	0.086037
23-Jun-00	-1.630213	-1.593247	-0.036966	0.005961	-0.042927	0.001843
30-Jun-00	0.447695	-1.076665	1.524360	0.005961	1.518399	2.305536
7-Jul-00	-0.395740	0.184792	-0.580532	0.005961	-0.586493	0.343974
14-Jul-00	-0.404872	-0.472790	0.067918	0.005961	0.061957	0.003839
21-Jul-00	1.333532	0.047683	1.285849	0.005961	1.279888	1.638114
28-Jul-00	0.664363	1.128436	-0.464073	0.005961	-0.470034	0.220932
4-Aug-00	-1.158737	-0.677365	-0.481371	0.005961	-0.487332	0.237493
11-Aug-00	-0.748860	0.731511	-1.480370	0.005961	-1.486331	2.209181
18-Aug-00	0.165471	0.480963	-0.315492	0.005961	-0.321453	0.103332
25-Aug-00	0.105689	-0.528429	0.634119	0.005961	0.628158	0.394582
1-Sep-00	-0.143330	1.283609	-1.426939	0.005961	-1.432900	2.053203
8-Sep-00	0.653634	-0.984861	1.638494	0.005961	1.632533	2.665165
15-Sep-00	1.322233	1.083806	0.238427	0.005961	0.232466	0.054040
22-Sep-00	0.188852	-0.859822	1.048674	0.005961	1.042713	1.087250
29-Sep-00	-0.907774	-0.761550	-0.146224	0.005961	-0.152185	0.023160
6-Oct-00	0.004238	-0.671947	0.676185	0.005961	0.670224	0.449200
13-Oct-00	1.150246	1.284690	-0.134444	0.005961	-0.140405	0.019714
20-Oct-00	1.474509	2.849314	-1.374805	0.005961	-1.380766	1.906516
27-Oct-00	0.267422	1.201318	-0.933896	0.005961	-0.939857	0.883332
3-Nov-00	0.715642	-2.174064	2.889706	0.005961	2.883745	8.315988
10-Nov-00	1.299205	0.145389	1.153816	0.005961	1.147855	1.317571
17-Nov-00	-1.170177	0.738378	-1.908556	0.005961	-1.914517	3.665374
24-Nov-00	-0.468022	1.662391	-2.130413	0.005961	-2.136374	4.564094
1-Dec-00	-0.001061	-0.042613	0.041552	0.005961	0.035591	0.001267
8-Dec-00	-0.644108	-0.125031	-0.519076	0.005961	-0.525037	0.275664
15-Dec-00	-0.606827	-0.494616	-0.112212	0.005961	-0.118173	0.013965
22-Dec-00	-2.868615	-0.271093	-2.597522	0.005961	-2.603483	6.778123
29-Dec-00	-2.531035	0.082477	-2.613512	0.005961	-2.619473	6.861640
5-Jan-01	3.256092	-0.082620	3.338712	0.005961	3.332751	11.107231

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WEEK ENDING	NSE 20 INDEX AVERAGE	BOTTOM 5 AVERAGE	DIFFERENCE	d^-	$(d - \bar{d})$	$(d - \bar{d})^2$
12-Jan-01	1.083449	-0.856599	1.940048	0.005961	1.934087	3.740692
19-Jan-01	-3.695487	-11.940599	8.245112	0.005961	8.239151	67.883613
26-Jan-01	-0.361873	0.105610	-0.467483	0.005961	-0.473444	0.224149
2-Feb-01	-0.510395	-0.457970	-0.052425	0.005961	-0.058386	0.003409
9-Feb-01	6.337295	23.988553	-17.651258	0.005961	-17.657219	311.777382
16-Feb-01	-0.664288	-3.089342	2.425054	0.005961	2.419093	5.852009
23-Feb-01	2.411835	2.380602	0.031233	0.005961	0.025272	0.000639
2-Mar-01	-1.054133	-3.935878	2.881745	0.005961	2.875784	8.270133
9-Mar-01	0.960702	-0.167260	1.127963	0.005961	1.122002	1.258887
16-Mar-01	-1.019625	-2.678806	1.659181	0.005961	1.653220	2.733137
23-Mar-01	-1.569413	-0.726015	-0.843397	0.005961	-0.849358	0.721409
30-Mar-01	-1.904233	0.018620	-1.922853	0.005961	-1.928814	3.720325
6-Apr-01	-1.672594	-1.429521	-0.243073	0.005961	-0.249034	0.062018
13-Apr-01	-0.795176	-1.191267	0.396091	0.005961	0.390130	0.152202
20-Apr-01	-0.327547	0.377327	-0.704874	0.005961	-0.710835	0.505286
27-Apr-01	-0.721786	-2.012953	1.291168	0.005961	1.285207	1.651756
4-May-01	-0.705083	-1.347709	0.642625	0.005961	0.636664	0.405341
11-May-01	-0.913531	3.165019	-4.078550	0.005961	-4.084511	16.683227
18-May-01	-0.755948	-0.348573	-0.407374	0.005961	-0.413335	0.170846
25-May-01	-1.471642	-1.094902	-0.376740	0.005961	-0.382701	0.146460
1-Jun-01	-0.774804	-0.927201	0.152397	0.005961	0.146436	0.021443
8-Jun-01	-1.169757	1.034460	-2.204217	0.005961	-2.210178	4.884887
15-Jun-01	-0.565592	-2.496887	1.931295	0.005961	1.925334	3.706910
22-Jun-01	-0.509525	-0.630112	0.120587	0.005961	0.114626	0.013139
29-Jun-01	0.879988	0.419703	0.460285	0.005961	0.454324	0.206410
6-Jul-01	1.731037	0.297874	1.433163	0.005961	1.427202	2.036906
13-Jul-01	0.622644	2.087493	-1.464850	0.005961	-1.470811	2.163284
20-Jul-01	-0.568931	-0.208256	-0.360675	0.005961	-0.366636	0.134422
27-Jul-01	0.141675	0.522708	-0.381033	0.005961	-0.386994	0.149765
3-Aug-01	-0.765338	-0.382266	-0.383072	0.005961	-0.389033	0.151347
10-Aug-01	-0.468618	-2.229417	1.760799	0.005961	1.754838	3.079455
17-Aug-01	-0.839335	-0.115952	-0.723383	0.005961	-0.729344	0.531943
24-Aug-01	-1.728363	-1.597912	-0.130451	0.005961	-0.136412	0.018608
31-Aug-01	-2.003406	-3.349349	1.345943	0.005961	1.339982	1.795552
7-Sep-01	-1.766312	-1.054737	-0.711575	0.005961	-0.717536	0.514858
14-Sep-01	-0.609730	-2.122929	1.513198	0.005961	1.507237	2.271764
21-Sep-01	-2.877522	-3.603056	0.725534	0.005961	0.719573	0.517786
28-Sep-01	-3.513956	-3.612340	0.098385	0.005961	0.092424	0.008542
5-Oct-01	-0.014631	-2.578321	2.563690	0.005961	2.557729	6.541979
12-Oct-01	-1.550566	-1.228495	-0.322071	0.005961	-0.328032	0.107605
19-Oct-01	1.371425	1.411067	-0.039643	0.005961	-0.045604	0.002080
26-Oct-01	2.841081	1.868005	0.973075	0.005961	0.967114	0.935310
2-Nov-01	2.984247	6.229267	-3.245020	0.005961	-3.250981	10.568874
9-Nov-01	-0.352975	-0.042912	-0.310063	0.005961	-0.316024	0.099871
16-Nov-01	-1.267328	-0.882318	-0.385010	0.005961	-0.390971	0.152858
23-Nov-01	-1.570894	-2.161574	0.590681	0.005961	0.584720	0.341897
30-Nov-01	-1.080777	-1.694637	0.613860	0.005961	0.607899	0.369541
7-Dec-01	-1.267522	-3.237541	1.970019	0.005961	1.964058	3.857525
14-Dec-01	-0.203014	-2.469571	2.266557	0.005961	2.260596	5.110294
21-Dec-01	-0.361714	-0.727065	0.365351	0.005961	0.359390	0.129161
Summation	4.676075	2.893627	1.782448		0.000109	1,278.842140

$$\bar{d} = \frac{1.782448}{299} = 0.005961$$

$$\text{Std deviation} = \left[\frac{1,278.842140}{299 - 1} \right]^{0.5} = 2.071573$$

$$t = \frac{0.005961}{2.071573 / (299)^{0.5}} = 0.049760$$

SECURITIES WEEKLY RETURNS
TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

APPENDIX F

TOP 5 COMPANIES						BOTTOM 5 COMPANIES							
WEEKEND	KPLC	BBK	KCB	NMG	FIRE	AVERAGE	WEEK END	KAKUZI	EABL	GWK	TOTAL	BBOND	AVERAGE
05-Apr-96	-2.747	-0.346	5.274	-5.991	-7.976	-2.357111	05-Apr-96	-4.670	6.950	-8.564	-0.470	-0.600	-1.470795
12-Apr-96	0.066	1.604	-11.008	3.624	-1.716	-1.485949	12-Apr-96	-1.176	-0.542	-2.439	-1.988	2.444	-0.740427
19-Apr-96	1.468	6.723	9.299	5.273	3.886	5.329646	19-Apr-96	2.976	-6.379	-1.000	-0.887	0.029	-1.052315
26-Apr-96	-1.780	-2.244	1.181	0.404	2.366	-0.014359	26-Apr-96	0.000	0.346	0.000	0.810	1.097	0.450652
03-May-96	-4.398	-1.122	0.071	0.969	1.132	-0.669565	03-May-96	3.683	0.647	0.000	6.336	0.577	2.248610
10-May-96	6.311	0.459	2.403	0.202	5.342	2.943285	10-May-96	6.380	1.979	11.930	1.296	-0.040	4.308871
17-May-96	-2.221	-1.244	-3.177	1.035	-1.197	-1.360883	17-May-96	-0.427	0.125	1.073	7.814	0.091	1.735125
24-May-96	2.771	-0.141	-4.259	0.335	-0.160	-0.290799	24-May-96	1.930	-0.265	0.000	-1.695	-0.165	-0.038801
31-May-96	2.675	0.914	-8.640	1.719	4.217	0.176842	31-May-96	0.461	1.262	3.691	-2.800	-1.097	0.303153
WEEKEND	KPL	KENAI	KCB	NMG	BBK	AVERAGE	WEEK END	SASINI	KAKUZI	TOTAL	GWK	BBOND	AVERAGE
07-Jun-96	0.692	1.627	6.101	1.108	-0.459	1.813730	2-Aug-96	-11.952	0.894	-2.500	-5.995	0.134	-3.883964
14-Jun-96	1.482	-5.542	2.371	7.791	-1.038	1.012674	9-Aug-96	4.786	0.028	-0.158	2.830	-0.134	1.470606
21-Jun-96	6.152	-4.786	-0.467	1.307	-1.826	0.076174	16-Aug-96	-0.369	-0.371	-3.659	1.529	-3.179	-1.209800
28-Jun-96	5.274	-0.585	-0.056	1.652	-1.003	1.056581	23-Aug-96	1.395	0.000	-0.331	0.952	-0.062	0.183300
05-Jul-96	3.740	-4.529	0.464	4.290	0.680	0.928913	6-Sep-96	-1.462	-5.946	-3.413	0.695	-0.017	0.390663
12-Jul-96	0.500	3.458	-1.379	0.347	-1.284	0.328454	13-Sep-96	-0.277	9.195	-2.332	0.781	0.043	1.554057
19-Jul-96	4.062	-2.556	0.266	2.510	0.469	0.950258	20-Sep-96	2.698	1.018	1.620	-0.806	0.010	0.908070
26-Jul-96	0.887	-3.057	5.733	-1.847	-1.414	0.060286	27-Sep-96	-0.017	-0.366	-2.229	0.783	-0.006	-0.366969
02-Aug-96	-0.460	-5.190	2.039	-1.711	2.301	-0.604268	4-Oct-96	-3.969	-0.643	0.538	0.000	0.621	-0.690627
09-Aug-96	-1.663	-4.930	-5.644	0.737	0.026	-2.294617	11-Oct-96	3.520	0.526	-1.119	3.909	-0.606	1.326041
16-Aug-96	-0.708	-1.137	-2.205	1.486	-2.474	-1.007237	18-Oct-96	2.001	0.000	-0.645	0.547	-0.034	0.373906
23-Aug-96	3.104	3.013	0.067	4.903	0.515	2.320681	25-Oct-96	1.730	0.524	0.026	0.000	0.023	0.460282
30-Aug-96	-4.640	6.062	2.496	-0.605	-0.621	0.538334	1-Nov-96	-1.569	0.416	-0.640	0.000	-3.955	-1.149545
WEEKEND	KPL	KCB	KENAI	BBK	UCHUMI	AVERAGE	8-Nov-96	1.986	0.891	-1.332	0.000	0.000	0.309043
6-Sep-96	1.870	-3.223	2.546	-5.173	-3.492	-1.494494	15-Nov-96	3.533	-0.591	-8.928	-0.563	0.000	-1.229809
13-Sep-96	4.326	-0.762	-4.846	-5.384	-1.260	-1.585412	22-Nov-96	1.932	0.591	0.741	3.397	3.941	2.120387
20-Sep-96	8.257	-1.607	-4.909	3.859	0.384	1.196762	29-Nov-96	2.282	0.047	0.325	-1.997	-0.481	0.035096
27-Sep-96	2.510	-2.699	-1.833	-2.419	2.168	-0.454615	6-Dec-96	2.510	0.396	0.792	-0.046	0.717	0.873576
WEEKEND	KPL	KCB	KENAI	BBK	NMG	AVERAGE	13-Dec-96	1.706	1.208	1.758	-0.709	0.000	0.792714
4-Oct-96	-4.877	8.232	-0.115	-2.329	0.017	0.185653	20-Dec-96	-1.058	-1.381	0.734	0.714	-5.144	-1.226854
11-Oct-96	8.430	2.465	-2.691	0.688	0.205	1.819624	27-Dec-96	9.852	0.000	2.114	0.264	1.024	2.650582
18-Oct-96	-3.834	-5.216	-1.370	0.152	0.038	-2.045976	3-Jan-97	-0.571	0.000	2.115	0.599	-7.754	-1.202167
25-Oct-96	1.675	0.916	-2.624	-1.941	-1.022	-0.599096	10-Jan-97	10.536	0.513	35.000	4.100	-4.733	9.083144
1-Nov-96	4.911	1.293	2.220	-1.144	2.001	1.856407	24-Jan-97	5.526	2.020	7.050	0.000	-0.664	2.866526
8-Nov-96	2.294	-0.314	0.892	0.250	-1.876	0.249205	WEEK END	EABL	SASINI	BBOND	GWK	TOTAL	AVERAGE
15-Nov-96	2.342	2.338	-5.426	0.468	1.804	0.305197	4-Apr-97	-4.008	2.284	-6.955	-2.962	1.947	-1.938890
22-Nov-96	3.541	4.453	-1.839	0.016	-0.647	1.104658	11-Apr-97	1.784	-1.494	-1.402	-1.209	-1.271	-0.718295
29-Nov-96	-0.147	7.270	-0.796	0.373	0.279	1.395930	18-Apr-97	-2.599	3.936	2.502	-0.290	-0.650	0.579746
6-Dec-96	3.527	19.429	-13.926	0.696	0.503	2.045787	25-Apr-97	-0.098	-3.052	-0.170	-0.052	0.357	-0.603305
13-Dec-96	-0.701	4.812	1.404	-0.061	1.009	1.292523	2-May-97	2.790	-0.669	1.617	0.714	1.234	1.137311
20-Dec-96	0.008	-8.356	9.766	0.784	-0.847	0.270963	9-May-97	-0.016	4.850	-0.680	-0.709	1.020	0.893076
27-Dec-96	0.440	-2.022	0.438	0.381	1.218	0.091095	16-May-97	-2.162	-4.385	-0.990	0.000	1.189	-1.269734
Average Mean Return for the Year 1996						0.335520	23-May-97	-0.373	0.321	0.553	-1.163	6.097	1.087094
WEEKEND	KPL	KCB	KENAI	BBK	DTK	AVERAGE	30-May-97	3.113	0.155	0.614	-0.269	0.580	0.838890
3-Jan-97	17.175	8.072	0.574	1.808	-0.477	5.430298	6-Jun-97	-2.815	2.283	-3.504	1.449	-0.339	-0.584995
10-Jan-97	1.567	6.779	9.464	5.581	1.311	4.940396	13-Jun-97	1.175	0.694	4.089	0.000	-6.188	-0.045926
17-Jan-97	95.615	2.069	11.369	13.428	1.780	24.852022	20-Jun-97	-1.959	3.907	-2.272	0.110	-3.429	-0.734601
24-Jan-97	-16.507	4.733	-4.040	-4.449	0.429	-3.966811	27-Jun-97	2.806	0.210	-3.930	0.940	1.064	0.218043
31-Jan-97	-3.664	-0.447	-13.744	-1.226	-0.953	-4.006782	WEEK END	KAKUZI	GWK	BBOND	SASINI	TOTAL	AVERAGE
7-Feb-97	21.442	1.266	-0.103	0.515	-3.927	3.838745	4-Jul-97	-5.602	0.810	2.096	3.734	-0.320	0.143830
14-Feb-97	23.347	1.555	2.664	3.074	0.002	6.128349	11-Jul-97	5.000	-1.134	2.145	-6.148	0.462	0.065206
21-Feb-97	-6.210	3.386	1.602	1.109	2.979	0.573122	18-Jul-97	1.317	1.388	-2.329	2.390	0.911	0.735350
28-Feb-97	-0.911	4.206	-3.963	-5.029	-1.043	-1.348052	25-Jul-97	-0.360	0.380	-3.338	0.626	-1.098	-0.757769
7-Mar-97	0.032	5.203	2.748	-2.190	-0.371	1.084332	1-Aug-97	0.000	0.605	6.457	-0.538	-0.972	1.110361
14-Mar-97	-1.055	-7.630	-2.897	0.434	0.484	-2.132542	8-Aug-97	2.896	-1.133	-0.927	-1.761	-5.210	-1.286703
21-Mar-97	-1.361	0.053	1.822	-0.743	0.913	0.136794	15-Aug-97	5.745	2.989	-1.231	1.194	1.429	2.025246
28-Mar-97	-2.241	-0.746	-4.609	-8.697	-0.666	-3.391783	22-Aug-97	7.439	4.062	4.835	6.603	-1.361	4.319763
WEEKEND	KPL	KCB	KENAI	BBK	DTK	AVERAGE	29-Aug-97	3.334	0.000	-3.162	4.819	-2.094	0.579335
4-Apr-97	4.290	1.460	-2.522	-0.745	6.717	1.839883	5-Sep-97	4.774	15.583	-2.578	3.041	-1.072	3.949311
11-Apr-97	0.573	0.138	0.515	-0.631	2.858	0.690652	12-Sep-97	20.871	22.055	0.806	5.848	2.628	10.441376
18-Apr-97	0.050	-1.997	-0.952	0.771	-0.248	-0.475134	19-Sep-97	1.791	8.923	0.363	0.680	-2.461	1.863244
25-Apr-97	1.875	-7.421	1.918	2.970	3.265	0.521452	26-Sep-97	-5.969	6.345	-0.349	-1.932	-1.459	-0.672856
WEEKEND	SCB	KCB	KENAI	BBK	DTK	AVERAGE	WEEK END	KAKUZI	GWK	BBOND	SASINI	TOTAL	AVERAGE
2-May-97	3.003	2.400	8.067	6.118	-2.816	3.354378	4-Jul-97	-5.602	0.810	2.096	3.734	-0.320	0.143830
9-May-97	1.263	4.565	-0.593	5.120	1.326	2.339565	11-Jul-97	5.000	-1.134	2.145	-6.148	0.462	0.065206
16-May-97	1.711	1.007	-0.638	-0.039	-0.373	0.333371	18-Jul-97	1.317	1.388	-2.329	2.390	0.911	0.735350
23-May-97	-0.302	0.607	-5.344	-2.560	1.644	-1.190981	25-Jul-97	-0.360	0.380	-3.338	0.626	-1.098	-0.757769
30-May-97	0.186	0.994	-2.932	0.885	2.509	0.328480	1-Aug-97	0.000	0.605	6.457	-0.538	-0.972	1.110361
6-Jun-97	0.987	3.016	2.019	-0.797	-1.295	0.785697	8-Aug-97	2.896	-1.133	-0.927	-1.761	-5.210	-1.286703
13-Jun-97	-0.160	4.176	11.407	0.134	-2.023	2.706845	15-Aug-97	5.745	2.989	-1.231	1.194	1.429	2.025246
20-Jun-97	1.244	12.303	-9.490	0.000	-1.699	0.471576	22-Aug-97	7.439	4.062	4.835	6.603	-1.361	4.319763
27-Jun-97	-0.425	5.878	12.799	-0.589	0.582	3.649253	29-Aug-97	3.334	0.000	-3.162	4.819	-2.094	0.579335
4-Jul-97	1.326	-0.390	-6.614	-0.606	-0.472	-1.351323	5-Sep-97	4.774	15.583	-2.578	3.041	-1.072	3.949311
11-Jul-97	5.107	-14.05											

SECURITIES WEEKLY RETURNS
TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001

APPENDIX F

TOP 5 COMPANIES						BOTTOM 5 COMPANIES								
WEEKEND	SCB	BAT	KENAIR	GWK	NIC	AVERAGE	WEEK END	BAMB	EABL	BBOND	SASINI	TOTAL	AVERAGE	
5-Mar-99	-1.483	7.876	-1.334	2.635	0.744	1.687738	5-Mar-99	-8.719	7.071	-0.148	-6.977	0.537	-1.647298	
12-Mar-99	0.897	5.301	0.112	-1.155	2.299	1.490861	12-Mar-99	0.332	-0.299	1.048	-1.268	24.879	4.938246	
19-Mar-99	0.910	-0.463	4.236	0.000	-3.279	0.280777	19-Mar-99	-0.826	1.582	0.182	1.093	-15.059	-2.605445	
26-Mar-99	-3.234	-5.662	1.758	0.000	5.122	-0.403208	26-Mar-99	0.000	8.731	0.000	-1.152	-7.221	0.071686	
2-Apr-99	2.664	2.220	-3.401	0.000	-2.716	-0.246670	WEEK END	BAMB	EABL	BBOND	KAKUZI	TOTAL	AVERAGE	
9-Apr-99	-2.762	0.885	1.342	0.000	-2.237	-0.554328	2-Apr-99	0.000	-1.920	-1.783	0.000	0.463	-0.648124	
16-Apr-99	-0.581	0.399	3.242	0.120	4.898	1.615523	9-Apr-99	0.000	-0.691	2.528	-15.837	8.801	-1.039803	
23-Apr-99	1.034	2.716	-4.876	1.193	0.959	0.205262	16-Apr-99	0.000	4.835	0.437	9.677	0.454	3.080700	
30-Apr-99	-0.329	10.453	2.331	-0.592	11.938	4.760026	23-Apr-99	0.000	-1.573	-0.311	-5.260	0.083	-1.412359	
WEEKEND	SCB	BAT	KENAIR	GWK	NIC	AVERAGE	30-Apr-99	-1.467	5.620	1.186	-4.383	0.614	0.313930	
7-May-99	3.672	0.848	3.672	0.000	-17.150	-1.791689	WEEK END	SASINI	EABL	BBOND	KAKUZI	TOTAL	AVERAGE	
14-May-99	-0.152	-1.646	-0.152	1.165	-2.541	-0.665076	7-May-99	-1.792	0.808	0.720	-1.568	0.536	-0.259177	
21-May-99	1.436	-0.240	1.436	-0.450	5.833	1.602985	14-May-99	-1.504	0.031	-0.578	0.000	2.357	0.061063	
28-May-99	-0.557	-4.163	-0.557	0.000	3.485	-0.358193	21-May-99	0.689	0.852	0.116	-2.218	-0.106	-0.133493	
4-Jun-99	0.771	1.916	0.771	0.000	0.167	0.724770	28-May-99	-10.106	-1.657	-0.308	-2.631	-3.929	-3.726017	
11-Jun-99	0.481	-0.028	0.481	0.704	-0.181	0.291509	4-Jun-99	0.004	2.687	0.981	7.083	4.065	2.964072	
18-Jun-99	2.583	-0.015	2.583	-0.699	-1.627	0.565116	11-Jun-99	2.386	-1.583	-0.163	-3.333	-1.984	-0.935373	
25-Jun-99	-2.132	-0.002	-2.132	1.046	-0.236	-0.691441	18-Jun-99	3.294	-0.269	0.102	3.773	2.608	1.901815	
WEEKEND	SCB	KPL	KENAIR	BAT	NIC	AVERAGE	25-Jun-99	0.000	-0.238	-0.102	0.000	-0.442	-0.156487	
2-Jul-99	1.485	-1.441	-1.622	-0.361	-0.690	-0.525819	WEEK END	BAMB	EABL	BBOND	GWK	TOTAL	AVERAGE	
9-Jul-99	1.604	-1.023	1.962	-4.128	5.320	0.747000	2-Jul-99	-0.989	0.534	-1.136	-0.338	0.069	-0.372118	
16-Jul-99	2.522	0.218	0.516	-6.634	1.643	-0.346893	9-Jul-99	1.768	1.557	1.142	-0.755	0.631	0.868423	
23-Jul-99	5.861	2.313	-15.073	-2.400	-0.830	-2.025726	16-Jul-99	12.613	0.482	0.007	-1.353	3.143	2.978275	
30-Jul-99	0.868	-2.190	0.021	-2.746	-4.198	-1.648839	23-Jul-99	-3.555	0.951	0.000	0.000	1.033	-0.314147	
6-Aug-99	-1.304	0.435	-2.025	-1.888	-3.087	-1.573579	30-Jul-99	0.661	0.330	0.000	0.000	1.937	0.585538	
13-Aug-99	0.990	-0.626	-1.215	-4.082	-4.692	-1.925070	WEEK END	BAMB	KAKUZI	BBOND	GWK	TOTAL	AVERAGE	
20-Aug-99	3.662	0.654	-4.021	2.686	0.403	0.676804	6-Aug-99	4.594	-2.419	0.170	0.000	-0.469	0.375248	
27-Aug-99	0.423	-1.319	-5.497	-0.612	3.055	-0.790095	13-Aug-99	-1.288	0.000	0.340	0.000	0.543	-0.081070	
WEEKEND	KCB	KPL	KENAIR	BAT	NIC	AVERAGE	20-Aug-99	0.368	0.000	-0.494	0.000	1.278	0.230486	
3-Sep-99	0.779	-3.004	0.618	1.914	3.066	0.674582	27-Aug-99	-0.400	0.000	-24.541	0.000	-0.077	-5.003571	
10-Sep-99	3.259	-4.726	-1.945	0.470	-2.555	-1.099460	WEEK END	BAMB	SASINI	BBOND	GWK	TOTAL	AVERAGE	
17-Sep-99	-6.288	-1.225	-0.770	3.288	7.072	0.415334	3-Sep-99	-2.544	0.303	0.000	0.000	2.126	-0.022955	
24-Sep-99	-3.502	-0.519	-1.029	1.713	-9.968	-2.661090	10-Sep-99	3.022	4.230	-14.639	-17.857	-0.011	-5.051040	
1-Oct-99	-4.594	-2.173	-9.844	0.731	4.591	-2.257780	17-Sep-99	-0.100	0.248	6.526	0.000	-0.427	1.249459	
8-Oct-99	2.190	-0.599	12.326	0.142	0.374	2.886489	24-Sep-99	-6.306	-2.265	-1.814	0.000	-3.398	-2.756654	
15-Oct-99	2.992	1.349	-0.420	-0.551	3.354	1.344695	1-Oct-99	-5.413	-1.487	1.292	0.000	-3.441	-1.809626	
22-Oct-99	-0.890	-1.951	-0.005	-0.348	1.531	-0.332665	8-Oct-99	0.753	0.000	1.674	-1.860	-3.434	-0.573131	
29-Oct-99	-0.275	-3.170	0.656	-0.429	-2.533	-1.150301	15-Oct-99	0.299	2.137	0.000	1.252	-1.870	0.363564	
5-Nov-99	-4.124	-11.399	-0.036	0.415	-0.515	-3.313761	22-Oct-99	-2.869	-2.974	0.970	0.000	1.710	-0.632373	
12-Nov-99	-3.113	-4.044	5.446	-8.584	0.959	-1.867305	29-Oct-99	-0.269	-2.020	-0.971	-3.741	2.914	-0.817193	
19-Nov-99	-11.098	1.109	5.138	-1.165	1.330	-0.937095	5-Nov-99	1.038	0.000	0.000	0.000	-0.075	0.192610	
26-Nov-99	-0.486	0.016	5.783	1.601	-2.935	0.795866	12-Nov-99	-0.914	0.000	2.647	2.424	0.286	0.888683	
3-Dec-99	11.385	1.674	8.949	3.619	-6.398	3.845840	19-Nov-99	-3.304	-8.317	-0.745	-2.944	0.003	-3.061287	
10-Dec-99	-1.103	1.882	3.342	-5.916	-0.937	-0.546473	26-Nov-99	6.357	-3.516	-1.059	-3.978	0.097	-0.419677	
17-Dec-99	5.721	7.517	-1.780	0.053	-0.224	2.257444	3-Dec-99	-2.727	-7.400	0.370	-8.324	0.020	-3.612131	
24-Dec-99	-8.008	3.726	2.031	1.118	-5.378	-1.302389	10-Dec-99	-0.154	-0.337	0.707	-3.387	0.497	-0.534425	
31-Dec-99	-4.494	0.326	-0.122	-0.421	5.701	0.197681	17-Dec-99	0.000	-0.165	-1.655	0.000	1.371	-0.089654	
7-Jan-00	2.241	-0.242	-1.947	0.476	1.587	0.422964	24-Dec-99	0.000	2.150	1.468	-0.922	-1.952	0.148928	
14-Jan-00	4.142	-0.363	0.282	0.070	0.247	0.875675	7-Jan-00	0.962	0.000	0.000	0.000	0.490	0.290300	
21-Jan-00	3.590	-0.118	-0.314	-3.016	-2.347	-0.441080	14-Jan-00	-0.952	0.000	0.000	0.000	-0.078	-0.206172	
28-Jan-00	0.348	1.013	-1.753	-1.085	-0.580	-0.411254	21-Jan-00	1.308	-8.620	-0.822	0.930	-0.445	-1.529735	
4-Feb-00	2.623	0.072	-1.609	0.073	0.149	0.261495	28-Jan-00	-0.673	8.048	0.173	1.075	1.895	2.063646	
11-Feb-00	-12.324	-0.720	-1.248	0.000	0.368	-2.784898	WEEK END	BAMB	SASINI	BBOND	KAKUZI	TOTAL	AVERAGE	
18-Feb-00	0.803	0.801	-0.742	0.073	1.904	0.567763	4-Feb-00	0.651	0.000	0.000	3.464	0.111	0.845284	
25-Feb-00	-2.546	-2.254	-16.011	1.186	-3.389	-4.602569	11-Feb-00	-0.875	-11.915	0.000	-0.154	-0.031	-2.595000	
3-Mar-00	0.493	2.729	11.690	16.595	-0.485	6.204232	18-Feb-00	0.729	-1.338	0.000	0.000	-2.381	-0.597766	
10-Mar-00	0.037	-3.605	1.267	12.624	2.734	2.611204	25-Feb-00	-0.953	-6.489	-6.115	0.000	1.565	-2.398460	
17-Mar-00	0.438	0.458	-0.619	0.934	7.325	1.706889	WEEK END	BAMB	SASINI	BBOND	DTK	TOTAL	AVERAGE	
24-Mar-00	-0.425	-2.602	0.621	-14.562	-3.312	-4.056095	3-Mar-00	0.038	0.000	-17.554	0.133	7.059	-2.064685	
31-Mar-00	-6.331	1.190	3.617	1.529	0.278	0.056715	10-Mar-00	0.269	-2.778	0.000	7.475	18.322	4.657585	
7-Apr-00	-6.154	-1.022	2.557	-1.130	-0.626	-1.275029	17-Mar-00	-0.230	0.024	22.286	-0.104	-14.507	1.493696	
14-Apr-00	4.358	-4.211	0.649	0.841	0.490	0.425540	24-Mar-00	3.576	2.833	-4.510	-2.509	-8.056	-1.733536	
21-Apr-00	6.854	-8.025	0.262	0.519	-1.374	-0.352664	31-Mar-00	3.898	-2.728	-4.277	-0.987	1.202	-0.578337	
28-Apr-00	1.235	-1.904	0.161	0.376	0.418	0.057028	WEEK END	BAMB	SASINI	BBOND	DTK	KAKUZI	TOTAL	AVERAGE
5-May-00	-6.796	0.929	3.067	-6.223	-0.324	-1.869193	7-Apr-00	-4.895	0.149	-7.802	-0.006	0.083	-2.494172	
12-May-00	-12.852	0.257	-1.555	0.283	0.743	-2.624873	14-Apr-00	1.315	-2.170	-4.677	-1.846	2.012	-1.072974	
19-May-00	15.941	-15.239	1.770	-0.498	-0.335	0.327840	21-Apr-00	-1.520	-14.689	-0.847	1.887	-1.399	-1.373597	
26-May-00	-0.367	0.443	-0.169	1.200	0.556	0.332433	28-Apr-00	-2.108	7.142	-0.523	-0.231	-3.344	0.187140	
2-Jun-00	2.917	-8.796	1.679	-0.478	1.332	-0.669009	5-May-00	1.923	0.000	0.000	-6.757	0.000	-0.966732	
9-Jun-00	-3.250	-15.650	3.800	-1.142	-1.257	-3.499778	12-May-00	5.547	5.230	-0.103	0.000	0.000	-2.134840	
16-Jun-00	-3.179	-0.762	0.462	-1.188	-0.825	-1.098741	19-May-00	0.322	5.412	-0.398	-18.694	-1.677	-3.006957	
23-Jun-00	-2.437	-0.101	-2.045	-1.863	-0.793	-1.447991	26-May-00	0.000	3.541	0.503	2.756	0.000	1.359711	
30-Jun-00	6.034	0.608	-1.155	-3.660	-0.918	0.181763	2-Jun-00	1.390	1.390	-3.128	1.144	0.000	0.990730	
7-Jul-00	1.020	0.102	-0.144	1.702	-15.884	-2.640740	9-Jun-00	0.281	-3.807	0.185	-0.485	0.000	-0.765095	
14-Jul-00	-6.379	1.875	-0.126	5.338	-8.683	-1.595005	16-Jun-00	1.227	0.000	-0.410	0.755	-0.746	0.165281	
21-Jul-00	1.663	-2.300	-2.423	-0.318	14.378	2.200099	23-Jun-00	-0.519	-4.201	-0.623	1.137	-3.759	-1.593247	
28-Jul-00	-6.768	2.500	0.347	1.174	9.826	1.415949	30-Jun-00	0.661	0.215	-1.361	-4.898	0.000	-0.776665	
4-Aug-00	-4.127	-3.312	-10.391	-0.498	-0.684	-3.802408	7-Jul-00	0.000	0.415	0.000	-0.506	0.000	0.184792	
11-Aug-00	-0.969	0.424	-0.082	0.050	3.576	0.599766	14-Jul-00	0.826	-0.306	-0.750	-1.353	-0.781	-0.472790	
18-Aug-00	0.400	0.844	3.303											

**SECURITIES WEEKLY RETURNS
TOP 5 AND BOTTOM 5 SECURITIES
FOR PERIOD APRIL 1999 TO DECEMBER 2001**

APPENDIX F

TOP 5 COMPANIES							BOTTOM 5 COMPANIES						
20-Oct-00	0.931	-4.881	1.913	1.068	-0.182	-0.230083	WEEK END	BAMB	SASINI	TOTAL	DTK	KAKUZI	AVERAGE
27-Oct-00	3.931	-24.646	0.087	0.409	0.008	-4.042162	4-Aug-00	0.063	-1.077	-1.448	-0.925	0.000	-0.677365
3-Nov-00	-4.316	20.927	-0.133	-1.039	-3.110	2.465825	11-Aug-00	0.031	0.770	2.404	0.452	0.000	0.731511
10-Nov-00	4.843	12.412	0.132	-0.340	-0.085	3.392399	18-Aug-00	-0.750	-0.632	3.787	0.000	0.000	0.480963
17-Nov-00	-0.328	2.350	-4.037	1.181	-5.017	-1.170153	25-Aug-00	0.787	-0.295	-0.171	-2.964	0.000	-0.528429
24-Nov-00	-0.111	2.705	-1.126	-1.407	-4.135	-0.814644	WEEK END	BAMB	SASINI	TOTAL	BBOND	KAKUZI	AVERAGE
1-Dec-00	0.159	2.839	0.598	1.042	0.391	1.005614	1-Sep-00	0.156	0.000	1.338	4.924	0.000	1.283609
8-Dec-00	-0.587	-2.258	1.699	-0.254	-3.811	-1.042271	8-Sep-00	-0.998	0.162	-1.656	-2.432	0.000	-0.984861
15-Dec-00	-2.327	0.587	1.731	-5.167	-2.692	-1.573793	15-Sep-00	1.008	2.907	-2.713	7.788	-3.571	1.083806
22-Dec-00	-17.356	-0.114	-0.586	-4.225	-10.111	-6.478338	22-Sep-00	0.561	-7.824	0.281	0.625	2.058	-0.859822
29-Dec-00	-11.929	-2.144	0.260	-10.022	-4.218	-5.610613	29-Sep-00	-0.589	-0.695	1.594	-0.149	-3.968	-0.761550
5-Jan-01	23.319	-11.401	1.371	4.798	3.873	4.392287	6-Oct-00	0.624	0.470	0.846	1.966	-0.671947	1.284690
12-Jan-01	4.243	2.997	-1.308	6.612	11.546	4.817913	13-Oct-00	1.519	5.664	-1.785	1.025	0.000	2.849314
19-Jan-01	-21.610	2.173	0.156	1.504	3.742	-2.806740	20-Oct-00	1.802	0.000	1.083	6.884	4.477	1.201318
26-Jan-01	-0.751	-1.616	1.861	-0.733	-2.032	-0.654389	27-Oct-00	-0.270	0.000	-0.118	2.384	4.011	-2.174064
2-Feb-01	1.203	-0.015	2.742	-0.508	-0.599	0.564705	3-Nov-00	1.384	0.000	0.893	-0.673	-1.324	0.145389
9-Feb-01	1.650	1.861	-2.054	0.433	1.481	0.674264	10-Nov-00	-1.306	0.000	0.301	3.056	-1.531	0.738378
16-Feb-01	-0.977	2.327	-0.016	0.092	-11.104	-1.935562	17-Nov-00	-0.301	0.735	0.582	-1.531	4.206	1.662391
23-Feb-01	1.317	29.470	0.694	-4.308	7.482	6.930947	24-Nov-00	-0.452	1.402	-0.763	6.055	2.070	
WEEKEND	KCB	KPL	KENAIR	BBK	NIC	AVERAGE	WEEK END	BAMB	DTK	TOTAL	BBOND	KAKUZI	AVERAGE
2-Mar-01	-2.088	-5.985	-0.357	-0.105	-4.226	-2.552091	1-Dec-00	-0.061	-0.858	-0.241	-0.237	1.184	-0.042613
9-Mar-01	19.233	-0.219	-0.282	3.722	-0.208	4.449297	8-Dec-00	0.485	0.997	-1.109	0.383	-1.382	-0.125031
16-Mar-01	11.532	-3.272	-12.629	3.588	3.130	0.469751	15-Dec-00	1.056	-2.822	-0.707	0.000	0.000	-0.494616
23-Mar-01	-1.172	-4.568	-2.532	-4.835	-8.817	-4.384611	22-Dec-00	0.746	-1.626	-0.136	-0.340	0.000	-0.271093
30-Mar-01	-9.840	-14.249	0.725	-1.363	-3.892	-5.723924	29-Dec-00	0.415	0.000	-0.602	0.600	0.000	0.082477
WEEKEND	KCB	KPL	KENAIR	KAKUZI	NIC	AVERAGE	5-Jan-01	-0.413	0.000	0.000	0.000	0.000	-0.082620
6-Apr-01	3.864	0.400	-1.813	0.000	-5.206	-0.550793	12-Jan-01	1.007	0.000	-5.537	0.247	0.000	-0.856599
13-Apr-01	0.250	-0.405	-0.045	-12.376	0.662	-2.382795	19-Jan-01	-0.616	2.922	-3.928	0.123	-58.205	-11.940599
20-Apr-01	0.093	-0.420	2.675	-0.762	-2.702	-0.223095	26-Jan-01	1.063	-0.757	-1.201	1.424	0.000	0.105610
27-Apr-01	6.076	-0.092	1.541	0.000	-0.384	1.428150	2-Feb-01	0.496	-2.256	-0.570	0.040	0.000	-0.457970
4-May-01	-1.040	-3.118	-3.122	0.000	-3.017	-2.059232	9-Feb-01	0.291	-6.025	-0.045	-0.899	126.621	23.988553
11-May-01	-0.397	-9.871	-0.381	0.000	-0.183	-2.166387	16-Feb-01	0.753	-1.029	-10.098	-10.341	5.269	-3.089342
18-May-01	4.455	-12.425	1.656	-2.969	0.010	-1.854413	23-Feb-01	-1.553	0.024	0.205	13.227	0.000	2.380602
25-May-01	11.039	-7.452	1.529	3.060	-0.234	1.588439	WEEK END	BAMB	DTK	TOTAL	SASINI	KAKUZI	AVERAGE
1-Jun-01	-2.794	-0.463	0.870	2.216	-5.519	-1.138084	2-Mar-01	-12.212	1.816	0.000	-7.320	-1.964	-3.935878
8-Jun-01	-4.933	0.439	1.899	0.000	-1.010	-0.720886	9-Mar-01	3.195	2.127	-10.218	6.325	-2.264	-0.167260
15-Jun-01	1.812	-0.267	8.430	-4.328	0.581	1.245624	16-Mar-01	-4.708	-3.852	-4.310	-0.524	0.000	-2.678806
22-Jun-01	-5.811	1.213	-0.723	2.259	3.871	0.161422	23-Mar-01	-5.212	0.009	8.246	-6.673	0.000	-0.726015
29-Jun-01	2.832	1.121	-0.983	0.000	2.946	1.183317	30-Mar-01	-0.036	0.376	2.515	9.693	-12.456	0.018620
6-Jul-01	3.103	0.953	-2.451	0.000	-0.087	0.303664	WEEK END	BAMB	BBOND	TOTAL	SASINI	GWK	AVERAGE
13-Jul-01	-2.178	-0.316	0.180	0.000	0.256	-0.411849	6-Apr-01	0.000	3.185	0.656	-8.077	-2.913	-1.429521
20-Jul-01	-4.251	-6.324	1.825	0.000	1.167	-1.516538	13-Apr-01	0.000	-5.760	2.608	-2.804	0.000	-1.191267
27-Jul-01	1.246	2.691	-0.867	-2.500	0.297	0.173418	20-Apr-01	0.000	-0.264	2.150	0.000	0.000	0.377327
3-Aug-01	-4.119	-3.057	1.085	-6.410	3.611	-1.777924	27-Apr-01	-3.571	-0.395	-2.611	-3.487	0.000	-2.012953
10-Aug-01	18.031	2.042	-8.011	-2.055	0.029	2.007275	4-May-01	-3.383	-1.494	1.423	-3.285	0.000	1.347709
17-Aug-01	-4.307	-1.751	-1.723	-2.098	-2.117	-2.399039	11-May-01	7.333	3.231	5.011	0.250	0.000	3.165019
24-Aug-01	-7.449	-8.793	1.046	0.000	0.307	-2.977650	18-May-01	0.002	-1.010	-2.485	-0.249	2.000	-0.348573
31-Aug-01	-5.489	-2.827	0.268	0.000	-3.302	-2.269966	25-May-01	0.000	0.000	-2.023	-1.614	-1.837	-1.094902
7-Sep-01	-0.422	-5.968	-0.196	-2.723	-7.471	-3.356074	1-Jun-01	0.000	-1.531	-2.861	-0.245	0.000	-0.927201
14-Sep-01	-0.079	-0.521	-0.555	0.000	0.556	-0.198837	8-Jun-01	0.000	2.447	-3.899	0.757	5.867	1.034460
21-Sep-01	-2.964	-10.993	-0.698	0.000	-0.077	-2.946293	15-Jun-01	0.000	1.152	-2.096	-8.671	-2.869	-2.496887
28-Sep-01	-6.431	1.930	-0.018	0.000	-12.768	-3.457460	22-Jun-01	-0.638	-0.689	-6.179	3.343	1.012	-0.630112
5-Oct-01	-0.449	12.314	-4.112	0.000	-0.948	1.360900	29-Jun-01	2.918	1.226	0.691	-3.571	0.835	0.419703
12-Oct-01	0.576	11.720	-16.741	0.000	-7.764	-2.441739	WEEK END	BAMB	BBOND	TOTAL	BAT	UCHUMI	AVERAGE
19-Oct-01	1.005	2.853	16.541	0.000	4.237	4.927399	6-Jul-01	-9.968	1.101	5.269	1.242	3.845	0.297874
26-Oct-01	8.500	2.526	6.714	6.470	11.408	7.123730	13-Jul-01	8.609	0.000	-0.058	1.841	0.046	2.087493
2-Nov-01	19.530	0.155	-2.951	2.069	3.613	4.483156	20-Jul-01	-2.411	1.405	1.703	-1.831	0.093	-0.208256
9-Nov-01	-2.922	-19.544	-8.358	0.000	13.129	-3.539139	27-Jul-01	-1.183	-1.542	1.769	3.665	-0.095	0.522708
16-Nov-01	-7.643	-17.608	8.470	0.000	2.653	-2.825591	WEEK END	BAMB	BBOND	TOTAL	NMG	UCHUMI	AVERAGE
23-Nov-01	-10.881	-2.991	2.434	0.000	-4.819	-3.251295	3-Aug-01	3.704	1.457	-4.528	-2.505	-0.039	-0.382266
30-Nov-01	-2.395	5.327	-2.167	0.000	1.151	0.383337	10-Aug-01	-2.433	-2.869	-5.295	0.798	-1.348	-2.229417
7-Dec-01	-3.551	8.879	0.942	0.000	0.055	1.264944	17-Aug-01	0.006	0.236	0.300	-0.875	-0.875	-0.115952
14-Dec-01	0.369	-0.856	-0.522	0.000	0.134	-0.174983	24-Aug-01	-6.509	-0.229	1.128	-2.310	-0.070	-1.597912
21-Dec-01	0.880	-1.112	0.456	0.000	0.072	0.059381	31-Aug-01	-1.539	-1.984	-5.513	-0.143	-7.168	-3.349349
							7-Sep-01	0.000	0.000	-4.765	0.602	-1.111	-1.054737
							14-Sep-01	-5.297	-3.882	0.000	-0.444	-0.992	-2.122929
							21-Sep-01	-0.677	-2.647	-11.367	-0.172	-3.152	-3.603056
							28-Sep-01	0.000	0.534	-4.721	-9.547	-4.327	-3.612340
							WEEK END	BAMB	BBOND	TOTAL	BAT	UCHUMI	AVERAGE
							5-Oct-01	-1.340	-3.955	-9.490	3.146	-1.253	-2.578321
							12-Oct-01	-5.112	-0.975	-0.651	2.240	-1.645	-1.228495
							19-Oct-01	0.000	0.571	-1.547	2.461	5.569	1.411067
							26-Oct-01	-3.435	0.568	-0.025	4.343	7.888	1.868005
							WEEK END	BAMB	BBOND	TOTAL	NMG	UCHUMI	AVERAGE
							2-Nov-01	3.428	1.867	9.972	9.137	6.742	6.229267
							9-Nov-01	0.264	0.568	10.366	6.190	-17.602	-0.042912
							16-Nov-01	-4.523	0.370	1.052	-1.689	0.378	-0.882318
							23-Nov-01	-4.916	0.000	-4.102	-1.943	0.154	-2.161574
							30-Nov-01	-0.111	-1.099	0.313	-2.130	-5.447	-1.694637
							WEEK END	BAMB	BBOND	TOTAL	SASINI	UCHUMI	AVERAGE
							7-Dec-01	-10.414	0.000	-0.312	-1.667	-3.796	-3.237541
							14-Dec-01	-1.103	0.000	-0.935	-6.736	-3.573	-2.469571
							21-Dec-01	0.000	-3.974	-0.544	-0.306	1.189	-0.727065

NAIROBI STOCK EXCHANGE 20 SHARE INDEX CONSTITUENT SECURITIES
WEEKLY MEAN RETURN
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

APPENDIX F1

WEEKEND	BBOND	GYK	KAKUJZ	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE
05-Apr-96	-0.600	-8.564	-4.670	0.023	-1.197		-5.991		-0.346	-0.138	5.274	-3.151	-2.480	-1.419	-0.235	0.000	6.950	-7.976	-2.747	-0.470	-1.541
12-Apr-96	2.444	-2.439	-1.176	1.511	-1.472		3.624		1.604	-2.158	-11.008	-2.748	-0.992	0.120	0.236	0.000	-0.542	-1.716	0.066	-1.988	-0.924
19-Apr-96	0.029	-1.000	2.976	14.737	1.893		5.273		6.723	-0.033	9.299	11.296	13.881	11.983	1.511	0.000	-6.379	3.886	1.468	-0.887	4.259
26-Apr-96	1.097	0.000	0.000	9.794	0.613		0.404		-2.244	0.572	1.181	-0.362	-1.689	7.384	-0.077	0.000	0.346	2.366	-1.780	0.810	1.023
03-May-96	0.577	0.000	3.683	-1.714	-0.058		0.969		-1.122	1.611	0.071	0.493	-3.526	-4.684	-0.426	0.000	0.647	1.132	-4.398	6.336	-0.023
10-May-96	-0.040	11.930	6.380	-1.229	-0.342		0.202		0.459	-0.071	2.403	0.589	6.031	-1.673	0.019	-4.293	1.979	5.342	6.311	1.296	1.961
17-May-96	0.091	1.073	-0.427	1.688	-1.433		1.035		-1.244	-1.491	-3.177	0.008	-2.765	0.372	0.019	0.000	0.125	-1.197	-2.221	7.814	-0.096
24-May-96	-0.165	0.000	1.930	-1.117	1.896		0.335		-0.141	-3.088	-4.259	2.444	2.515	7.945	0.330	-0.357	-0.265	-0.160	2.771	-1.695	0.496
31-May-96	-1.097	3.691	0.461	-3.281	-2.306		1.719		0.914	4.033	-8.640	3.960	-20.182	0.049	1.297	-1.534	1.262	4.217	2.675	-2.800	-0.865
07-Jun-96	1.587	0.000	2.797	-3.467	1.636	1.627	1.108		-0.459	1.724	6.101	1.944	29.266	1.766	-1.013	-1.718	1.964	3.289	0.692	-3.956	2.363
14-Jun-96	0.232	0.000	0.448	-3.080	-0.441	-5.542	7.791		-1.038	0.901	2.371	-1.210	0.337	0.289	3.822	-0.074	9.479	4.188	1.482	-5.857	0.742
21-Jun-96	-0.062	9.097	2.170	-0.590	7.458	-4.786	1.307		-1.826	3.404	-0.467	-1.706	1.824	2.739	-1.878	3.291	-0.882	2.125	6.152	1.168	1.502
28-Jun-96	0.367	2.606	-1.794	-0.062	2.446	-0.585	1.652		-1.003	0.386	-0.056	-1.546	-1.954	-2.713	-0.379	-5.655	-0.559	-1.807	5.274	0.782	-0.242
05-Jul-96	0.439	-2.482	-10.624	3.624	0.310	-4.529	4.290		0.680	1.733	0.464	1.522	0.908	-0.625	0.285	-2.312	2.450	3.410	3.740	-1.434	0.097
12-Jul-96	0.286	2.545	0.000	-0.590	-0.073	3.458	0.347		-1.284	-2.108	-1.379	-3.176	-3.391	-2.080	0.000	-1.978	-2.660	1.733	0.500	-0.794	-0.560
19-Jul-96	0.006	0.299	-0.088	0.000	-1.104	-2.556	2.510		0.469	-0.565	0.266	-0.732	1.794	-0.247	0.038	-1.557	4.860	-1.012	4.062	-1.194	0.276
26-Jul-96	0.028	2.003	0.000	0.000	-2.229	-3.057	-1.847		-1.414	0.129	5.733	-1.537	-1.610	-3.764	0.455	0.065	-1.991	-1.572	0.887	-2.130	-0.624
02-Aug-96	0.134	-5.995	0.894	-11.952	0.292	-5.190	-1.711		2.301	-0.982	2.039	0.478	-1.707	0.360	0.132	0.016	-2.383	-2.962	-0.460	-2.500	-1.537
09-Aug-96	-0.134	2.830	0.028	4.786	4.189	-4.930	0.737		0.026	-1.932	-5.644	1.897	-0.661	0.974	-0.679	-0.016	-0.061	9.379	-1.663	-0.158	0.472
16-Aug-96	-3.179	1.529	-0.371	-0.369	-1.085	-1.137	1.486		-2.474	-19.618	-2.205	-1.652	-4.642	-1.067	-1.575	0.806	-2.455	-11.302	-0.708	-3.659	-2.825
23-Aug-96	1.794	0.235	2.218	-2.279	-0.285	3.013	4.903		0.515	4.320	0.067	0.968	-2.805	0.154	-1.253	-0.704	-1.548	-5.663	3.104	-1.051	0.390
30-Aug-96	-0.062	0.952	0.000	1.395	2.288	6.062	-0.605		-0.621	0.365	2.496	-2.396	4.080	2.460	0.957	0.467	13.224	2.378	-4.640	-0.331	1.498
06-Sep-96	-0.017	0.695	-5.946	-1.462	-3.492	2.546	-2.297		-5.173	0.021	-3.223	-3.390	1.580	0.050	-2.360	1.524	-10.139	2.484	1.870	-3.413	-1.586
13-Sep-96	0.403	0.781	9.195	-0.277	-1.260	-4.846	1.074		3.859	0.884	-1.607	4.351	11.066	-7.339	-3.742	-1.315	-7.316	23.609	8.257	-2.332	0.234
20-Sep-96	0.011	-0.806	1.018	2.698	0.384	-4.909	1.080		-2.419	1.958	-2.699	-2.015	0.381	4.041	-5.069	4.301	9.185	-5.653	2.510	-2.229	0.166
27-Sep-96	-0.006	0.783	-0.366	-0.017	2.168	-1.833	0.129		0.688	-0.589	2.465	1.512	-0.812	-0.718	1.456	-2.754	-0.741	-0.878	8.430	-1.119	1.601
04-Oct-96	0.621	0.000	-0.643	-3.969	1.621	-0.115	0.017		0.152	-0.624	-5.216	0.979	-0.785	-0.207	-0.557	0.000	2.817	0.723	-3.834	-0.645	-0.323
11-Oct-96	-0.606	3.909	0.526	3.520	18.210	-2.691	0.205		-1.941	-2.968	0.916	-0.040	0.373	-2.589	0.366	2.848	5.011	-1.601	1.675	0.026	0.354
18-Oct-96	-0.034	0.547	0.000	2.001	-0.124	-1.370	0.038		-1.144	-1.434	1.293	0.555	-1.195	1.435	0.043	0.000	0.773	11.574	4.911	-0.640	0.837
25-Oct-96	0.023	0.000	0.524	1.730	6.017	-2.624	-1.022		0.250	-1.513	-0.314	0.498	1.179	-2.149	1.137	0.000	0.115	-13.364	2.294	-1.332	-1.037
01-Nov-96	-3.955	0.000	0.416	-1.569	0.627	2.220	2.001		0.468	-1.599	2.338	0.319	2.143	0.803	-0.488	0.000	0.773	11.574	4.911	-0.640	0.837
08-Nov-96	0.000	0.000	0.891	1.986	-8.388	0.892	-1.876		0.016	4.858	4.453	-0.276	0.275	0.053	0.533	2.046	3.697	12.085	3.541	0.741	2.032
15-Nov-96	0.000	-0.563	-0.591	3.933	-1.388	-5.426	1.804		0.373	-4.603	7.270	0.575	0.356	-0.850	-0.848	-1.251	2.754	-0.511	-0.147	0.325	0.137
22-Nov-96	3.941	3.397	0.591	1.932	-0.795	-1.839	-0.647		0.696	0.613	19.429	0.179	0.749	3.642	0.663	0.000	-3.784	-6.235	3.527	0.792	0.521
29-Nov-96	-0.481	-1.997	0.047	2.282	-0.173	-0.796	0.279		0.784	0.191	-8.356	1.502	-1.491	-0.152	0.404	-0.763	-6.752	-1.935	0.008	0.734	-0.266
06-Dec-96	0.717	-0.046	0.396	2.510	-0.525	-13.926	0.503		-0.061	-4.619	4.812	0.967	-0.176	1.809	-0.064	0.000	7.934	-0.079	-0.701	1.758	1.110
13-Dec-96	0.000	-0.709	1.208	1.706	4.884	1.404	1.009		1.808	-3.169	8.072	1.540	2.939	3.333	0.021	0.123	1.850	8.129	17.175	2.114	2.941
20-Dec-96	-5.144	0.714	-1.381	-1.058	8.718	9.766	-0.847		5.581	0.491	6.779	6.823	1.666	8.834	3.936	1.414	-1.244	-3.970	1.567	2.115	2.021
27-Dec-96	0.000	-0.709	0.000	-2.673	5.402	0.438	1.218		13.428	17.355	2.069	13.636	8.998	35.157	20.236	0.000	4.487	4.603	95.615	35.000	14.995
03-Jan-97	1.024	0.264	0.000	9.852	0.700	0.574	-0.477		-4.449	12.303	4.733	-5.786	7.492	-2.665	5.537	3.636	-0.341	0.851	-16.507	7.050	0.863
10-Jan-97	-7.754	0.599	0.000	-0.971	1.758	9.464	1.311		-1.226	-11.360	-0.447	-2.875	1.533	-7.106	-0.128	2.339	5.688	9.208	-3.664	-5.469	-2.308
17-Jan-97	-4.733	4.100	0.513	10.536	10.761	11.369	1.780		0.515	0.149	1.266	3.932	0.378	-0.037	-3.614	1.814	-4.317	-0.285	21.442	-9.767	0.642
24-Jan-97	-0.664	0.000	2.020	5.926	0.871	-4.040	0.429		3.074	-6.064	1.555	-0.694	-0.216	6.420	-5.450	0.772	-0.090	0.057	23.347	-4.994	1.697
31-Jan-97	0.607	-0.226	-0.494	-12.751	-2.780	-13.744	-0.953		1.109	-1.146	3.386	2.100	-6.429	30.796	-17.874	3.286	8.545	0.004	-6.210	-1.942	1.453
07-Feb-97	0.631	0.227	0.453	10.829	-7.392	-0.103	-3.927		-5.029	9.036	4.206	-4.207	-1.319	-5.953	-1.160	-0.243	10.916	-1.219	-0.911	-1.944	-0.077
14-Feb-97	-0.020	0.850	0.063	0.512	10.459	2.664	0.002		-2.190	-18.360	5.203	-12.913	2.179	7.528	3.267	1.351	-6.522	2.091	0.032	-2.866	-1.060
21-Feb-97	-0.060	0.120	0.967	0.000	6.383	1.602	2.979		0.434	1.896	-7.630	-1.514	2.637	-1.352	-0.295	-4.000	-3.411	-0.176	-1.055	-17.596	-2.303
28-Feb-97	0.567	0.000	0.561	2.116	-1.580	-3.963	-1.043		-0.743	-0.538	0.053	0.259	-0.383	0.435	0.000	0.000	0.461	-3.880	-1.361	0.272	-0.440
07-Mar-97	0.000	-0.524	1.244	-0.050	-1.985	2.748	-0.371		-8.697	-10.513	-0.746	-0.335	-1.485	1.425	-1.396	-0.736	5.530	-16.767	-2.241	3.528	-2.230
14-Mar-97	-4.863	-0.460	-2.154	7.062	-8.859	-2.897	0.484		-0.745	6.717	1.460	-2.801	3.978	-5.546	-0.429	0.742	-4.008	-2.172	4.290	1.947	0.457
21-Mar-97	-4.686	-0.293	0.394	-5.087	-5.002	1.822	0.913		0.631	2.858	0.138	-2.295	0.975	1.974	-0.431	0.000	1.784	-3.153	0.573	-1.271	0.115
28-Mar-97	-4.068	0.000	0.000	-0.227	-0.373	-4.609	-0.666		-0.771	-0.248	-1.997	-2.396	-1.585	0.528	-0.476	-2.778	-2.599	5.692	0.050	-0.650	0.842
04-Apr-97	-6.955	-2.962	0.699	2.284	4.880	-2.522	9.831		6.118	-2.816	2.400	3.003	0.109	1.967	-0.739	-0.347	2.790	0.203	-0.022	1.234	1.857
11-Apr-97	-1.402	-1.209	-0.673	-1.494	0.754	0.515	5.178		5.120	3.260	4.565	1.263	4.826	1.660	0.920	1.103	-0.016	9.584	5.150	1.020	2.364
18-Apr-97	2.502	-0.290	0.000	3.936	-0.134	-0.952	16.633		-0.039	-0.373	1.007	1.711	1.368	-3.698	-0.868						

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WEEKEND	BBOND	GYK	KAKUZ	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE	
13-Jun-97	4.089	0.000	12.050	0.694	0.000	11.407	10.302	-0.079	0.134	-2.023	4.176	-0.160	0.983	-0.177	-3.148	0.451	1.175	-1.206	-1.374	-6.188	1.555	
20-Jun-97	-2.272	0.110	-1.127	3.907	0.000	-9.490	4.159	3.983	0.000	-1.699	12.303	1.244	1.434	1.089	2.138	6.553	-1.989	11.402	3.098	-3.429	1.571	
27-Jun-97	-3.930	0.940	0.652	0.210	-3.620	12.799	-0.591	2.453	-0.589	0.582	5.878	-0.425	4.372	0.025	-1.495	0.000	2.806	-11.066	-1.591	1.064	0.424	
04-Jul-97	2.096	0.810	-5.602	3.734	-2.600	-6.614	1.248	0.330	-0.606	-0.472	-0.390	1.326	13.137	-0.225	0.000	0.000	-3.890	-1.155	1.422	-0.320	0.111	
11-Jul-97	2.145	-1.134	5.000	-6.148	-0.400	-7.487	3.186	-1.153	-0.230	0.022	-14.053	5.107	-13.762	3.640	-0.564	-2.542	0.035	17.366	2.531	0.462	-0.399	
18-Jul-97	-2.329	1.388	1.317	2.390	3.731	-4.227	-12.007	-0.261	-0.421	-0.143	-2.455	0.062	1.012	-2.979	0.283	-1.351	0.207	-7.317	-2.650	0.911	-1.242	
25-Jul-97	-3.338	0.380	-0.360	0.626	-1.161	14.070	11.606	-0.068	-3.421	-0.082	2.050	-3.988	2.274	0.424	-1.913	2.740	-0.211	2.185	0.214	-1.098	1.047	
01-Aug-97	6.457	0.605	0.000	-0.538	-1.834	-7.689	-5.902	0.149	-0.945	-0.009	-4.773	-2.229	0.373	1.665	0.953	-2.333	-1.161	-4.474	-0.813	-0.972	-1.173	
08-Aug-97	-0.927	-1.133	2.596	-1.761	0.654	-2.887	6.866	-0.049	0.769	-0.637	-4.201	-3.781	-16.462	-3.007	-1.888	0.341	-2.856	-5.319	-6.336	-5.210	-2.247	
15-Aug-97	-1.231	2.989	5.745	1.194	-0.624	3.041	1.563	0.014	2.587	-2.485	1.076	1.122	2.936	6.050	-1.365	1.361	1.029	-3.535	-0.511	1.429	1.118	
22-Aug-97	4.835	4.082	7.439	6.603	2.628	-2.163	0.697	-1.207	-2.136	-3.275	1.905	5.057	-1.846	1.711	-2.473	-2.685	-1.018	-0.349	2.205	-1.361	0.933	
29-Aug-97	-3.162	0.000	3.334	4.819	1.411	18.261	0.253	-9.412	-0.127	-1.374	0.035	-2.501	6.486	5.422	-2.303	-3.448	-6.676	-6.182	2.657	-2.094	0.270	
05-Sep-97	-2.578	15.583	4.774	3.041	0.474	-18.745	1.573	1.526	-2.129	-6.166	1.181	1.108	-3.901	-0.067	-1.572	1.157	6.598	8.258	-0.188	-1.072	0.443	
12-Sep-97	0.806	22.055	20.871	5.848	0.229	0.777	2.585	9.478	0.980	0.321	-0.347	-1.835	4.499	-0.044	-2.057	0.000	-0.375	-10.528	-0.439	2.628	2.772	
19-Sep-97	0.383	1.791	0.891	0.680	1.942	10.451	0.133	-1.544	0.599	-1.940	-0.250	-4.419	3.565	-6.480	-1.655	-1.144	-1.963	1.694	-1.091	-2.461	0.361	
26-Sep-97	-0.349	6.345	-5.969	-1.932	-1.743	0.779	0.124	0.195	0.340	-2.621	-0.114	-0.051	-1.865	-2.682	-1.306	1.429	-10.170	-2.431	2.138	-1.459	-1.067	
03-Oct-97	0.192	1.005	-3.880	1.827	-2.851	2.435	4.894	-1.010	0.085	-0.474	-7.086	0.853	-11.420	-0.853	-4.378	0.000	-0.788	-1.945	8.850	-0.788	-0.767	
10-Oct-97	0.765	0.459	0.000	-4.785	-0.391	-14.869	-3.113	-0.189	0.833	-3.095	-1.828	0.124	0.035	-12.568	-0.160	-0.563	0.674	0.004	11.086	-3.955	-1.539	
17-Oct-97	0.668	-5.396	-2.524	-0.085	-2.492	-0.734	-1.146	-3.304	1.862	0.251	-11.322	-1.846	2.204	-12.124	1.466	-0.850	9.842	-3.038	0.430	-0.894	-1.450	
24-Oct-97	-2.352	5.000	0.000	-1.876	1.821	-3.579	1.113	-8.184	-0.206	-1.953	4.193	-1.030	3.519	-1.184	1.366	0.000	-13.815	-4.595	-7.560	-2.178	-1.575	
31-Oct-97	-0.831	-6.667	0.000	0.066	-0.280	-1.036	-1.193	-5.222	-0.882	-3.810	4.979	0.419	-2.873	19.145	-0.026	0.000	2.410	-4.781	-0.807	-4.109	-0.275	
07-Nov-97	1.481	0.000	-4.138	-2.712	-4.065	0.030	0.686	-0.797	-0.542	1.267	3.016	0.316	0.494	-1.631	0.544	-1.757	3.734	8.272	-4.506	0.151	-0.098	
14-Nov-97	0.000	0.000	0.000	3.528	-2.993	-0.841	1.669	0.992	-1.369	0.366	-11.349	-2.406	-1.106	-9.701	0.877	0.000	0.000	0.274	4.111	-11.644	-0.369	-1.461
21-Nov-97	0.325	0.000	-30.358	-1.805	4.945	-0.825	1.121	-1.269	-4.095	-0.193	-7.318	-1.882	5.259	-4.714	-0.920	0.000	3.736	-10.746	-9.942	1.199	-2.994	
28-Nov-97	-1.039	-31.369	-4.816	-3.529	-1.706	1.128	0.174	0.715	5.067	-3.907	0.966	5.969	-10.424	-2.634	-3.225	1.789	-0.051	2.109	10.750	-0.503	-1.727	
05-Dec-97	-7.586	1.753	2.019	-1.101	0.705	0.547	-1.404	0.087	4.513	-0.932	-1.452	1.177	0.233	14.946	-0.080	-2.100	-2.715	3.028	3.964	1.467	0.853	
12-Dec-97	0.818	0.000	-1.819	6.877	-1.080	1.705	-0.028	0.933	2.529	0.299	2.551	-1.078	5.098	0.459	0.107	-5.151	0.899	0.118	-2.855	0.951	0.567	
19-Dec-97	-0.514	1.674	0.000	-0.038	3.792	0.797	0.049	0.744	-0.853	-4.287	2.741	1.265	1.958	-2.800	-0.080	0.692	-0.004	3.656	8.145	0.251	0.859	
26-Dec-97	0.000	2.994	4.020	0.000	1.938	3.000	0.138	-0.576	1.284	0.000	1.638	0.371	0.747	0.000	0.027	0.000	-1.022	0.000	0.000	0.000	0.728	
02-Jan-98	0.000	0.000	0.000	0.000	0.000	-1.328	1.065	0.000	-1.202	4.961	-2.025	3.288	-1.961	4.468	-1.867	0.000	0.000	0.000	0.000	0.709	0.305	
09-Jan-98	12.018	-0.233	0.000	-1.635	4.001	-0.271	-0.873	0.319	2.262	-0.089	2.754	1.711	0.967	4.080	1.902	0.000	-1.140	0.193	4.315	0.000	1.514	
16-Jan-98	6.433	4.350	0.000	1.622	19.282	16.592	1.102	8.020	3.337	4.199	13.457	4.727	1.892	19.194	0.000	-0.688	2.718	2.358	7.360	3.882	5.994	
23-Jan-98	-0.684	0.000	0.000	0.503	5.119	4.678	0.297	4.359	0.726	0.942	-1.033	0.176	0.599	-0.839	0.027	0.000	5.131	7.959	0.858	16.671	2.274	
30-Jan-98	-0.727	13.551	14.583	0.430	-14.701	-1.841	0.708	21.372	-3.082	-1.170	-4.255	-1.451	-0.818	-4.758	0.027	0.000	-2.713	9.497	-2.045	9.444	1.603	
06-Feb-98	-0.771	8.199	0.909	-2.412	-2.101	-15.312	0.161	-18.331	-1.551	-3.374	-3.213	-3.630	-0.055	-3.939	1.333	0.000	1.317	2.408	-3.347	-8.864	-2.629	
13-Feb-98	1.352	0.927	0.000	-2.299	3.944	2.224	1.131	2.058	4.454	-0.620	-0.785	-0.716	-0.287	0.000	-1.131	4.446	-1.557	-12.866	4.085	-5.733	-0.069	
20-Feb-98	-0.100	0.000	2.703	9.270	-0.639	3.849	0.385	0.213	2.132	0.475	-0.429	-2.755	0.918	-0.100	0.505	-1.311	-0.553	-2.258	2.045	-1.484	0.643	
27-Feb-98	-5.334	9.350	12.214	23.091	0.497	-3.441	0.531	1.866	5.298	3.318	-0.884	-1.956	2.261	-19.820	-0.371	3.358	1.030	25.757	0.095	1.798	2.933	
06-Mar-98	-4.289	0.247	0.841	-0.899	1.404	-0.925	-0.419	1.562	-1.611	-1.652	0.656	-8.221	0.213	12.297	0.133	0.000	0.169	8.497	0.475	-0.268	0.409	
13-Mar-98	-2.643	3.523	-10.853	-13.974	4.291	-1.588	0.160	-0.206	0.801	-0.565	-4.550	2.437	-5.363	7.393	-0.504	-0.361	0.946	-3.999	-0.568	-4.441	-1.503	
20-Mar-98	4.315	3.236	11.927	-4.097	-3.655	-1.270	1.785	-0.403	-7.551	-0.266	-4.399	-0.348	3.074	3.494	-9.440	1.304	-0.135	-19.836	-0.094	-5.565	-1.396	
27-Mar-98	0.083	2.663	3.986	37.168	-5.248	-3.912	5.363	-0.648	-1.328	-1.401	-6.987	0.417	-3.732	0.025	-0.854	-1.845	0.115	11.724	-4.912	-3.366	1.366	
03-Apr-98	0.000	1.850	-2.710	-1.515	-5.554	11.927	1.395	-15.380	-1.896	0.385	-0.050	2.486	-4.219	-0.150	0.059	0.568	-0.175	-0.441	-3.118	-3.349	-0.994	
10-Apr-98	-3.367	13.845	-0.168	-10.991	-4.720	-10.175	34.048	0.183	-0.222	-9.451	2.043	0.500	-2.853	-13.020	-0.712	0.000	-8.702	-1.400	-4.598	-5.831	-1.280	
17-Apr-98	1.759	0.756	0.000	-5.916	2.929	-0.265	2.068	2.019	-2.239	0.863	3.659	-2.865	-0.934	-7.887	0.030	0.000	5.355	-5.005	-2.934	-6.335	-0.612	
24-Apr-98	-2.169	0.513	0.000	-2.420	1.253	9.824	0.662	0.495	-2.343	0.805	-3.428	-5.282	-4.086	-0.406	-1.046	-0.725	-0.014	-2.330	-1.250	0.447	-0.575	
01-May-98	2.148	-3.168	-7.692	-4.140	0.670	-9.953	1.431	-1.595	0.288	0.580	-0.311	-1.688	-18.732	4.456	0.302	-0.730	-1.445	-4.566	0.461	-3.335	-2.351	
08-May-98	-2.103	-4.960	0.000	2.095	-0.375	-0.646	1.337	-0.259	-1.272	6.089	-0.017	-0.557	-2.105	-7.540	-0.572	0.000	-1.556	7.066	-0.274	-2.614	-0.413	
15-May-98	-0.381	6.312	0.000	-1.245	0.831	12.553	0.538	-10.130	0.083	0.666	-0.320	-0.348	0.528	1.917	0.000	-3.765	-14.201	-4.195	3.201	-1.729	-0.484	
22-May-98	2.609	0.264	1.667	0.416	2.040	-11.503	-0.102	-3.452	2.435	1.174	-8.299	7.329	5.198	4.909	2.059	-2.017	2.103	-0.732	2.183	-4.296	0.199	
29-May-98	1.967	-0.530	-1.639	5.190	9.647	-0.060	0.420	7.228	5.890	0.732	5.812	-1.807	19.998	0.425	0.030	2.823	11.535	-1.342	0.742	0.465	3.353	
05-Jun-98	0.532	1.338	0.000	1.686	0.754	0.671	-0.642	6.757	6.417	-0.297	4.728	3.548	-3.770	5.991	-0.059	0.410	9.076	1.246	2.155	-1.818	1.936	
12-Jun-98	4.574	-2.157	8.333	3.912	-5.906	-2.981	46.528	-0.632	2.014	3.387	1.268	4.683	-1.230	-0.057	0.000	0.000	1.000	0.047	4.413	1.985	3.459	
19-Jun-9																						

NAIROBI STOCK EXCHANGE 20 SHARE INDEX CONSTITUENT SECURITIES
WEEKLY MEAN RETURN
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GWAK	KAKUZ	SASINI	UCHUMI	KENAR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE
21-Aug-96	-0.534	0.000	5.354	-2.209	2.815	1.457	-1.462	0.020	-0.303	0.091	-1.095	-1.707	-6.086	-2.310	2.841	0.000	-2.314	-0.549	-0.429	0.192	-0.311
28-Aug-96	0.136	0.403	0.449	-2.528	-0.659	2.279	2.469	0.461	0.633	-0.005	-1.112	0.879	-0.397	5.507	1.635	-2.857	0.728	0.550	-1.306	2.904	0.508
04-Sep-96	3.306	-0.264	1.373	2.576	1.018	-14.566	0.207	-2.674	0.465	-6.872	-0.327	-1.527	-15.990	-6.557	-0.693	0.000	-0.011	-5.876	-0.006	-1.863	-2.414
11-Sep-96	-2.372	-0.137	-1.133	-1.289	0.548	-1.150	1.121	-12.953	-2.917	1.061	0.061	5.370	12.792	3.580	0.335	0.000	-0.039	-5.056	-0.763	1.141	-0.090
18-Sep-96	-0.155	0.382	1.069	2.420	0.075	0.852	0.408	0.467	0.181	2.005	-5.234	0.464	-5.476	3.699	1.475	0.000	-0.759	-0.034	-1.215	-4.213	-0.180
25-Sep-96	-0.236	-0.380	1.382	-0.799	2.510	0.646	-0.672	-0.352	0.322	2.358	-2.924	-5.760	-5.074	-6.067	2.962	0.676	-7.117	-0.218	-0.879	-1.268	-1.044
02-Oct-96	-1.122	1.538	-7.889	3.583	-2.904	0.699	-0.189	0.760	0.603	1.572	-2.384	-1.649	-0.079	-0.639	1.172	2.220	1.763	0.661	-4.725	-3.341	-0.517
09-Oct-96	0.943	0.234	0.000	-1.232	-1.125	0.852	-9.955	2.138	0.561	-2.472	-5.834	0.610	-0.353	-0.893	3.423	0.029	-0.075	2.765	0.722	-2.377	-0.602
16-Oct-96	0.332	0.281	0.000	-2.631	0.658	-0.081	-6.048	1.360	0.228	-2.134	-0.912	-1.863	0.626	4.108	0.229	0.714	-4.283	-3.473	6.246	1.436	-0.260
23-Oct-96	-1.707	-0.505	-3.281	0.107	2.917	0.456	4.962	0.269	-0.671	3.841	0.966	-0.274	-0.675	-3.081	2.083	0.000	-1.370	-0.127	-1.168	-0.422	0.116
30-Oct-96	-3.906	-0.009	3.246	-0.595	1.663	0.902	8.394	-0.917	0.331	1.151	-1.549	0.178	-1.795	0.000	1.916	0.000	-1.273	-0.368	-0.227	-4.357	0.139
06-Nov-96	-3.271	0.099	0.000	0.598	-1.094	1.471	0.790	0.260	0.610	2.075	0.703	1.077	2.562	-1.250	0.903	0.681	-5.171	-3.867	-0.413	1.895	-0.067
13-Nov-96	-7.675	7.147	-2.005	-3.949	-2.750	-0.923	0.357	-3.618	0.303	2.137	1.402	0.347	-11.714	-8.101	-1.234	0.000	8.947	-1.610	-0.862	-4.886	-2.065
20-Nov-96	-3.288	0.132	-0.706	-2.829	-6.171	0.403	-0.198	8.183	-0.013	-0.079	0.668	0.779	-1.193	-1.614	1.249	0.000	1.283	1.666	-0.312	0.485	-0.078
27-Nov-96	-0.538	0.633	-2.332	0.543	-7.728	-0.408	1.911	-4.167	0.503	-1.563	-0.517	1.279	-3.338	5.240	0.411	-1.381	0.966	-1.828	-0.567	0.636	-0.612
04-Dec-96	6.121	0.000	2.550	-8.326	2.036	-0.104	1.365	-0.725	2.730	-2.244	-6.610	0.916	3.679	-0.760	-0.337	1.514	0.000	-0.886	0.038	-4.052	-2.754
11-Dec-96	1.027	3.235	0.360	8.375	3.681	2.104	1.907	4.833	5.473	3.211	-5.035	2.301	-0.715	-0.383	6.721	0.675	0.318	-0.324	1.181	0.579	1.976
18-Dec-96	1.102	-3.133	1.585	0.110	8.747	0.167	-0.515	4.548	9.095	6.832	-0.161	4.874	6.393	2.884	4.554	-0.461	4.506	0.179	2.904	9.171	3.169
25-Dec-96	7.124	0.000	0.787	0.000	8.397	1.297	7.990	1.463	7.754	0.000	12.672	13.478	8.848	31.988	10.769	0.000	9.462	6.232	2.698	2.328	6.667
01-Jan-99	1.546	4.412	0.000	-0.229	-2.981	7.354	-1.037	6.833	-3.883	-4.817	3.872	5.695	8.146	1.925	8.862	0.000	17.119	0.812	1.619	17.420	3.633
08-Jan-99	0.113	-0.704	0.714	0.000	-1.444	0.644	1.457	6.857	3.324	4.506	0.237	-0.215	3.698	0.000	3.109	0.000	0.000	0.000	3.860	9.236	1.770
15-Jan-99	0.000	-1.587	0.000	5.218	2.395	6.097	3.473	11.270	2.168	1.461	0.216	0.568	15.631	3.722	2.754	-0.197	-12.159	11.722	5.219	0.477	2.922
22-Jan-99	-0.176	4.697	0.000	-0.482	0.393	-3.324	0.246	7.386	0.785	1.965	9.855	-3.533	-10.607	4.205	0.611	1.309	1.131	19.107	10.024	11.720	2.766
29-Jan-99	0.176	0.000	0.000	0.621	-1.159	4.215	-0.881	-14.880	-6.604	8.145	-6.424	1.440	-5.749	-7.222	-1.062	0.694	4.487	-6.709	-6.616	-1.067	-1.930
05-Feb-99	-0.472	-1.569	0.000	-4.849	-1.533	-6.079	-4.524	-13.430	-1.019	1.620	-0.103	-10.992	-9.393	2.327	-7.378	4.248	-7.247	-0.010	-3.861	-7.529	-3.590
12-Feb-99	-0.163	-4.873	-0.405	-0.024	2.263	-10.495	0.020	6.263	6.489	0.305	-0.050	0.586	7.655	-1.408	-10.210	-0.542	2.021	-4.647	-0.259	-4.949	-0.621
19-Feb-99	0.071	1.447	0.000	-4.786	2.212	6.102	0.791	2.386	0.029	2.163	2.740	1.838	0.910	-7.166	-0.307	-0.226	-0.715	-1.249	-0.005	-7.099	-0.643
26-Feb-99	0.191	0.000	0.467	-2.957	2.621	-3.159	0.726	-7.664	-1.640	1.200	-0.095	3.392	-1.935	-2.307	-17.160	0.107	1.533	0.398	-1.388	-6.039	0.031
05-Mar-99	-0.148	2.635	2.775	-6.977	2.706	-1.334	0.999	-2.518	-2.868	0.236	-6.177	-1.483	0.744	-8.719	7.876	-18.207	7.071	0.089	0.944	0.537	-1.091
12-Mar-99	1.048	-1.155	-2.479	-1.268	2.588	0.112	0.568	6.932	-2.289	0.000	-6.928	0.897	2.299	0.332	5.301	13.988	-0.299	-4.859	-0.375	24.879	1.965
19-Mar-99	0.182	0.000	-0.789	1.093	1.425	4.236	-1.360	1.168	-2.018	0.125	0.720	0.910	-3.279	-0.826	-0.463	0.357	1.582	-0.072	-3.803	-15.059	-0.793
26-Mar-99	0.000	0.000	1.932	-1.152	1.545	1.758	-0.826	-6.944	-12.189	-3.692	-6.512	-3.234	5.122	0.000	-5.662	1.068	8.731	-5.439	-2.692	-7.221	-1.770
02-Apr-99	-1.783	0.000	0.000	-0.199	-0.521	-3.401	-0.397	0.122	5.616	-0.285	-7.230	2.664	-2.716	0.000	2.220	0.000	-1.920	-0.049	-4.320	0.463	-0.587
09-Apr-99	2.528	0.000	-15.837	-2.397	-2.484	1.342	-0.531	3.266	2.152	1.099	-1.728	-2.762	-2.237	0.000	0.885	0.000	-0.691	-7.674	-4.030	8.801	-1.015
16-Apr-99	0.437	0.120	9.677	-3.343	0.447	3.242	-0.293	0.958	-0.856	-1.066	-5.963	-0.581	4.898	0.000	0.399	0.000	4.835	6.797	0.212	0.454	1.019
23-Apr-99	-0.311	1.193	-5.260	0.189	-0.445	-4.876	0.604	1.690	0.216	-0.016	6.462	1.034	0.959	0.000	2.716	-2.817	-1.573	1.534	6.337	0.083	0.386
30-Apr-99	1.186	-0.592	-4.383	4.026	-3.169	2.331	-0.351	2.271	-0.658	1.571	-8.113	-0.329	11.938	-1.467	10.453	-1.014	5.620	-0.077	-0.531	0.614	0.966
07-May-99	0.720	0.000	-1.568	-1.792	-0.135	3.672	1.356	-1.195	-3.105	-1.552	-0.866	-1.231	-17.150	-12.618	0.616	1.977	0.808	0.012	0.848	0.536	-1.533
14-May-99	-0.578	1.165	0.000	-1.504	-1.066	-0.152	-0.709	0.357	0.660	0.000	-0.443	0.729	-2.541	-6.775	-0.807	0.747	0.031	-0.865	-1.646	2.357	-0.552
21-May-99	0.116	-0.450	-2.218	0.689	0.712	1.436	-11.686	-0.187	2.095	-3.924	-0.424	-6.447	5.833	3.281	2.230	0.727	0.852	0.332	-0.240	-0.106	-0.369
28-May-99	-0.308	0.000	-2.631	-10.106	-0.185	-0.557	11.344	0.521	0.252	-0.109	2.843	2.001	3.485	-2.734	1.441	-0.127	-1.657	0.538	-4.163	-3.929	-0.204
04-Jun-99	0.581	0.000	7.083	0.004	0.690	0.771	-1.187	-0.570	-0.011	-3.249	-2.822	8.472	0.167	2.563	-2.976	0.581	2.687	0.016	1.916	4.065	0.959
11-Jun-99	-0.163	0.704	-3.333	2.386	-0.204	0.481	-14.394	0.879	-1.304	2.210	1.771	-2.354	-0.181	0.887	-0.502	1.155	-1.583	-0.013	-0.028	-1.984	-0.778
18-Jun-99	0.102	-0.699	3.773	3.294	2.676	2.583	14.000	-3.139	1.101	1.211	-1.715	2.553	-1.627	14.942	0.518	-1.086	-0.269	0.151	-0.015	2.608	2.048
25-Jun-99	-0.102	1.046	0.000	0.000	-2.512	-2.132	-0.541	-0.288	-0.252	3.196	-0.154	0.719	-0.236	-8.655	0.307	0.648	-0.238	-1.624	-0.002	-0.442	-0.563
02-Jul-99	-1.136	-0.338	0.046	0.112	0.270	-1.622	1.368	0.013	0.758	-3.631	-0.173	1.485	-0.690	-0.989	-0.361	0.000	0.534	-1.654	-1.441	0.069	-0.369
09-Jul-99	1.142	-0.755	0.000	0.000	0.234	1.962	-0.424	1.627	1.847	-1.574	0.588	1.604	5.320	1.768	-4.128	0.000	1.557	-1.252	-1.023	0.631	0.456
16-Jul-99	0.007	-1.353	0.471	0.301	2.189	0.516	1.860	0.926	2.228	-0.601	5.802	2.522	1.643	12.613	-6.634	-4.895	0.482	4.517	0.218	3.143	1.298
23-Jul-99	0.000	0.000	0.000	-0.301	0.513	-15.073	-0.012	3.351	3.724	1.331	6.633	5.861	-0.830	-3.555	-2.400	0.000	0.951	0.067	2.313	1.033	0.180
30-Jul-99	0.000	0.000	2.479	1.182	0.627	0.021	-1.486	-0.239	-0.813	1.373	-7.028	0.868	-4.198	0.661	-2.746	4.412	0.330	-0.073	-2.190	1.937	-0.244
06-Aug-99	0.170	0.000	-2.419	-1.168	1.027	-2.025	0.023	0.726	0.777	-0.596	-4.747	-1.304	-3.087	4.594	-1.888	0.000	0.157	-0.072	0.435	-0.469	-0.493
13-Aug-99	0.340	0.000	0.000	0.000	0.069	-1.215	-2.101	0.087	1.426	0.432	1.039	0.990	-4.692	-1.288	-4.082	-0.085	1.842	0.024	-0.626	0.543	-0.365
20-Aug-99	-0.494	0.000	0.000	1.852	-1.755	-4.021	-5.507	0.004	-3.312	1.910	0.926	3.662	0.403	0.368	2.686	-1.325	1.710	0.061	0.654	1.278	-0.045
27-Aug-99	-																				

NAROBİ STOCK EXCHANGE 20 SHARE INDEX CONSTITUENT SECURITIES
WEEKLY MEAN RETURN
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBOND	GYK	KAKU2	SASINI	UCHUMI	KENAIR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE	
29-Oct-99	-0.971	-3.741	0.000	-2.020	2.022	0.656	-1.430	-0.091	-0.012	4.348	-0.275	1.745	-2.533	-0.269	-0.429	-2.857	-1.241	0.277	-3.170	2.914	-0.354	
05-Nov-99	0.000	0.000	0.000	0.000	-11.793	-0.036	3.204	-0.040	-0.531	-2.083	-4.124	2.057	-0.515	1.038	0.415	0.000	-0.455	1.305	-11.399	-0.075	-1.152	
12-Nov-99	2.647	2.424	0.000	0.000	-6.232	5.446	-5.639	-0.322	-2.463	-2.744	-3.113	0.965	0.959	-0.914	-8.584	0.000	-10.042	-2.064	-4.044	0.286	-1.672	
19-Nov-99	-0.745	-2.944	0.000	-8.317	0.150	5.138	2.493	0.791	0.174	-1.404	-11.098	2.237	1.330	-3.304	-1.165	-3.676	0.351	-0.027	1.109	0.003	-0.945	
26-Nov-99	-1.059	-3.978	0.941	-3.516	-0.131	5.783	-4.655	-0.283	0.459	2.066	-0.486	-0.285	-2.935	6.357	1.601	0.000	-7.483	0.113	0.016	0.097	-0.389	
03-Dec-99	0.370	-8.324	-6.389	-7.400	-5.626	8.949	0.900	0.585	2.039	0.306	11.385	-0.470	-6.398	-2.727	3.619	3.817	13.463	0.701	1.674	0.020	0.525	
10-Dec-99	0.707	-3.387	-3.324	-0.337	2.338	3.342	1.061	0.213	0.048	2.098	-1.103	-6.657	-0.937	-0.154	-5.916	-1.471	-4.800	0.196	1.882	0.497	-0.785	
17-Dec-99	-1.655	0.000	0.000	-0.165	0.996	-1.780	-2.029	0.117	-2.022	2.841	5.721	-0.947	-0.224	0.000	0.053	0.746	-0.440	12.861	7.517	1.371	1.148	
24-Dec-99	1.468	-0.922	-3.867	2.150	0.058	2.031	0.935	-0.872	2.101	5.973	-8.008	0.467	-5.378	0.000	1.118	-2.222	-0.051	0.097	3.726	-1.952	-0.157	
31-Dec-99	0.935	0.000	0.000	0.000	2.949	-0.122	-0.638	0.579	-0.702	-1.439	-4.494	0.110	5.701	0.000	-0.421	-2.273	2.851	0.162	0.326	0.102	0.181	
07-Jan-00	0.000	0.000	0.000	0.000	0.233	-1.947	0.021	-0.566	0.488	2.763	2.241	0.630	1.587	0.962	0.476	0.000	-2.817	-0.143	-0.242	0.490	0.209	
14-Jan-00	0.000	0.000	5.172	0.000	2.376	0.282	0.658	0.828	0.606	-0.080	4.142	0.675	0.247	-0.952	0.070	-0.775	0.060	3.478	-0.363	-0.078	0.817	
21-Jan-00	-0.822	0.930	3.148	-8.620	-1.773	-0.314	-1.475	0.038	0.024	0.000	3.590	1.388	-2.347	1.308	-3.016	0.000	-0.834	-1.192	-0.118	-0.445	-0.526	
28-Jan-00	0.173	1.075	0.000	8.048	0.231	-1.753	-2.723	-0.093	-2.145	-1.772	0.348	0.708	-0.580	-0.873	-1.085	0.000	0.869	-0.679	1.013	1.895	0.133	
04-Feb-00	0.000	-1.064	3.464	0.000	2.706	-1.609	-3.049	-0.246	-0.505	-2.034	2.623	1.258	0.149	0.651	0.073	0.000	-3.007	-0.545	0.072	0.111	-0.048	
11-Feb-00	0.000	0.000	-0.154	-11.915	4.229	-1.248	-1.196	-0.042	-4.407	3.028	-12.324	-3.291	0.368	-0.875	0.000	0.000	2.017	-0.988	-0.720	-0.031	-1.377	
18-Feb-00	0.000	0.000	0.000	-1.338	-1.247	-0.742	-1.251	0.155	-0.518	0.172	0.803	1.901	1.904	0.729	0.073	0.000	0.443	0.000	0.801	-2.381	-0.025	
25-Feb-00	-6.115	-3.226	0.000	-6.489	-2.172	-16.011	-0.068	0.278	1.341	0.840	-2.546	10.969	-3.389	-0.953	1.186	0.000	1.290	-0.201	-2.254	1.565	-1.298	
03-Mar-00	-17.554	-1.620	-7.692	0.000	2.255	11.690	-1.268	-0.300	15.145	0.133	0.493	20.319	-0.485	0.038	16.595	0.000	-0.624	-14.927	2.729	7.059	1.599	
10-Mar-00	0.000	-1.741	-14.923	-2.778	2.379	1.267	0.561	0.210	1.517	7.475	0.037	-1.431	2.734	0.269	12.624	0.000	4.188	-8.687	-3.605	18.322	0.921	
17-Mar-00	22.286	0.000	0.000	0.024	3.167	-0.619	-0.705	0.494	-1.714	-0.104	0.438	1.061	7.325	-0.230	0.934	1.047	0.593	-1.654	0.458	-14.507	0.915	
24-Mar-00	-4.510	-0.048	-8.579	2.833	1.528	0.621	-0.124	1.001	-18.683	-2.509	-0.425	-0.368	-3.312	3.576	-14.562	0.000	1.666	2.876	-2.602	-8.056	-2.484	
31-Mar-00	-4.277	0.000	0.045	-2.728	-6.708	3.617	-0.851	0.128	23.677	-0.987	-6.331	-3.592	0.278	3.898	1.529	0.000	-5.647	3.583	1.190	1.202	0.401	
07-Apr-00	-7.802	0.048	0.083	0.149	3.534	2.557	-1.077	0.922	0.111	-0.006	-6.154	7.271	-0.626	-4.895	-1.130	0.000	-2.488	-2.912	-1.022	-1.478	-0.746	
14-Apr-00	-4.677	0.038	2.012	-2.170	-0.912	0.649	-6.405	-0.814	0.033	-1.846	4.358	1.195	0.490	1.315	0.841	-0.387	1.930	-0.868	-4.211	2.371	-0.353	
21-Apr-00	-0.847	3.409	-1.399	-14.689	0.050	0.262	-13.299	-6.313	0.500	1.887	6.854	0.880	-1.374	-1.520	0.519	0.900	2.665	3.444	-8.025	0.271	-1.291	
28-Apr-00	-0.523	0.000	-3.344	7.142	2.742	0.161	1.758	-2.672	-0.541	-0.231	1.235	-0.432	0.418	-2.108	0.376	0.000	-3.678	-3.033	-1.904	-0.882	-0.276	
05-May-00	0.000	0.000	0.000	-2.655	3.067	1.484	4.962	-1.155	-6.757	-6.796	-7.700	-0.324	1.923	-6.223	-3.000	-0.304	-0.000	-3.987	-14.916	-15.650	0.785	-2.275
12-May-00	-0.103	0.000	0.000	5.230	0.006	-1.555	2.407	4.575	0.382	0.000	-12.852	-2.024	0.743	5.547	0.283	-4.837	1.458	-4.083	0.257	0.109	-0.223	
19-May-00	-0.398	-9.715	-1.677	5.412	0.207	1.770	0.121	-0.089	-0.716	-18.694	15.941	-1.555	-0.335	0.322	-0.498	5.000	-0.153	1.939	-15.239	0.012	-0.917	
26-May-00	0.503	-5.239	0.000	3.541	-0.686	-0.169	-1.101	-3.028	0.282	2.756	-0.367	2.263	0.556	0.000	1.200	-10.746	-0.383	-0.901	0.443	0.565	-0.526	
02-Jun-00	-3.128	0.000	0.000	5.548	0.052	1.679	-0.304	0.401	-0.562	1.144	2.917	-0.129	1.332	1.390	-0.478	-10.190	-1.299	-1.017	-8.796	-0.483	-0.596	
09-Jun-00	0.185	0.051	0.000	-3.807	-1.492	3.800	-0.919	0.805	-2.793	-0.485	-3.250	-1.712	-1.257	0.281	-1.142	0.000	-3.987	-14.916	-15.650	0.785	-2.275	
16-Jun-00	-0.410	0.000	-0.746	0.000	-1.407	0.462	-0.270	-0.275	-1.210	0.755	-3.179	-4.755	-0.825	1.227	-1.188	0.000	-3.441	26.267	-0.762	-0.951	0.465	
23-Jun-00	-0.623	-1.622	-3.759	-4.201	1.021	-2.045	0.096	-0.278	-0.153	1.137	-2.437	3.427	-0.793	-0.519	-1.863	-14.396	4.282	-10.772	-0.101	0.997	-1.630	
30-Jun-00	-1.361	-0.603	0.000	0.215	1.101	-1.155	0.109	0.563	1.203	-4.898	6.034	0.179	-0.918	0.661	-3.660	0.000	-3.652	13.095	0.608	1.433	0.448	
07-Jul-00	1.015	0.000	0.000	0.000	1.181	-0.144	0.154	-0.680	0.245	-0.506	1.020	0.773	-15.884	0.415	1.702	0.000	1.508	-1.074	0.102	2.258	-0.396	
14-Jul-00	-0.750	-4.469	-0.781	-0.306	-0.442	-0.126	0.364	0.312	0.697	-1.353	-6.379	0.997	-8.683	0.826	5.338	0.000	2.340	-0.256	1.875	3.322	-0.405	
21-Jul-00	0.000	-0.648	-2.504	-1.800	-0.107	-2.423	0.843	-0.009	-0.554	0.000	1.663	5.291	14.378	4.542	-0.318	9.045	1.158	-2.624	-2.300	3.039	1.334	
28-Jul-00	-0.540	0.000	1.761	0.000	0.295	0.347	0.264	0.009	0.221	-0.022	-6.768	0.480	9.826	4.443	1.174	0.000	0.418	-0.309	2.500	-0.812	0.664	
04-Aug-00	0.421	0.000	0.000	-1.077	0.245	-10.391	-0.494	0.020	-1.992	-0.925	-4.127	0.387	-0.684	0.063	-0.498	0.000	0.636	0.000	-3.312	-1.448	-1.159	
11-Aug-00	-0.243	-4.895	0.000	0.770	-2.806	-0.082	0.006	-0.029	-3.746	0.452	-0.969	1.231	3.576	0.031	0.050	-6.491	-0.953	-3.707	0.424	2.404	-0.749	
18-Aug-00	-7.207	-5.882	0.000	-0.632	1.441	3.303	-0.188	1.494	3.928	0.000	0.400	2.099	-2.127	-0.750	5.164	-2.450	0.085	0.000	0.844	3.787	0.165	
25-Aug-00	5.839	-7.503	0.000	-0.295	1.211	3.884	0.081	4.675	0.862	-2.964	0.602	-0.094	0.787	-0.158	0.000	6.363	-5.682	-3.260	-0.171	0.106	-0.143	
01-Sep-00	4.924	0.000	0.000	0.000	2.587	5.966	-4.246	0.619	0.902	-7.205	-5.418	0.536	-0.111	0.156	0.333	-4.651	7.235	-2.528	-3.303	1.338	-0.143	
08-Sep-00	-2.432	0.000	0.000	0.162	0.041	2.603	4.217	-0.291	0.464	0.000	9.191	1.293	0.121	-0.998	1.439	0.000	-0.987	0.163	-0.257	-1.656	0.654	
15-Sep-00	7.788	5.342	-3.571	2.907	0.435	5.041	-0.412	-0.471	-0.300	-0.768	3.027	1.408	0.372	1.008	2.479	0.000	2.257	5.005	-2.387	-2.713	1.322	
22-Sep-00	0.625	3.185	2.058	-7.824	1.284	1.201	-1.434	0.184	0.997	-15.758	0.163	1.085	2.968	0.561	9.020	2.439	0.259	4.470	-1.986	0.281	0.189	
29-Sep-00	-0.149	1.016	-3.968	-0.695	0.600	-0.887	-6.924	-2.134	0.539	-0.312	0.104	-0.096	-3.398	-0.589	-0.098	-1.762	0.526	-0.983	-0.538	1.594	-0.908	
06-Oct-00	1.966	7.754	-7.265	0.470	-0.124	1.127	-0.264	-4.292	1.130	0.000	5.602	0.012	-7.756	0.624	-2.179	4.023	-0.050	0.304	-1.844	0.846	0.004	
13-Oct-00	1.025	0.000	0.000	5.664	2.790	1.479	-1.181	2.830	1.433	6.667	2.060	-0.595	0.211	1.519	0.228	0.186	1.698	0.767	-1.992	-1.785	1.150	
20-Oct-00	6.884	8.203	4.477	0.000	2.692	1.913	4.187	-0.429	1.824	-0.014	0.931	0.233	-0.182	1.802	1.068	0.000	-0.385	0.083	-4.881	1.083	1.475	
27-Oct-00	2.384	15.704	4.011	0.000	0.936	0.087	-0.571	1.351	3.059	-0.105	3.931	-0.228	0.008	-0.270	0.409	0.000	0.091	-0.685	-24.646	-0.118	0.267	
03-Nov-00	-0.673	3.748	-12.474</																			

NAROB STOCK EXCHANGE 20 SHARE INDEX CONSTITUENT SECURITIES
WEEKLY MEAN RETURN
FOR THE PERIOD APRIL 1996 TO DECEMBER 2001

WEEKEND	BBDO	GWK	KAKUZ	SASINI	UCHUMI	KENAR	NMG	SERENA	BBK	DTK	KCB	SCB	NIC	BAMB	BAT	BOC	EABL	FIRE	KPLC	TOTAL	AVERAGE
05-Jan-01	0.000	0.000	0.000	0.382	2.636	1.371	-1.040	-0.371	21.854	0.000	23.319	19.373	3.873	-0.413	4.798	0.000	0.740	0.000	-11.401	0.000	3.256
12-Jan-01	0.247	-3.093	0.000	-1.567	-2.302	-1.308	-0.475	0.748	0.358	0.000	4.243	6.733	11.546	1.007	6.612	0.000	1.476	-0.016	2.997	-5.537	1.083
19-Jan-01	0.123	0.000	-58.205	-4.748	0.689	0.156	-1.720	0.716	5.899	2.922	-21.610	-2.550	3.742	-0.616	1.504	0.000	1.988	-0.448	2.173	-3.928	-3.695
26-Jan-01	1.424	2.660	0.000	0.000	2.282	1.861	1.299	1.226	-4.397	-0.757	-0.751	-3.626	-2.032	1.063	-0.733	0.529	-3.433	-1.034	-1.616	-1.201	-0.362
02-Feb-01	0.040	1.036	0.000	0.030	5.253	2.742	2.560	0.504	-5.866	-2.256	1.203	-5.750	-0.599	0.496	-0.508	-1.053	1.169	-8.626	-0.015	-0.570	-0.510
09-Feb-01	-0.899	0.000	126.621	0.730	0.021	-2.054	-0.014	-1.288	1.513	-6.025	1.650	6.806	1.481	0.291	0.433	-1.064	1.545	-4.818	1.861	-0.045	6.337
16-Feb-01	-10.341	-1.521	5.269	9.032	-0.200	-0.016	1.313	1.596	1.736	-1.029	-0.977	3.089	-11.104	0.753	0.092	-0.344	0.944	-3.807	2.327	-10.098	-0.664
23-Feb-01	13.227	1.503	0.000	1.964	-3.224	0.694	0.099	0.994	2.298	0.024	1.317	-1.233	7.482	-1.553	-4.308	0.000	0.183	-1.306	29.470	0.205	2.412
02-Mar-01	3.974	0.159	-1.964	-7.320	0.440	-0.357	0.557	0.374	-0.105	1.816	-2.088	4.005	-4.226	-12.212	1.302	0.000	0.712	-0.166	-5.985	0.000	-1.954
09-Mar-01	0.734	7.143	-2.264	6.325	0.101	-0.282	-0.378	0.067	3.722	2.127	19.233	12.027	-0.208	3.195	-0.111	-9.301	1.809	-14.286	-0.219	-10.218	0.961
16-Mar-01	-0.814	-1.905	0.000	-0.524	-0.755	-12.629	-0.546	2.414	3.588	-3.852	-11.532	-3.300	3.130	-4.708	-3.035	-0.071	0.027	-1.361	-3.272	-4.310	-1.020
23-Mar-01	-0.338	0.026	0.000	-6.673	-5.015	-2.532	-1.018	0.118	-4.835	0.009	-1.172	1.653	-8.817	-5.212	-1.835	0.000	0.442	0.132	-4.568	8.246	-1.569
30-Mar-01	-2.307	-0.026	-12.456	9.693	-2.022	0.725	-2.497	-0.033	-1.363	0.376	-9.840	0.840	-3.892	-0.036	-2.187	-0.952	-0.867	0.492	-14.249	2.515	-1.904
06-Apr-01	3.185	-2.913	0.000	-8.077	0.939	-1.813	-7.314	0.067	2.751	-0.383	3.864	-19.271	-5.206	0.000	-0.939	0.000	1.362	-0.762	0.400	0.656	-1.673
13-Apr-01	-5.760	0.000	-12.376	-2.804	-2.070	-0.045	-5.582	-0.096	-0.295	2.084	0.250	7.929	0.662	0.000	4.747	0.962	0.623	-6.335	-0.405	2.608	-0.795
20-Apr-01	-0.264	0.000	-0.762	0.000	0.013	2.675	0.122	0.019	0.424	-2.042	0.093	0.852	-2.702	0.000	-1.325	-4.762	-0.721	0.099	-0.420	2.150	-0.328
27-Apr-01	-0.395	0.000	0.000	-3.487	-0.097	1.541	-5.802	0.048	-0.425	0.000	6.076	0.088	-0.384	-3.571	-5.888	0.000	0.508	0.058	-0.092	-2.611	-0.722
04-May-01	-1.494	0.000	0.000	-3.285	-2.207	-3.122	2.088	0.076	0.825	0.000	-1.040	-0.036	-3.017	-3.383	2.830	0.000	-0.038	-0.606	-3.118	1.423	-0.705
11-May-01	3.231	0.000	0.000	0.250	-2.051	-0.381	-2.372	-0.103	-9.477	0.000	-0.397	2.064	-0.183	7.333	-3.378	0.000	-1.802	-6.145	-9.871	5.011	-0.914
18-May-01	-1.010	2.000	-2.969	-0.249	-0.173	1.656	-2.061	0.286	-2.232	-0.399	4.455	1.484	0.010	0.002	-1.934	0.000	1.030	-0.106	-12.425	-2.485	-0.756
25-May-01	0.000	-1.837	3.060	-1.614	-6.953	1.529	-6.321	-0.426	0.711	-7.323	11.039	-0.279	-0.234	0.000	-0.033	-12.881	0.265	1.339	-7.452	-2.023	-1.772
01-Jun-01	-1.531	0.000	2.216	-0.245	5.852	0.870	-4.537	0.121	-0.146	-2.500	-2.794	0.133	-5.519	0.000	-0.558	0.000	-2.213	-1.322	-0.463	-2.861	-0.475
08-Jun-01	2.447	5.867	0.000	0.757	-0.378	1.899	-8.293	0.212	1.961	0.000	-4.933	-3.009	-1.010	0.000	-1.077	-11.061	-3.966	0.648	0.439	-3.899	-1.170
15-Jun-01	1.152	-2.869	-4.328	-8.671	-0.221	8.430	-5.358	0.360	7.965	-5.804	1.812	1.753	0.581	0.000	3.367	-8.997	2.524	-0.644	-0.267	-2.096	-0.566
22-Jun-01	-0.689	1.012	2.259	3.343	1.239	-0.723	-3.376	-0.208	-1.370	-0.190	-5.811	2.651	3.871	-0.638	-2.677	-2.576	1.462	-2.802	1.213	-6.179	-0.510
29-Jun-01	1.226	0.835	0.000	-3.571	-0.513	-0.983	2.526	-0.703	2.957	1.818	2.832	4.099	2.946	2.918	-1.979	1.898	-0.592	0.073	1.121	0.691	0.880
06-Jul-01	1.101	0.000	0.000	-0.855	3.845	-2.451	8.855	-3.322	7.371	0.504	3.103	2.697	-0.087	-9.968	1.242	10.714	2.841	2.809	0.953	5.269	1.731
13-Jul-01	0.000	0.481	0.000	0.000	0.046	0.180	8.028	1.380	-1.077	-2.369	-2.178	-2.460	0.256	8.609	1.841	0.000	0.089	0.004	-0.316	-0.058	0.623
20-Jul-01	1.405	-0.353	0.000	0.942	0.093	1.825	0.572	2.318	-4.893	0.093	-4.251	-1.772	1.167	-2.411	-1.831	0.000	0.355	-0.015	-6.324	1.703	-0.569
27-Jul-01	-1.542	0.947	-2.500	-1.230	-0.095	-0.867	-0.191	-1.070	0.571	0.000	1.246	0.158	0.297	-1.183	3.665	0.000	0.145	0.023	2.691	1.769	0.142
03-Aug-01	1.457	-4.712	-6.410	-0.709	-0.039	1.085	-2.505	-1.832	0.731	0.218	-4.119	1.930	3.611	3.704	0.482	-2.258	1.093	0.550	-3.057	-4.528	-0.765
10-Aug-01	-2.869	0.990	-2.055	0.000	-1.348	-8.011	0.798	0.134	0.697	1.329	18.031	-0.373	0.029	-2.433	-10.911	0.000	-0.021	-0.106	2.042	-5.295	-0.469
17-Aug-01	0.006	-0.980	-2.098	-6.263	-0.875	-1.723	0.300	-0.033	1.301	-1.482	-4.307	1.542	-2.117	-0.247	-0.197	0.660	1.654	-0.413	-1.751	0.236	-0.839
24-Aug-01	-0.225	0.990	0.000	0.643	-0.070	1.046	-2.310	-0.684	-2.595	-0.045	-7.449	-1.645	0.307	-6.509	-0.152	-1.639	-0.830	-5.731	-8.793	1.128	-1.728
31-Aug-01	-1.584	-1.561	0.000	0.000	-7.168	0.268	-0.143	-2.300	-0.953	2.273	-5.489	-8.714	-3.302	-1.939	-5.446	0.000	-1.664	6.795	-2.827	-5.513	-2.003
07-Sep-01	0.000	-5.000	-2.723	0.000	-1.111	-0.196	0.602	-0.164	-2.964	-2.222	-0.422	-5.676	-7.471	0.000	1.034	1.667	-1.365	1.418	-5.968	-4.765	-1.766
14-Sep-01	-3.882	6.000	0.000	0.000	-0.992	-0.555	-0.444	-1.883	-4.748	0.000	-0.079	-0.752	0.556	-5.297	-0.698	-1.639	2.651	6.088	-0.521	0.000	-0.610
21-Sep-01	-2.647	0.000	0.000	-10.000	-3.152	-0.698	-0.172	-4.547	-2.296	0.000	-2.964	-4.064	-0.077	-0.677	-1.317	0.000	1.028	-3.608	-10.993	-11.367	-2.878
28-Sep-01	0.534	0.000	0.000	-11.585	-4.327	-0.018	-9.547	-2.215	-1.726	-3.564	-6.431	1.639	-12.768	0.000	-3.322	-2.174	-0.152	-11.832	1.930	-4.721	-3.514
05-Oct-01	-3.955	0.000	0.000	0.000	-1.253	-4.112	-3.160	-0.418	0.044	0.000	-0.449	10.349	-0.948	-1.340	3.146	2.222	0.129	-3.372	12.314	-9.490	-0.015
12-Oct-01	-0.975	0.000	0.000	0.000	-1.645	-16.741	-4.733	-2.937	0.232	-10.941	0.576	0.056	-7.764	-5.112	2.240	0.000	-0.204	5.868	11.720	-0.651	-1.551
19-Oct-01	0.571	-3.158	0.000	6.470	-0.742	7.888	6.714	3.934	2.964	4.326	2.480	8.500	-0.046	11.408	-3.435	4.343	-5.312	0.415	3.843	2.526	-0.025
26-Oct-01	0.568	0.000	0.000	0.000	-1.253	-4.112	-3.160	-0.418	0.044	0.000	-0.449	10.349	-0.948	-1.340	3.146	2.222	0.129	-3.372	12.314	-9.490	-0.015
02-Nov-01	1.867	1.018	2.069	-0.498	6.742	-2.951	9.137	4.186	1.199	6.416	19.530	0.668	3.613	3.428	-1.176	-1.192	2.688	-7.186	0.155	9.972	2.984
09-Nov-01	0.568	2.221	0.000	-0.001	-17.602	-8.358	6.190	0.508	-4.199	0.060	-2.922	-3.461	13.129	0.264	-0.384	-0.242	-0.947	17.295	-19.544	10.366	-0.353
16-Nov-01	0.370	0.000	0.000	0.501	0.378	8.470	-1.689	0.815	-2.064	-0.009	-7.643	-1.873	2.653	-4.523	-1.103	0.000	-3.157	0.084	-17.608	1.052	-1.267
23-Nov-01	0.000	0.000	0.000	-10.413	0.154	2.434	-1.943	1.865	2.610	0.000	-10.881	3.268	-4.819	-4.916	0.998	3.571	0.596	-6.849	-2.991	-4.102	-1.571
30-Nov-01	-1.099	-18.158	0.000	5.195	-5.447	-2.167	-2.130	0.180	0.671	1.174	-2.395	-0.796	1.151	-0.111	0.757	1.504	-6.877	1.291	5.327	0.313	-1.081
07-Dec-01	0.000	-9.968	0.000	-1.667	-3.796	0.942	-5.914	-0.217	-0.769	-1.101	-3.551	2.064	0.055	-10.414	1.624	0.000	-0.384	-0.822	8.879	-0.312	-1.268
14-Dec-01	0.000	-1.405	0.000	-6.736	-3.573	-0.522	-3.005	2.170	3.105	0.450	0.369	1.929	0.134	-1.103	0.369	5.952	0.085	-0.488	-0.856	-0.935	-0.203
21-Dec-01	-3.974	0.000	0.000	-0.306	1.189	0.456	0.176	1.242	-2.365	-1.673	0.880	1.446	0.072	0.000	1.346	-3.810	-0.404	0.145	-1.112	-0.544	-0.362
AVERAGE	-0.182	0.188	0.055	-0.122	0.167	-0.054	0.281	0.025	0.074	-0.449	-0.151	0.269	-0.085	0.159	0.073	-0.254	0.271	-0.098	0.275	-0.249	0.016