Performance and Performance Persistence in South African General Equity Unit Trusts, a test of South African Market Efficiency.

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Abstract

Over the last four decades academics have been concerned with both the factors effecting individual unit trust performance and whether this performance persists going forward. Whilst persistence in performance is of interest to unit trust investors from a practical perspective, it is also of interest to academics due to its inherent implications for the Efficient Markets Hypothesis (EMH). This study employs South African data based on a sample of 35 General Equity unit trusts over the six year period 1st January 1998 to 31st December 2003. This study discusses both the EMH as well as factors that influence unit trust management style and associated performance. Using Jensen's alpha in both a Capital Asset Pricing Model (CAPM) framework and a 2-Factor Arbitrage Pricing Theory (APT) model, unconditional evidence is presented on the performance of General Equity unit trusts. Absolute unit trust performance is also calculated for each specific time period. In addition, this study derives a fourth performance measure by benchmarking against mean General Equity unit trust returns in a single-factor APT framework. Performance, as calculated in the above mentioned techniques, is then tested for persistence over the short-term (half-yearly, yearly) and in the long-run (2-yearly and 3-yearly). Consistent with Van Rensburg and Slaney (1997) this study finds that the 2-Factor APT model is far better at explaining the variation in unit trust returns than the single factor CAPM model. This study also finds that Absolute return performance rankings are not significantly different from the risk-adjusted (Jensen's 2-Factor model and Peer Group model) performance rankings. Empirical testing reveals limited evidence of persistence on absolute and risk-adjusted returns in the short-term (half-yearly and yearly). Further results show insignificant levels of persistence going forward into the long-run (2-yearly and 3-yearly). This study also undertakes an analysis of individual unit trust performance persistence. Although this analysis is neither relevant nor quantifiable in terms of testing the Strong-Form EMH, it is conceivably the most useful evidence for individual investors. The results of this analysis show that individual unit trusts do repeat their performance to some extent in successive periods and that therefore on an individual unit trust basis prior performance can be a useful predictor of future performance.

Contents

1. Introduction

When selecting a unit trust an investor faces a difficult yet important choice from amongst many hundreds of product offerings, each exhibiting considerable degrees of price dispersion. Investors have long sought active portfolio managers who can produce portfolio returns superior to those obtained by other managers in the industry. Past performance is often their major selection criterion due to the fact that past performance is perceived to imply that a unit trust will repeat its performance to some useful extent in the future or in other words that yesterday's top managers will be tomorrow's winners. Measuring the degree of persistence in unit trusts has hence been the objective of many academic studies over the last 35 years (Grinblatt and Titman (1992, 1993), Carhart (1997), Knight and Firer (1989), Meyer (1997), Von Wielligh and Smit (2000), Firer et al (2001)). The financial press and unit trusts themselves consistently publish past returns as a means of demonstrating their individual portfolio performance. "Mutual funds (unit trusts) devote significantly more print space to reporting their past returns than to the SEC's (Securities and Exchange Commission) required warning regarding persistence-based investment strategies" (Detzel and Weigand, 1998), and do so because they are confident that "investors can use historical information to beat the pack" (Brown and Goetzmann, 1995).

The extensive literature evaluating the performance of unit trusts suggests that unit trusts cannot outperform relevant benchmarks on aggregate (Dewoter and Gborglah (1998), Fortin and Michelson (1999), Smith and vd Merwe (1999)). This is consistent with academic theory regarding the notion of Efficient Capital Markets (EMH), an accepted academic model developed by Fama in the 1970's. Fama's theory of market efficiency suggests that security prices fully reflect all currently available information and historic stock prices retain no predictive power over future price fluctuations (Elton and Gruber, 1995). It suggests that equally diversified portfolios of equivalent risk should produce identical returns in the long-run. This raises the question as to why unit trusts and more importantly investors place such emphasis on unit trust past performance, an assertion contradictory in nature to the EMH. In South Africa alone there is an entire industry devoted to tracking, reporting and ranking the past performance of unit trusts and pension funds. This embodies a belief that active

management is able to outperform passive management (indexing) with some degree of persistence. Essentially this contradiction pertains to irrational biases in human nature. It seems entirely reasonable for investors to assume that part of a unit trusts performance is associated with the ability of the manager (who makes the investment decisions) and part is associated with the unit trust organisation (which can effect performance for a number of reasons i.e. investment philosophy, mandatory requirements, efficiency, corporate governance, quality of analysts/research and corporate relationships). At the centre of this argument lies the zealous debate between active and passive (indexing) portfolio management. If the market efficiency hypothesis holds, it should not be possible for actively managed portfolios to provide superior returns to passively managed or indexed portfolios. Should performance persistence exist however, it indicates that there are market inefficiencies that portfolio managers are either able to exploit or suffer from. The implication is that past performance provides a guide because it will be repeated to some useful extent in the future. Testing the persistence of relative unit trust performance can hence be viewed as a test of market efficiency.

A number of empirical tests have been developed to determine whether specialists managing active portfolios can outperform passive investment strategies. These techniques have often attempted to distinguish between the market timing skills of fund managers and their asset selection skills. Empirical testing is commonly extended to employ unit trust performance persistence as a means of disproving the strong-form EMH. The analysis undertaken in this study consists of:

1. *Chapter 2* involves a discussion relating to the factors affecting South African General Equity unit trust performance, this will include reference to prior research conducted in this area.
2. Measuring General Equity unit trust performance over different time periods by testing the following (*Chapter 4*):
   2.1. Unit trust risk-adjusted performance against
      2.1.1. The ALSI in a CAPM framework.
      2.1.2. The Financial and Industrial (J250) and Resources index (J000) in an APT 2-Factor framework (van Rensburg and Slaney, 1997).

2.1.3. A Peer Group benchmark as derived from mean General Equity unit trust performance in each specified period using a single factor APT framework.

2.2. Absolute (raw return) unit trust performance.

3. Testing the performance calculated in each of the above measures for persistence using the following:
   3.1 Contingency table analysis of winners and losers and Chi squared tests on these tables.
   3.2 Ordinary Least Squares regression analysis (OLS).
   3.3 Spearman Rank Correlation Coefficient analysis of successive period performance rankings.
   3.4 An individual unit trust average rank test as derived in this study.

With reference to the second part of the study we will calculate Jensen's alpha values (Jensen, 1968) for each different period in time and for each of the three risk-adjusted tests (excluding absolute returns). The calculated performance is based on weekly data as published on I-NET Bridge and tests the 6-year period 1 January 1998 to 31 December 2003, the performance is calculated for different periods of time including short-term performance (half-yearly and yearly) and long-run performance (2-yearly and 3-yearly). The third part of the study tests for persistence in the calculated performance figures of South African General Equity unit trusts. This testing is based largely on the major empirical tests as set out by Allen and Tan (1998). In addition persistence is tested for using a simple average rank test as derived in this study. If past performance is a good indicator of future performance we would expect superior managers in an initial period to continue to exhibit superior performance in a successive period, and so forth.

This study begins with an in depth discussion of the factors effecting unit trust performance. This discussion includes reference to prior literature and provides a good fundamental framework for the testing of both performance and performance persistence. Following which, the study explores the different evaluation methods and statistical tests adopted. Performance and its associated persistence going forward are then tested. Results are discussed and appropriate conclusions made.

2. Literature Review and Discussion

This section provides a more elaborate analysis of the EMH and the related prior evidence either concurring with or contradicting the theory. It also includes the merits of active versus passive portfolio management within the environment of the EMH. This active versus passive debate extends into a discussion focussing on the behavioural aspects of portfolio management. The core subject matter of this section can be separated into two parts. Firstly it deals with the measurement of unit trust performance in terms of benchmark selection, risk free rate, choice of asset pricing model and portfolio managers' timing versus stock selection ability. Secondly this section provides a discussion pertaining to unit trust performance persistence and more specifically the tests used to measure persistence and evidence found in prior literature.

2.1. Efficient Markets

The concept of efficient markets asserts that securities are fairly priced in the market and that stock prices fully reflect all available information. According to the EMH (Fama, 1970), any information that could be used to predict stock performance is already reflected in today's stock price. This implies that it is virtually impossible for investors to systematically beat the market given the extensive amount of publicly available information and it is therefore fundamentally impossible to make superior returns using either market timing or selection skills unless by chance or through the use of insider information. There is nevertheless a prevalent perception about trading in stock that success comes from being able to use either an active strategy to select winners, timing the market right or working out price trends using quantitative techniques.

There are three forms in which the EMH is commonly stated: **weak-form efficient**, **semi-strong form efficient** and **strong-form efficient** (Fama, 1970). Each of these forms have different implications for how capital markets work.

Weak-form efficiency

- Asserts that all past market prices and data are fully reflected in security prices that are hence the best, unbiased estimate of the security.
- No excess returns can be earned by using investment strategies based on historical share prices or other financial data.
- Weak-form efficiency implies that Technical analysis will not be able to produce excess returns.
- Stock prices follow a 'Random Walk'

Weak-form efficiency holds that if such data ever conveyed reliable signals about future performance, all investors would already have learned to exploit the signals and that therefore the signals would lose their value the moment they are identified. An important consequence of weak-form EMH is the concept that stock prices follow a 'Random Walk'; this implies stock prices change randomly and in an unpredictable manner. Stock prices are recognized as being fairly priced according to all available information, consequently any changes in prices must be in reaction to new information, and new information is essentially unpredictable. Under weak-form EMH past price movements cannot hence be used to predict future price movements

Semi-strong form efficiency

- Asserts that all publicly available information regarding the prospects of a company is already fully reflected in that company's share price.
- Share prices adjust instantaneously and in an unbiased fashion to publicly available new information, so that no excess returns can be earned by trading on that information.
- Publicly available information includes fundamental data on the company's products, quality of management, financial statements, earnings forecasts and accounting practices.
- Semi-strong form efficiency implies that fundamental analysis can in no way be used to produce excess returns.

Strong-form efficiency

- Asserts that all information is fully reflected in securities prices and that no one can earn excess returns.
- The implication of this is that not even insider information can be used to beat the market.

Strong-form efficiency is tested when considering the persistence of unit trust performance. If portfolio managers are onsistently able to beat the market, then the market exudes evidence of strong-form inefficiency. It can be deduced that an increase in both the number of skilled professional money managers in the marketplace as well as information providing resources, the more strong-form efficient a market should be. A brief review of prior South African research into the efficiency of the South African market is given below.

2.1.1. Prior Research

In support of his theory on the Efficient Market Hypothesis, Fama (1970) contended that in an active marketplace filled with large numbers of well-informed and intelligent investors, stocks will be appropriately priced and will reflect all available information. There is a wealth of evidence dedicated to and succeeding in disproving the EMH, Grossman and Stiglitz (1980) argue that security prices should not be expected to fully reflect the information of informed individuals; otherwise there wouldn't be any compensation for the costs of searching for new information.

In testing the EMH in smaller countries, results have generally supported the hypothesis. In the case of The Johannesburg Stock Exchange (JSE), the limited evidence surrounding the notion of the EMH provides evidence that fluctuations in security prices are not altogether independent (Dewoter and Gborglah, 1998). Gilbertson and Roux (1978) suggest that this might be due to the fact that the JSE is a small market with relatively poor information dissemination procedures, this claim would probably not be held in the light of the JSE's improved liquidity, size and the de-materialisation of its shares. Gilbertson and Roux (1978) and Poshakwale (1996) also found evidence consistent with weak-form informational inefficiency on the JSE.

In reviewing the literature it can be seen that emerging markets exhibit lower degrees of efficiency. According to Errunza and Losq (1992) this phenomenon may well be due to common characteristics of loose disclosure requirements, thinness of the market and discontinuity in trading. In addition, Butler and Malaikah (1992) argued that the phenomenon was a result of institutional factors such as liquidity, market fragmentation, trading and reporting delays and absence of official market makers.

Within a South African context, Thompson and Ward (1994) reviewed the accumulated empirical evidence on the efficiency of the JSE and concluded that the market was probably semi-strong efficient for the well-traded shares. Studies relating to strong-form market efficiency are driven by the implicit notion that many portfolio managers use theoretically inefficient investment strategies when attempting to create wealth. In light of the EMH and in testing South African Market efficiency this study discusses the merits of active investment strategies versus passive strategies (indexing).

2.2. Investment strategy: active versus passive

This study examines the universe of actively managed South African General Equity unit trusts when compared to an appropriate benchmark. Although it may be argued that the chosen benchmark exhibits characteristics of a passively managed portfolio of assets, a test of this argument and hence a test of whether active portfolio management is superior to passive portfolio management is not in line with the objectives of this study. In discussing of different investment strategies does however provide a useful framework for the analysis.

Testing unit trust performance persistence is a test of strong-form market efficiency since it attempts to determine whether or not a particular group of investors (fund managers) are able to use either private information or their exceptional ability to consistently act on public information before other investors and hence produce consistently superior returns. Core to the vigorous debate on the merits of active versus passive portfolio management is each individual manager's opinion regarding the efficiency of a particular market. Active managers attempt to provide superior risk adjusted returns using security analysis and investment research to drive their security selection and/or market timing decisions. Contrary to this strategy, passive

management (indexing) relies on the risk averse alignment of their portfolio relative to a segment of the market or benchmark portfolio, and a reduction in the research inputs needed to construct the portfolio. Hence indexing evades the use of valuation judgments on the individual assets, economic sectors of the market, or the market as a whole. Index funds therefore provide diversified and broad market exposure at a low cost and have flourished because they are compatible with both theoretical reasoning and practical needs.

The extensive literature evaluating the performance of unit trusts corroborates with the EMH in indicating that indexing or passive portfolio management is superior to active portfolio management. Active managers argue however, that foreseeable and current market inefficiencies provide the opportunity for competent managers to outperform the market. The very fact that there are thousands of investment professionals using active investment techniques suggests that there has to be inherent benefits for the people investing in these funds. This factor may perhaps be owed to the behavioural nature of an investors psyche; people want to believe that it is possible to beat the market and consistently achieve above-average returns. Academics argue that this appeal is truly seductive and the tremendous growth in the use of index funds serves as tangible evidence that the issue is not of academic curiosity alone. Elton, Gruber and Blake (1996) ask the very relevant question: "Given that there are sufficient index funds to span most investors' risk choices, that the index funds are available at low cost, and that the low cost of index funds means that a combination of index funds is likely to outperform and active fund of similar risk…why select an actively managed fund?"

Sharpe (1991) argues that active management is a zero-sum game in which the only way a participant can profit is for another less fortunate active participant to lose. He is quoted as saying "because active and passive returns are equal before cost, and because active managers bear greater costs, it follows that the after cost return of active managers must be lower than that of passive managers". If portfolios achieve consistently superior performance relative to that of the market as a whole, some element of inefficiency in the pricing process would be indicated. Sharpe (1991) is also quoted as saying that "a manager who attempts to time the market must be right

roughly three times out of four merely to match the overall performance of those competitors who do not".

Early tests elsewhere were consistent in finding that actively managed unit trusts do not achieve superior performance (Dewoter and Gborglah, 1998), also Fortin and Michelson (1999) find that index funds outperform actively managed unit trusts for most equity and all bond categories on both a total return and after tax total return basis.

In Burton Malkiel's 2003 study on Passive Investment Strategies and Efficient Markets he discovered that for the 10-year period leading up to 31 December 2001, 71% of actively managed general equity mutual funds in the US market had produced total returns (including dividends and capital charges) that were inferior to the returns achieved by the largest index fund in the US (the Vanguard (S+P 500) index), after all expenses had been taken into account. Malkiel (1996, pg 24) states "taken to its logical extreme, the random walk theory means that a blindfolded monkey throwing darts at a newsstudy's financial pages could select a "dartboard portfolio" that would do just as well as one carefully selected by the experts." Henceforth it can be said that it is very difficult to 'beat the market' and it is even more difficult for fund managers to do so consistently.

Warren Buffet, whose opinion is constructive in any financial debate, is noted as saying, "A great many funds have been run well and conscientiously, however, it's often not clear to individuals which ones these are. In the absence of clarity, those index funds that are very low-cost are investor-friendly by definition and are the best selection for most of those who wish to own equities."

A number of studies have been conducted on the performance of South African Unit Trust performance. As at 31 January 2004 South Africa only had 9 Unit trust index funds managing assets worth just under R1.5 billion (Unit Trust Survey 2003[1]). Knight and Firer (1989), Chapman and Smith (1993) and Smith and van der Merwe (1999) find little evidence to suggest that active management is superior to passive management. More recently, a study done by Brown (2004) finds that on average the

[1] The evidence above was sourced from the Unit trust survey , December 2003, Department of Financial Management.

number of General equity funds that underperformed ALSI for the year ended December 2003 was 71.7%. When considering the 2-year period ended December 2003 however, Brown found that the number of general equity funds under performing the ALSI was only 25%. Walton (2003) found results consistent with this abnormality; he found that for the year ended June 2003, the general equity index funds tracking the All Share Index (ALSI) were found to under-perform all active managed funds in this sector. Over the year Walton discovered that the top general equity fund outperformed the best index tracker by ± 26% and the average general equity fund outperformed the best index fund ±9%. These results show conflicting evidence of active versus passive portfolio management and the volatility in results can only assist in disproving the EMH. The reason for this anomaly stems from the fact that General Equity Unit trusts that track the ALSI (indexing) are inherently more risky than those unit trusts that are actively managed. This increased risk is due to the fact that in mimicking the ALSI, Unit Trusts are more exposed to the greater risk which pertains to the volatility of the highly weighted resources sector of the JSE. The majority of actively managed South African portfolios, on the other hand, prefer to invest in less volatile areas of the market (Industrials or Financials). In addition, a great deal of the ALSI's market capitalisation is made up of only a few large companies, therefore Unit Trusts attempting to track the ALSI are exposed to more risk as they are not able to adequately diversify away systematic risk.

The inherent "dualism" of the JSE is the primary cause of a number of specific South African market anomalies. This dualism specifically pertains to the significant proportion of the total JSE market capitalisation taken up by the resources (mining) sector as well as the financial and industrial sector. Approximately one third of the entire market capitalisation of the JSE's is made up of companies in the mining sector whilst industrial/financial shares account for a similar percentage. The performance of these two sectors is more than often influenced by external factors that need to be taken into account when analysing share price behaviour and returns. Specifically, the performance of gold mining shares is hugely influenced by the gold price prevalent over that period of time; similarly industrial shares can be influenced by a number of style-based or macroeconomic variables. A study conducted by Van Rensburg and Slaney (1997) showed that a two-factor model incorporating the main two different

sectors of the JSE, namely the mining and industrial sector, was better at predicting and evaluating asset pricing than the traditional CAPM model.

The majority of the above literature reflects the superior return generating capability of passive investment techniques. This evidence is therefore a staunch advocate of the EMH. In addition to the different investment techniques used, a significant portion of the return generating ability of unit trusts lies in the behavioral characteristics of each individual unit trust manager.

2.3. Behavioural Finance

In testing the performance and performance persistence of South African General Equity Unit Trust managers it is important to touch on the behavioural aspect inherent in each manager's investment philosophy. Academics and practitioners in finance who view the rational investor assumption with scepticism have developed a new branch of finance called behavioural finance. This behavioural aspect of finance draws on psychology, sociology, and finance in order to explain why investors behave the way they do and the ensuing consequences for different investment strategies (Damodaran, 2003). Investor psychology and more importantly investor irrationality, although difficult to quantify, are useful when attempting to decipher a number of market peculiarities. Key aspects of behavioural finance include both the concept of a momentum investor (as recognised by Grinblatt, Titman and Wermers (1995) who analyse the extent to which mutual funds buy and sell the same stocks at the same time, also known as the "herd effect") and a contrarian investor (who believes that doing the opposite to everyone else creates value).

Another key area of research is the "prospect theory" as developed by Kahneman and Tversky (1979). In its original form, Prospect theory is concerned with behaviour of decision makers who face a choice between two alternatives, and is the case of the original text either 'prospects' or 'gambles'. Decisions subject to risk are deemed to signify a choice between alternative actions, which are associated with particular probabilities (either prospects or gambles). Prospect theory is based on the fact that humans have an irrational tendency to be less willing to gamble with profits than with

losses. This means selling quickly when we earn profits but not selling if we are running losses. Prospect theory is therefore very likely to effect portfolio managers.

Globally, there seems to be few common behavioural characteristics amongst the exceptional investors of this era. They use very different investment strategies and subscribe to very different, and at times contradictory, views of how markets work and what leads to success. But perhaps what makes them successful is that they have developed and maintained their very own investment philosophies, regardless of changes in the market and the opinions of their critics. Such investors include Warren Buffet, Peter Lynch, Karl Posel and William O'Niel and attempts to mimic their individual techniques are futile unless our psychological and investment profiles match theirs completely. A relevant question to ask is where all these incongruous beliefs leave the common investor or manager? Some experts argue that it is important to buy businesses with solid cash flows, liquid assets and large 'intrinsic values'. Other advisors propose that in the new world of technology, it is necessary to buy companies that have solid growth prospects and buy them quickly. Academics in favour of indexing argue that tracking an index is the 'sensible' thing to do for those with risk averse dispositions. And yet another technical expert presents evidence of his or her capacity to get you in and out of markets at exactly the right time using elaborate charts. It is hence apparent, given all these conflicting perspectives, that behavioural finance is a critical factor in the success of each unit trust manager.

Essentially each manager needs to decide on a 'mix' of different investment techniques according to what he/she deems to be most important in security timing and selection. Managers use a number of different investment appraisal techniques and can be generally classified according to the following:

Value managers use "buy and hold" tactics in an effort to outperform the market. They try to find 'cheap' companies who are trading at less than their perceived "intrinsic value", the price the underlying company is worth. Investment specialists Warren Buffet and Peter Lynch attest to this technique that has a lineage back to investment godfather Benjamin Graham. Classic value management techniques include using fundamental analysis to determine a security's 'intrinsic value'. Characteristically this includes looking for a security with a low Price-Earnings (P/E)

ratio and high dividend yield. Growth managers look to invest in securities showing rapid growth in sales and earnings. It is believed that this rapid growth will be reflected in the share price. These managers prefer to look at the earnings potential and related industry of a security. Passive managers use the indexing techniques discussed above. Quantitative managers believe that using statistical/mathematical techniques and modelling to screen out and select securities is most beneficial. Technical managers select stocks according to observed patterns of price behaviour with the belief that price is the only variable that needs analysis. In conflict with the EMH they believe that the historical price pattern alone predicts the future direction of the stock price and use charts and graphs to depict this. The EMH states if all past information is incorporated in the price then it should be impossible to consistently beat the market using technical analysis and the like. Most studies have found this to be the case although a recent study by Lo, Mamaysky, and Wang (2000) has casted some doubt on this. Lo, Mamaysky, and Wang (2000) found that found that stock-price signals used by technical analysts may actually have some modest predictive power.

Given all the above tactics it is imperative that investors understand that there is no one pre-eminent mix of the strategies or individual strategy that will produce the best results. Each manager's mix of the above will be determined according to his/her risk profile, tax status, size (of managed assets), client requirements (mandate) and time horizon (returns in the short term or long term). Academic theory maintains that the greater the risk investors are willing to take on, the greater their expected return.

Having discussed the primary factors influencing the performance of General Equity unit trusts we can now continue with an analysis of the methodological development of performance evaluation and the tools used to determine performance persistence.

2.4. Evaluating Unit Trust Performance

Evaluating portfolio performance consists of measuring both the realised return and the differential risk of a particular portfolio. Given the risk that investors face, it is inadequate to consider only the absolute returns from various investment alternatives. Although all investors prefer higher returns, they are also risk averse. To evaluate

portfolio performance properly, it is important to determine whether the returns are large enough given the risk involved. In correctly assessing the performance of unit trusts it is therefore important that performance is adjusted for risk.

This section gives an overview of methodological development of performance evaluation. Traditional performance evaluation of unit trusts was pioneered in the 1960's (Treynor (1965), Sharpe (1966), and Jensen (1968)). They developed fundamental performance evaluation techniques using the CAPM as a basis. These original techniques have since expanded to include variations largely associated with the Arbitrage Pricing Theory (APT) (Ross, 1976). The CAPM and APT are considered the two major asset pricing models used in the valuation of risky assets.

Following the development of modern portfolio theory, the choice of asset pricing model determines the benchmark used and therefore has important consequences for performance evaluation.

The CAPM is the equation of the security market line (SML) showing the relationship between the expected return and beta. One of the CAPM's main assumptions is that "the market portfolio is an observable economic variable, the totality of wealth held at risk" (Ross, 1977). This portfolio needs to therefore exhibit the qualities of mean-variance efficiency. The traditional use of the CAPM as a means to define this benchmark portfolio implicitly assumes stationarity in the systematic risk coefficient of the managed fund. According to the critiques done by Roll (1977, 1978, 1980 and 1981) this is a fairly problematic assumption. The CAPM assumes that the market portfolio exists at a point of tangency with the Markowitz efficient frontier. Theoretically the market portfolio is an efficient, completely diversified portfolio containing all risky assets in the economy. As Roll pointed out, the problem arises in trying to find a realistic proxy for the market portfolio. By definition, the S&P 500 and the ALSI 40 are not completely diversified and therefore may suffer from bias. This lack of completeness can create what's commonly known as a "benchmark error" as set out by Roll. This error emerges because an inefficient proxy could give a higher or lower Beta than true Beta and this would result in the true SML residing above or below the hypothesised SML. In addressing this problem Grinblatt and Titman (1993) introduced a performance measurement process that did not require

benchmarks whilst Daniel, Grinblatt, Titman and Wermers (1997) developed benchmarks based on the characteristics of stock held i.e. firm size, book-to-market ratios. The problems associated with the CAPM relating to the instability of its beta estimate over time, the "benchmark error" and particular anomalies in the model (small size effect, low P/E ratio effect, high book-to-market effect etc.) led Ross to develop an alternative pricing model known as the APT in 1976.

The APT has fewer less restrictive assumptions than the CAPM. Its only 3 assumptions are that markets are perfectly competitive, investors prefer more wealth to less wealth and there is a multi-factor stochastic return generating process. The APT therefore negates the CAPM assumptions of a quadratic utility function, normally distributed returns and mean-variance efficiency of the market portfolio. The APT model is therefore more general than the CAPM in that it allows for more than one risk factor to underlie stock returns. A stock's expected rate of return using the APT is equal to the risk-free rate plus k risk premiums based on the stock's sensitivities to the k factors. The k factors are usually macroeconomic related variables. The candidates for these factors include GDP growth rate, exchange rate, etc. There are also a number of problems associated with using the APT. Firstly, the k factors are not specified by the theory and hence the theory is not testable. Secondly, the APT cannot explain how micro-level irregularities such as firm-specific variables affect returns.

The use of these different asset pricing models is fundamentally violated in nature by the implicit function of fund management which continuously adjusts unit trust asset holdings in order to pre-empt both positive and adverse developments in the different segments of the securities market. Hence, the management philosophy is one of non-stationarity in the portfolio.

Both Lehmann and Modest (1987) and Biger and Page (1993) highlighted that the Jensen measure differs significantly when using either the CAPM or the APT asset pricing models. These differences are derived due to the choice of proxy (benchmark) used in each different pricing model. There are two types of benchmarks commonly used to gauge fund performance.
These are

1. Market indexes which track the total returns of all the securities in the market or a particular segment of the market, e.g. The S&P 500 Index or the ALSI 40 index.
2. Peer group averages which measure the average returns of a group of funds with similar investment goals and policies.

In highlighting the importance of benchmark selection one needs only refer to work done by Ippolito (1989) who found evidence of positive abnormal returns. Elton et al (1992) however, disproved Ippolito's results by showing that the benchmark chosen by Ippolito caused an inaccuracy. When using a multifactor model, Elton et al (1992) found that abnormal fund returns were negative on average. Additionally Grinblatt & Titman (1994) find that unit trust performance is sensitive to the choice of benchmark. Finally, Carhart (1997) argues in favour of a four-factor multi-index model, which includes factors for size, book-to-market equity and the one-year momentum in stock return. The application of different Asset Pricing models has resulted in the derivation of a number of specific performance evaluation techniques.

Central to the use of both Asset pricing models is the assumption of a risk free rate of return. In choosing a risk free rate there are number of different factors that need to be considered.

2.4.1 The Risk-Free-Rate

The risk free rate (RFR) is the rate of return of an asset that should have zero variance and zero covariance with any other asset, in other words it is an asset with no risk. A 'riskless' asset provides investors with a small but positive real return in order to compensate them for the temporary illiquidity they experience whilst holding the asset. The alternatives for the RFR are based on the theoretical assumptions that the RFR needs to be a zero-coupon, default free asset with a time to maturity that approximates the investors holding period. Such an asset will provide the assets promised return because there is no default risk, no reinvestment risk as it is a zero-coupon security and no price risk, because the asset matures at the end of the holding period. This assumption of a RFR in the economy is essential in asset pricing theory. This is due to the fact that Sharpe's assumption of a zero variance asset (risk-free) allowed portfolio theory to develop into capital market theory (Reilly and Brown, 2000).

Due to the fact that the government has the right to raise taxes in order to meet its debt obligations, its obligations are generally regarded as risk free. The problem arises in whether to use short term or long-term 'risk free' rates. When using long term investment horizon's in terms of government bonds the expectation of future inflation implicit in the bond yield curve is subject to variation as the expectation of inflation relies on a forecast that may not accurately reflect the inflation rate that actually prevails over the bond life. Hence the long-term government bond rate cannot strictly be said to be 'risk free'. The counter argument is that for investments of longer duration, using the short-term rate for the risk-free rate implies an acceptance of re-investment rate risk, the risk that the short-term risk-free rate will change over time. Thus the long bond rate is often used in practice when applying the CAPM.

In Firer's 1993 study on "Estimating the Return Parameters of the Capital Asset Pricing Model" he summarises the problem by saying that 'it appears that although various theoretical arguments have been advanced against the use of T-bills, short-term Government securities seem to be the most widely advocated for use in CAPM applications. In South Africa, a variety of approaches to the problem have been used. This may well reflect the fact that interest rates are managed by the authorities to a greater or lesser extent, and no instrument is really riskless.

The reputable Michael Powers (of Investec) agrees that the appropriate rate to use is the short-term (3-month) T-bill rate as it is generally less volatile and better reflects a true market determined rate

2.4.2 Performance evaluation techniques

Recognizing the necessity to incorporate both return and risk into the analysis of portfolio performance, three researchers, Sharpe (1966), Treynor (1965), and Jensen (1968) developed measures of portfolio performance. These measures are often referred to as the composite (risk-adjusted) measures of portfolio performance, meaning that they incorporate both realised return and risk into the evaluation. These techniques were unconditional measures in that they assumed that no information about the state of the market as a whole needed to be used in the calculation. Hence

they assumed that expected risk and return remained constant over time. Jensen's alpha is calculated as the intercept from a regression of the return, in excess of the risk-free rate, of the managed portfolio on the excess return of a benchmark portfolio. It is imperative therefore that the benchmark selected is appropriate. On the other hand the Sharp Ratio (designed by William Sharpe, 1966) divides the average portfolio excess return by the standard deviation of returns for that period. It therefore measures reward to total volatility. Treynor's measure is similar to the Jensen measure but uses systematic risk (Beta) instead of total risk in its calculation. When using both the Treynor and Jensen measures it is required that the Beta coefficient exhibits the properties of stationarity and stability. Upon analysis however it shows that at least one of these, viz stability, cannot reasonably be assumed (Gilbertson and Vermaak, 1982). Consequently these two measures of performance should be treated with caution when calculating unit trust performance. Emphasis on the Sharpe measure avoids this problem but is itself controversial in its assumption that total variability is the appropriate measure of risk. There are a number of reasons for the Jensen measure being the most widely used as set out by Christensen (2002):

1. The interpretation of the Jensen measure is the risk-adjusted excess return measured in percentage points, which is much easier to communicate to private investors than the Sharpe and Treynor measures that measure the risk-adjusted excess return as a ratio.
2. The Jensen measure can easily be estimated from an asset pricing regression, which furthermore provides us with a measure of statistical significance.
3. The Jensen measure is seen relatively to a benchmark.
4. When determining the Jensen measure from a regression, one can take account of a non-constant risk-free rate, whereas the Sharpe and Treynor measures use a time average of the risk-free rate.

Friend & Blume (1970) argue that the Jensen measure is superior to the Sharpe measure because it can be applied to both efficient and inefficient securities and portfolios, whereas the Sharpe measure can only be applied to efficient securities and portfolios. The Jensen measure however, is known to suffer from statistical bias due to that fact that it does not account for the creation of time-varying risk when managers use active investment strategies. This is because it employs historical

average returns in estimating current and future expected performance (Admati and Ross, 1985, Dybvig and Ross, 1985, Grinblatt and Titman, 1989). An alternative approach, conditional performance evaluation, is used to address the bias created in unconditional performance evaluation. This approach inserts a number of market variables into the performance measurement models and the subsequent analyses are conditioned upon these market variables. From a theoretical perspective, this approach is useful in examining the trading behaviour of fund managers. Numerous conditional studies of performance have been conducted, these include Grinblatt and Titman (1989) and Ferson and Schadt (1996). Grinblatt and Titman (1989) designed a new measure known as the Positive Period Weighting measure. Ferson and Schadt (1996) developed a conditional measure of performance using predetermined information variables, their study uses factor beta's which are conditioned on the lagged public information variables such as the short term interest rate, dividend yield, term spread and default spread.

A great deal of prior research has attempted to detect and distinguish between the timing ability and selection ability of portfolio managers (Treynor and Mazuy (1966), Jensen (1968), Hendricksson and Merton (1981). Although this study does not attempt to distinguish between portfolio manager's market timing ability and stock selection ability, a discussion of the differences between the two is useful in interpreting and understanding the drivers of unit trust performance.

2.4.3. Timing Ability

In its purist form, market timing essentially involves managing investments by shifting funds between a market-index portfolio and a risk-free asset such as treasury bills, depending on whether the market as a whole is forecasted to either outperform or under perform the security. In practice managers who attempt to time the market move between various classes of assets to either decrease risk (diversify) or increase performance. Market timing thus focuses primarily in the short-term, this is in contrast to passive buy and hold strategies but the potential payoffs far exceed those of the alternative long-term method. This has an important inference in the context of the EMH. The hypothesis implies that managers should not be able to gain superior

returns as they all have access to the same information, it should not therefore be possible for any one manager to gain superior returns from his/her market timing ability when all managers have identical predictions of future market movements.

With regard to methodology, most prior studies generally supplement standard factor model regressions with a term that captures the convexity of fund returns resulting from market timing. Commonly used methodology is normally the same or an adaptation of the methods set out by Treynor and Mazuy (1966) and Hendricksson and Merton (1981). Treynor and Mazuy (1966) found that if a mutual fund manager increases a portfolio's exposure to equities in advance of positive excess market returns, then that portfolio would realise excess returns. Hendricksson and Merton (1981) develop a similar model of market timing by capturing the convex relation between the return of a successful market timer's portfolio and the return of the market by allowing the portfolio's beta (risk) to alternate between two levels depending on the size of the market's excess return.

There is a large amount of literature that corroborates with the EMH in reference to tests of the market timing ability of fund managers. Treynor (1980) found that future market movements were implicitly uncertain and that there would be severe consequences for those investors who did not correctly foretell market movements. Similarly, Sharpe (1975) investigated the influence of the quality of timing predictions using a market timing strategy to switch between the market index and T-bills on the New York Stock Exchange (NYSE). He concluded that market timing is nearly impossible to achieve due to the fact that market timing relies on predictions of future price movements. His study revealed that gains from market timing are likely to be modest and that forecasts had to be accurate 83% of the time before any profit could be realized. Ward and Stansfield (1980) and Jeffrey (1984) did similar studies in the UK and again in the US and both reached almost identical conclusions. Kon and Jen (1979) found that many managers attempt to partake in market timing activities due to varying levels of Beta.

More importantly, Firer, Ward and Teeuwisse (1987) analysed the JSE and reached the conclusion that managers need to accurately forecast market movements 87% of the time in order realize superior returns relative to a "buy and hold" strategy.

Additionally, Firer, Gray, Sandler and Ward (1996), found analogous evidence from the JSE and concluded that "as attractive as the potential returns from market timing within a family of unit trusts might appear to be, the levels of predictive accuracy required to beat a buy-and-hold strategy with certainty are extremely high", the level of accuracy required for an investor to beat the "buy-and-hold" return was found to be between 87% and 90%. Thompson and Ward (1995) reached the conclusion that the JSE was operationally efficient and therefore that in such a market, market timing should not, except for a small group of market specialists, lead to abnormal returns. Chapman and Smith (1993), Biger & Page (1994) and Oldfield & Page (1997) conclude that there is little evidence of market timing ability amongst portfolio managers of South African unit trusts.

In addition to the accuracy requirement, Firer et al. (1992a) found that the potential for loss was greater than the potential gain from a market-timing strategy. They also found that the 'portfolio', on average, had to be changed in over 40% and 50% respectively of the periods studied. The more changes required, the greater the possibility of an incorrect decision being made.

A principal reason for market timings' inability to manufacture superior returns resides in the expensive transaction costs associated with this technique. It is due to these high transaction costs that many studies have identified market timing using derivatives as a valuable alternative (Waksman, Sandler, Ward and Firer (1997), Firer C, Beale JP, Edwards MD, Hendrie JN and Scheppening (2001)).

It can hence be said that prior research by and large negates the ability of managers to create superior performance through market-timing techniques due to the fact that the risks and transaction costs involved offset the potential returns; this leaves the average investor in a curious disposition as to the merits of attempting to time the market and acts as another good advocate of the EMH.

2.4.4. Stock Selection Ability

Security selection refers to the process by which assets are chosen within each asset class, once the proportions for each asset class have been defined. This is an important

test in terms of the EMH as mutual fund managers are highly trained individuals who work full time at investment management and they are therefore the most likely to be able to select undervalued stocks out of the world of investors.

There are a number of different approaches to security selection. Firstly one can focus on fundamentals and decide whether a stock is under or overvalued relative to these fundamentals, secondly one could use charts and technical analysis to decide whether a stock is on the verge of changing direction and thirdly one could make use of trading ahead of or on information releases to increase the value of the firm. Studies of stock selection, dating back to Jensen (1968), generally use the intercept of factor model regressions to measure abnormal returns generated from picking stocks that outperform a risk-adjusted benchmark.

2.4.5. Evidence of market timing and stock selection ability.

The general conclusion reached in the literature from the US (Jensen (1968), Biger & Page (1994) and Malkiel (1995)) is that mutual funds have not been able to generate excess returns net of expenses. Blake and Timmerman (1998) found similar evidence for the UK. Literature showing limited evidence of returns being attributable to the timing and selectivity ability of managers include (Hendricksson and Merton (1981), Chang & Lewellen (1984), Lee & Rahman (1990), Grinblatt & Titman (1993)) all US. In all of the above research it can be noted in concurrence with reasoning from Oldfield and Page (2002) that professional fund managers exhibit positive (or negative) abilities when more "sophisticated" methodologies are employed. Also, approaches attempting to model the non-stationarity of the risk parameters generally illustrate evidence of timing and selection skills. More conclusive evidence discovered by Grinblatt and Titman (1989) found that funds intent on aggressive growth realised superior performance. Also, in evidence from the UK, Black, Fraser and Power (1992) found that funds by in large created superior returns. Otten and Bams (2002) did a European cross-country analysis and found that the majority of European countries and their funds do not outperform relative benchmarks. Limited evidence from South Africa suggests that there is little evidence of South African unit trust fund managers exhibiting superior selection and timing skills. Gilbertson (1976)

in Firer et al (2001) supported this evidence when calculating Jensen's alpha for 11 unit trusts over the period 1970-1976. Knight and Firer (1989) found that some of the unit trusts did outperform the market on an unadjusted risk basis but that on the whole unit trusts underperformed the market. In a more recent study using monthly bid prices for seven unit trusts in the General Equity category for the period 1989-2002, Akinjolire and Smit (2003) find negative Jensen alpha's and no evidence of market timing.

This section discussed the various techniques used to measure performance. In addition it gave an overview as to the key factors affecting both the performance of General equity unit trusts and the procedure of performance measurement. Evidence from prior literature is given in each of the area above. This provides an understanding of performance and the measurement of performance as well as giving a firm basis upon which this study is able to justify the methodology uses in its testing. In a similar manner, a discussion of unit trust performance persistence and the tools used to test for such persistence is given below.

2.5. Unit Trust Performance Persistence

The second aspect of this study tests the existence of persistence in the performance of South African General Equity Unit Trusts. This test is indicative of market inefficiencies which some, but not all, fund managers are able to exploit and is important in proving whether fund managers add value and whether past fund performance information should be taken into account by investors when making their investment decisions. Should no evidence of persistence be found then knowledge of past performance is of no use when choosing a likely high performance fund or in avoiding a probable below-average performer. Theoretically, given all the evidence above in support of strong-form EMH it would seem unlikely that a professional fund manager can sustain superior returns for a long period of time. Furthermore, given ever-changing market conditions it would be optimistic to assume that a successful strategy used in one period will repeat in the future.

There is a large amount of literature that dissects performance persistence with reference to the "Hot Hand" effect. The "Hot Hand" effect was originally deemed to be a sporting phenomenon but has since elaborated to incorporate a number of different scenarios including finance. Financially, this theory is merely a means of explaining how performance persistence can occur sporadically in the short-term when the proposed "players" (fund managers) are "hot" (provide superior returns). This theory therefore imparts that short-term persistence will not continue going forward. A number of articles studying mutual fund performance have discovered performance persistence embodying the "hot hand" theory; these include Grinblatt and Titman (1992), Brown and Goetzmann (1995), Malkiel (1995), Elton, Gruber and Blake (1996), Carhart (1997), Wermers (1997) and Bollen and Busse (2002). The bulk of these studies agree that the short-term is 1 to 3 years and conclude that inferior performance persists to a greater degree than superior performance in the short-term.

There are a number of very important issues that need to be addressed in testing for persistence. These include

1. Survivorship Bias: whilst this is a substantial problem in the USA because unit trusts are frequently being disbanded, within South Africa and particularly in our universe of study (Jan 1998-Dec 2003) this does not pose a significant problem.
2. Selection Period: It is commonly acknowledged that the longer the time period, the more thorough the results. This is especially important when studying long-run persistence as well as when the market as a whole experiences large amounts of volatility. Meyer (1997) attests to the importance of the selection period.
3. The appropriate technique for risk adjustment: whether to use CAPM, APT etc.

There are a number of various measures that can be used when testing for persistence in unit trust performance. Malkiel (1995) shows the percentage of repeat winners and constructs a Z-test for repeat winners in order to test the hypothesis of no winning persistence. An alternative measure based on methods used by Khan and Rudd (1995) involves constructing winner-loser contingency tables. This measure ranks unit trust returns relating to quartiles in the formation and holding periods. Persistence is then

investigated by testing whether any unit trusts persistently repeated their performance by comparing quartile rankings in the holding and formation periods. The Chi-squared test is an extension of the Khan and Rudd contingency table tests and is used to test the independence of two variables in a multinomial sample. Spearman's rank correlation test is an additional test of persistence used to analyse successive period performance rankings. This test is performed after ranking unit trusts according to their returns in a specific period, and analyses if rankings have changed from period to the next. A further measure is to simply use ordinary least squares regression relating past and current unit trust performance to determine if there is persistence. This is done by regressing the ranks of unit trust returns of succeeding periods against preceding periods, this should then give the regression line a slope equalling zero if no relationship between historic and future relative performance exists. Having mentioned the techniques available in testing for performance persistence, it is important to review the prior literature on this topic in order to determine the most appropriate methodology to use in the study and whether there is a likelihood of this study finding evidence of persistence.

2.5.1. The Evidence on Persistence

Internationally, numerous studies have been conducted of the investment performance persistence of managed funds in both the US and the UK. Findings in the US, UK and other developed countries are very useful for comparison as these countries have mature and developed unit trust markets. As mentioned above, a number of studies have identified short-term persistence; the long-run persistence of fund managers is a far more important test in terms of the EMH and has been identified in a limited number of international studies. Grinblatt and Titman (1992, 1993) and Elton et al (1996) found evidence of persistence in expense-adjusted returns in the long-run. Carhart (1997) finds that long-run persistence is largely driven by persistence in expense ratios rather than in investment performance. He finds that unit trusts with the highest net returns during one year beat unit trusts in the lowest decile by about 3.5 percent during the following year. He argues that the superior performance of the best unit trusts is as a result of the momentum effect a proposed by Jegadeesh and Titman (1993). After including a momentum factor in his return model, Carhart (1997) finds that persistence largely disappears, except among the lowest performers, where it

arises from persistently high expenses. Carhart (1997) results show that top performing unit trusts generate superior returns simply by buying and holding top performing stocks. In studies carried out in the UK, Blake and Timmerman (1998) find evidence of persistence for both the best and worst performing funds whilst Quigley and Sinquefield (1998) find persistence for only the worst performing funds.

South Africa exhibits similar market conditions to first world countries yet it is predisposed to emerging market volatility which is likely to effect results when testing for long-run persistence. In related South African literature Gilbertson and Vermaak (1982) found no persistence for the seven-year period leading up to 1981. Knight and Firer (1989) indicated that some persistence did exist when using risk adjusted performance measures for the period 1977-1986. Meyer (1997) examined the persistence of South African unit trusts using Jensen's alpha in a CAPM framework with the ALSI as a benchmark for the period 1985-1995. She used one-year, two-year and four-year intervals to determine whether the repeat winner (or loser) phenomenon exists. Meyer (1997) concluded that 'Persistence in performance seems to exist and it appears to be a guide to beat the pack in the long-run, the longer the evaluation period, the better the results'. More specifically she found that the repeat winner phenomenon exists over two-year periods and the repeat loser phenomenon is present over one-year, two-year and four-year time periods and at a much higher frequency. Restrictions highlighted by Meyer (1997) relate to the small number of funds in her sample as well as the lack of significance in the results.

Contrary to previous studies, Von Wielligh and Smit (2000) tested persistence using the APT as well as the CAPM in order to determine if the choice of pricing theory implicated South African results. They used three models of performance measurement: CAPM, a two-factor APT model as set out by Van Rensburg and Slaney (1997) and a study specific three-factor APT. They found that the three-factor model did not perform substantially better than the two-factor model and that the two-factor model tends to account for most of the cross-sectional variation in the expected returns. The study also asserted that the CAPM does not explain the relative returns of the different portfolios and that any study done on performance persistence is entirely benchmark and model dependant. They concluded that there is evidence of both short-term and long-term persistence in performance of South African unit trusts. Firer et al

(2001) used Sharpe's measure to test the persistence in general equity and fixed income unit trust performance over the period 1989-1999. Although they did find evidence of persistence, their main conclusion was that all prior studies investigating persistence in performance (both locally and internationally) are inconclusive. The study quotes "Shorter term studies indicate a possible link between past and future performance, but the specific time period analysed, its length and testing methodology employed, influence the conclusions which are drawn". Particularly in their study they recommend that choosing equity trust winners from the previous two years and holding them for the next two years is the best long-run strategy to adopt. Firer et al (2001) also deduce that their results were not statistically significant and attributed it to the data set, methodologies and the risk-adjustment used in the study. Using ranking, Chi-squared tests and contingency tables for the period 1985-1994, Smith and van der Merwe (1999) argue that there is little significant evidence of persistence and go on to say that investors should place little or no value on historic performance when choosing a unit trust. There are large problems with South African literature based on periods before 1995 due to the bias created because of small numbers of unit trusts in existence.

This section discussed factors effecting the measurement of unit trust performance persistence, commonly used tools of how to test for persistence and the prior literature on this subject. Again, like with the analysis of performance above, this discussion provides an understanding of performance persistence and assists as justification in the choice of methodology used in testing for persistence.

What follows is a review of the sample selection and data used in this study, this leads on to the methodology used in testing for general equity unit trust performance and performance persistence.

3. Methodology

3.1 Sample Selection and Data

Unlike the extensively studied US and UK unit trust fund markets, the South African unit trust market is fairly immature. South African unit trust assets increased by R50.5-billion to R230.3-billion for the year ended 31 December 2003 with net inflows doubling to a record R38.9-billion for the year. Assets under management are said to have trebled in the past five years despite volatility in worldwide markets. General Equity unit trusts invest in selected shares across all economic groups and industry sectors of the JSE Securities Exchange as well as across the range of large, mid and smaller cap shares. Their exposure to equities typically exceeds 75% of the market value of the fund and their main objective is to achieve medium to long-term capital growth.

Our sample reviews 48 General Equity unit trusts in existence over the six-year period 1 January 1998 to 31 December 2003. An assumption was made that in order for tests of persistence to be statistically significant, unit trusts had to have been in existence since 1 January 2001 (3 years), according to this assumption a total of 13 unit trusts were removed from the study for the period in order to circumvent possible problems relating to survivorship bias. Thus our total sample consists of 35 General Equity unit trusts (*Appendix A*). 35 unit trusts should infer a sample selection large enough to successfully dissolve concerns over bias created by incomprehensive or "thin" data. The selection period chosen appraises data that evidently has not been previously researched and will hence provide contemporary evidence of performance and performance persistence. This should hopefully augment the prior South African literature on this subject.

South African legislature requires that companies managing unit trusts must publish their earnings on a quarterly basis, databases such as I-NET Bridge and Datastream however, review unit trust returns on a daily basis. Using I-NET Bridge to generate the sample data, the following data was collected:

1. Weekly returns of all 35 unit trusts in the sample for the period 1 January 1998 to 31 December 2003.

2. Weekly returns of the All Share Index (J203) for the period 1 January 1998 to 31 December 2003.
3. The quoted Risk Free Rate (RFR) as given by I-Net Bridge's quoted weekly 3-month NCD rate.
4. Weekly returns of the Resources index (J000) for the period 1 January 1998 to 31 December 2003.

Weekly returns of the Financial and Industrial index (J250) for the period 1 January 1998 to 31 December 2003

3.2. Performance measures and Benchmark selection

This study adopts the following performance measuring techniques in order to calculate the performance and hence test the performance persistence of South African General Equity unit trusts.

3.2.1. Jensen's Alpha against the All Share index (ALSI) in a CAPM framework.

Consistent with the majority of prior South African research this study will use the ALSI index as its benchmark within the CAPM framework. The ALSI index is the JSE's most comprehensive market measure and is calculated using the market capitalisation weighted method. Calculating Jensen's alpha relies on a number of CAPM assumptions including unconditional mean-variance efficiency of the benchmark portfolio, the existence of a risk-free asset, stationarity of Beta and no binding constraints on investors. These assumptions are known to create statistical bias and could pose a problem in that they do not account for the variation of expected returns over time. An advantage of using this unconditional measure is that it is relatively straightforward to calculate and enjoys widespread international recognition.

As developed by Jensen (1968) this measure calculates weekly excess returns by subtracting the risk-free asset (weekly 3-month T-Bill rate) from individual unit trust weekly returns. Benchmark (ALSI) weekly returns are adjusted for risk in a similar manner. The Jensen Alpha's are then calculated for each different unit trust in each

period of the study (half-yearly, yearly, 2-yearly and 3-yearly) by individually regressing weekly risk-adjusted (return unit trust – RFR) on risk-adjusted market returns (ALSI returns – RFR). The intercept of each regression line is recorded as the ALPHA and the coefficient as the BETA. In addition, p values are registered in order to test for the significance of both the alpha and beta values. The R-squared value of each regression was also recorded in order to show the correlation between ALSI excess returns and individual unit trust excess returns.

This can be seen from the following equation:

$$\alpha_{it} = [R_{Pit} - RFR] - \beta_{it} [R_{Mt} - RFR] + \varepsilon_{it} \quad (1)$$

Where: β_{it}: the beta coefficient for unit trust i in time t

α_{it}: the unconditional alpha coefficient, which measures the risk adjusted performance of unit trust i for period t

$\varepsilon_{t:}$ the error term over time t

R_{Mt}: the weekly return of the benchmark (ALSI)

R_{Pit}: the weekly return of the unit trust's portfolio

RFR: the risk-free 3-month Treasury bill rate

3.2.2. Jensen's Alpha calculated using a 2-Factor APT model (as defined by Van Rensburg and Slaney (1997))

Within a South African context there is a body of evidence (Van Rensburg and Slaney (1997), Von Wielligh and Smit (2000)) advocating that a two-factor model incorporating the main two different sectors of the JSE, namely the resources and financial/industrial sectors, was better at predicting and evaluating asset pricing than the traditional CAPM model. In order to provide a comparative measure of performance it was therefore decided to calculate performance using this method.

The two-factor APT model is defined according to the following equation.

$$\alpha_{it} = [R_{Pit} - RFR] - \beta_{it} [RESOURCES_t - RFR] - \beta_{jt} [FINANCIAL / INDUSTRIAL_t - RFR] + \varepsilon_{it} \quad (2)$$

Where : $RESOURCES_t$: the weekly rate of return of the All Resources Index (J000) in period t

: $FINANCIAL/INDUSTRIAL_t$: the weekly rate of return of the Financial and Industrial Index (J250) in period t.

The Jensen Alpha's were then calculated for each different unit trust in each period of the study (half-yearly, yearly, 2-yearly and 3-yearly) by individually regressing weekly risk-adjusted (return unit trust – RFR) on both the risk-adjusted returns for the Resources (J000) and Financial/Industrial (J250) index returns. Again, the intercept of each regression line is recorded as the ALPHA and the coefficients for each factor as the BETA values. Again p values are registered in order to test for the significance of both the alpha and beta values. The R-squared of each regression was also recorded in order to show the correlation between factor excess returns and individual unit trust excess returns. In addition the multiple regression output produced an F value for each regression run; this value is used as a tool for testing the regression.

3.2.3. Jensen's Alpha calculated using a single factor APT model (Unit trust risk-adjusted performance against a peer group benchmark)

This study further examines performance and persistence in performance using a peer-group average as a benchmark (Allen and Tan, 1998). Using a peer-group average as a benchmark has never been done before in a South African study of this nature. It simply calculates unit trust performance against the General Equity unit trust industry average. Hence this study compares the relative performance of the sample funds themselves. The benchmark used is the mean risk-adjusted return for all general equity unit trusts in our sample for each specified period. This can be given by the following equation:

$$\alpha_{it} = [R_{Pit} - RFR] - \beta_{it} [R_{MGEt} - RFR] + \varepsilon_{it} \quad (3)$$

Where: R_{MGEt}: The mean return of all General Equity unit trusts for specified time period t.

The Jensen Alpha's were then calculated for each different unit trust in each period of the study (half-yearly, yearly, 2-yearly and 3-yearly) by individually regressing weekly risk-adjusted (return unit trust – RFR) on risk-adjusted mean General Equity returns. The recorded output data is the same as the above two methods.

3.2.4 Absolute Returns

In addition to risk-adjusted performance measures, absolute (raw) returns were also scrutinized, this is an important test as absolute returns are generally the first port of call for prospective investors. Absolute returns were calculated for each unit trust in each specific period simply by taking the closing value of the unit trust at the end of a period and dividing it by the opening value of the unit trust at the beginning of the period. This can be given by the following equation:

$$AR_{it} = (CV_{it} / OV_{it}) - 1 \qquad (4)$$

Where: AR_{it}: Absolute return of unit trust i in period t.

CV_{it}: Closing value of unit trust i in period t.

OV_{it}: Opening value of unit trust i in period t.

Due to the fact that many unit trusts were not in existence for the full 6 year period, it was assumed that in order to calculate the performance of a particular unit trust that trust had to have a full data series for that specific time period. In other words, Unit Trusts were rejected from specific time periods if they did not have a complete set of closing values for each week in a particular period. Regressions were run using STATISTICA. Also, where the dates of individual weeks overlapped a change in time period, the calculation of performance for that time period was assumed to begin at the start of the first complete week in that period. An example of the performance evaluation techniques used in calculating the returns for ABSA can be seen in *Appendix B*.

3.3 Testing for Persistence

By and large the statistical focus of this study lies in testing the calculated general performance of each individual unit trust for persistence over the different specified time periods. This study will test each different overall performance measure for persistence using commonly used techniques found in the majority of prior literature on this topic (Khan and Rudd (1995), Allen and Tan (1998), Von Wielligh and Smit (2000), Firer et al (2001). This includes contingency table analysis of winners and losers and Chi squared tests on these tables, ordinary least squares regression analysis of CAPM risk-adjusted excess returns and Spearman Rank Correlation Coefficient analysis of successive period performance rankings. These tests will be conducted in the short-term (testing for persistence in 12 half-yearly and 6 yearly periods) and in the long-run (testing for persistence in 3 two-year and 2 three-year periods).

3.3.1. Contingency table analysis of winners and losers (Khan and Rudd, 1995)

A contingency table is simply a table (or matrix) of counts applicable when the information is nominal in nature. In this case the period (half-yearly, yearly, 2-yearly and 3-yearly) will form the columns whilst the associated performance will form the rows. Tables including all the data for each given time period (tables depicting half-yearly, yearly, 2-yearly and 3-yearly results for the six-year period) are then constructed. Unit trust returns (for each specific performance evaluation technique) are ranked and then assigned as "winners" or "losers" depending on whether they performed above or below the median in the formation and holding period. Persistence can then be investigated by testing whether in the holding period; unit trusts significantly repeated their performance in terms of their rank in the formation period. These contingency tables also provide an overall view of the probability of a unit trust manager being able to maintain past performance. The contingency tables are then formed by making counts of the number of unit trusts that either remained in each different ranking group, fell to a lower ranking group or rose to a higher ranking group. Examples of contingency tables are shown in *Appendix C*.

3.3.2. Chi squared tests on these tables

In order to provide a more substantive measure of consistency from one period to the next, the counts in the contingency tables were tested using the Chi-squared test statistic in STATISTICA (output as in *Appendix C*). The Chi-squared (χ^2) is a nonparametric measure that determines if there is some degree of dependence between the two variables in the contingency table. In this case it will test whether there is a relationship between prior period and successive period returns. Specifically, the counts found in each cell of the contingency tables were tested to establish the goodness of fit between observed counts and counts that were the result of random performance. This study calculates for significance at the 5% level.

3.3.3. Ordinary least squares (OLS) regression analysis of risk-adjusted excess returns.

An OLS analysis on risk-adjusted returns was performed using STATISTICA to determine the slope of the relationship between two periods as well as the statistical significance of the relationship. The returns tested in the regression include Jensen's 2-Factor alpha's, Peer Group alpha's and Absolute Returns for each particular time period. In each period, each individual unit trust's 'initial' return was paired with the return it gained in the subsequent 'successive' period, these 'initial' and 'successive' pairings were then grouped to make up the independent and dependant variables in our regression. OLS regressions were then run for each type of calculated return in each different period in our sample in order to test if there is a significant relationship between the independent and dependant variables and hence test for persistence. The OLS scatterplot regression output can be seen in *Appendix D*.

3.3.4. Spearman Rank Correlation Coefficient analysis of successive period performance rankings

Finally, Spearman rank correlation coefficients were calculated for each of the performance evaluation technique (2-Factor alpha's, Peer Group alpha's and Absolute Returns) in each period (half-yearly, yearly, 2-yearly and 3-yearly). Correlation

coefficients are determined once the performances of the unit trusts have been ranked for each period. The correlation coefficient is a measure of the linear association between two variables and is calculated using STATISTICA. The coefficients range between -1 and 1: -1 indicates perfect negative correlation, 1 indicates perfect positive correlation and a zero value indicates that there is no association between the data sets. Values found between these two extremes give an indication of the degree to which ranks from one year are similar to ranks from the subsequent year. During the period 31/12/1997 to 31/12/2000, a number of currently operating unit trusts were not yet in existence, a relative ranking system was thus adopted to ensure that the number of ranked unit trusts in each coefficient calculation remained constant; this can be seen in *Appendix F.*

3.3.5. Analysis of Individual Unit Trust Performance Persistence

Given that the above techniques do not hold explanatory power of individual unit trust performance persistence; this study adopted a simple analysis of how individual unit trusts persist in their performance going forward. This was done by summing and averaging the ranks of each individual unit trust in the sample and for each specific period of time. For example, the half-yearly ranks for ABSA were summed (12 observations) and then divided by the number of observations to get an average rank. This procedure was done for each of the 3 different performance evaluation techniques and for each of the observed periods (half-yearly, yearly, 2-yearly and 3-yearly). It was decided not to use this test over the two 3-year periods in the sample as there are too few units trusts consistent in each period (16) and one cannot assume a unit trust to be persisting having reviewed only 2 sample results. An obvious shortfall in this methodology rested in the fact that the number of unit trusts in the sample was not consistent from period to period. For example the worst performing unit trust in the first half-yearly period in the sample would have a rank of 16 whereas the worst performing unit trust in the final half-yearly period of the sample would have a rank of 35. This weighting bias was negated by dividing the total number of unit trusts observed in the sample (35) by the number of unit trusts observed in each specific period of the sample, this calculated value for each specific period was then

multiplied by the individual rank of each unit trust in that period in order to come up with an equally weighted relative rank. This can be seen by the following equation:

$$EWRRi = (35 / Xi) * Ri \quad (5)$$

Where EWRRi : Equally Weighted Relative Rank of a specific unit trust in period i

Xi : number of unit trusts observable in period i

Ri : the calculated rank for a specific unit trust in period i

This methodology results in an equally rated ranking for each unit trust in each period and was performed on all 3 different performance evaluation techniques. Although the weighted rankings are not entirely accurate for the periods where there are fewer than 35 unit trusts in the sample, the method is useful in creating an overall view of individual unit trust performance. Also, in a number of cases there are unit trusts that are in existence only for the minimal 3 years, the average ranks calculated in these cases will not be as accurate as the average ranks calculated for those unit trusts in existence for the full sample period (6-years).

4. Empirical Results

4.1. Performance

Appendix B gives a computational example of how the different performance measures were calculated for the unit trust ABSA in the yearly periods ended 31/12/2001, 31/12/2002 and 31/12/2003. *Appendix G* gives the output of each different performance evaluation technique in each particular period. As can be seen in *Appendix G* the regressions run on each individual unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework produced an alpha measure, the regression correlation (R^2), a significance measure (p value) of the correlation, and an associated beta value (highlighted for significance at the $p < 0.01$ level). Similarly the same output factors were produced when single factor regressions were run on unit trust risk-adjusted performance against the performance of a peer group benchmark (mean General Equity unit trust return for a given period)

using a single factor APT framework. The output of results of the multiple regressions run on unit trust risk-adjusted performance against the Financial and Industrial (J250) and Resources (J000) indices in an APT 2-Factor framework were slightly more elaborate with the inclusion of an F value as well as individual beta estimates for both the Financial and Industrial (J250) and Resources (J000) indices.

4.1.1. Jensen's Alpha calculated against the ALSI in a CAPM framework.

Prior literature tends to argue that Jensen's calculation of alpha (α) based on a factor model is the leading risk-adjusted measure in calculating unit trust performance (Christensen (2002), Friend & Blume (1970)). The majority of this literature is applicable to first world countries where the size and nature of their economies allow for a reasonably well diversified proxy to be utilised. Evidently this is not the case in South Africa when using the ALSI as a benchmark; this can be seen by reviewing the correlation (R^2) figures for regressions run for each unit trust in each specific period. The excess returns generated on the ALSI show near to zero correlation with the excess returns of all unit trusts in the sample, in other words there is a very poor linear relationship between the two and the prediction intervals are therefore fairly wide. By and large the R^2 figures are positive yet the insignificance of their values is obvious as most range between 0 and 0.2. These results are consistent for each of the different periods under study. This is a good example of the benchmark error as defined by Roll (1970). The ALSI is clearly not a reliable proxy for the South African market as it is not effectively diversified (a great deal of the market is made up of a few large companies) and is too heavily weighted in both Resources and Financial/Industrial stocks. As a result both the related alpha and beta values are small and insignificant. It is thus that it was decided to reject these alpha figures when testing for associated persistence in performance. It can therefore be deduced that benchmarking against the ALSI in a CAPM framework is seriously flawed and holds very little explanatory power in deciphering unit trust performance.

4.1.2. Jensen's alpha calculated against a Peer Group average (mean General Equity unit trust return for a given period) in a single factor APT framework.

This performance evaluation technique has not been used previously in a South African study of this nature. It involves determining the linear relationship between excess individual unit trust returns and excess mean unit trust returns in a particular period. This is done by calculating Jensen alpha's using linear regression in a single factor APT framework. It was thought that this would be a useful performance measuring technique as it explicitly compares the performance of individual General Equity unit trusts to the performance of their peers (competitors) in any given period. A test of this nature would not be possible using the CAPM as it does not agree with many of the CAPM's rigorous assumptions. This test therefore takes the form of an adapted single factor APT model. The results of this valuation technique are shown in *Appendix G* and tell a completely different tale to those of the CAPM test (which uses the ALSI as the benchmark) above. As can be seen there is strong positive correlation between the excess returns of individual unit trusts and the excess returns of the peer group average. R^2 values are consistently found in the range between 0.8.and 0.95 (throughout the different time periods). Alpha values are highly significant and there tends to be a larger number of negative alpha's than positive alpha's in each given period, this indicates that mean general equity unit trust returns are skewed by significant out-performers rather than significant underperformers (this inflates the mean). As expected all of the alpha values are consistently highly significant ($p<0.001$) throughout all time periods. The majority of beta values lie closely either side of 1 and are obviously also highly significant, this implies that increases in mean General Equity unit trust excess returns are associated with near (either slightly greater or less) equal increases in individual unit trust risk-adjusted excess returns.

4.1.3. Jensen's alpha calculated against the Financial and Industrial (J250) and Resources (J000) indices in an APT 2-Factor model.

As set out by van Rensburg and Slaney (1997), Jensen's alpha was calculated against the Financial and Industrial (J250) and Resources (J000) indices. This was done in accordance with the merits of this performance evaluation technique as found in prior empirical South African research (van Rensburg and Slaney (1997), Von Weilligh and Smit (2000)). As can be seen by the results in *Appendix G*, the two-factor APT model is far superior to the single factor CAPM model. The coefficient of multiple determination, denoted by R^2, shows that by and large the variables

Financial/Industrial and Resources together explain most of the variation in excess individual unit trust returns. Although the 2 factors are not perfect predictors they generally explain between 80 and 95% of the variation in excess individual unit trust returns. There are however a number of R^2 values depicting a smaller predicative ability of the 2 factors, these R^2 figures range between 0.2 and 0.6. Short-term analysis (half-yearly and yearly) reveals that a case can be made for there being an inverse relationship between the top performing funds (AG equity, Oasis Cresent and Nedbank Rainmaker) and their R^2 values. This suggests that these funds have created large excess returns by investing in equities outside of Resources and Financial/Iindustrial stocks. It could thus be infered that these unit trusts might have used contrarian strategies to 'beat' the market. This evidence does not persist going forward into the 2-year and 3-year periods.

The analysis of the coefficient of multiple determination also reveals features relating to management style in terms of the weightings of either resources or financial/industrial stocks in each managers portfolio. The majority of funds maintain similar R^2 figures for each different period in the study. This is indicative of management style and consistency although probably has something to do with the mandatory requirements imposed on each portfolio manager. The individual factor Beta's generally show that actively managed General Equity portfolios believe that they can achieve greater efficiency by investing in less volatile areas of the market (industrials or financials) rather than the more risky resources. More than 95% of Financial/Industrial beta's are highly significant ($p<0.01$) whilst the corresponding Resources beta's are highly significant about 80% of the time. Whether statistically significant or not, more than 90% of the time Financial/Industrial beta's are greater than Resources beta's. Interesting to note, in the year ended 31/12/1998 most unit trusts avoided resources, this is carried through to the 2-year period ended 31/12/1999 and 3-year period ended 31/12/2000. This anomaly was no doubt due to the external environment in South Africa at the time and the contagion effects of the Asian crisis, this resulted in a reduction of capital inflow, increased capital flight, increases interest rates, rapid deceleration of exports and deteriorating terms of trade reflecting the decline in gold prices. F values are very highly significant and as to be expected the alpha values are small and seldom significant. Acknowledging this the 2-Factor APT model gives a much better indication of performance than the CAPM model.

4.1.4. Absolute (Raw) Returns

Absolute Returns were simply calculated as the closing value of a unit trust at the end of a particular period divided by the closing value at the beginning of the period. Absolute Returns are not adjusted for risk and do not take into account any specific economic factors. They are however very useful in performance evaluation as they are without a doubt the first and probably most powerful indicative tool used by investors. General Equity unit trusts share similar absolute returns in each specific period and an analysis of these gives a good overall view of how the entire General Equity unit trust market performed in a given period. In many cases the best performing funds are the ones capable of minimizing their losses whilst in other cases the best performing funds earn staggering returns for that particular period.

4.2. Performance Persistence

4.2.1. Short-Term Persistence

4.2.1.1. Half-Yearly

4.2.1.1.1 Ordinary Least Squares analysis

In regressing cumulative successive period calculated performance (for each of the three performance evaluation techniques) on prior period calculated performance in order to test if there is a linear relationship between the two, we are in essence testing whether prior performance is a good indicator (predictor) of future performance. In testing for half-yearly persistence using OLS analysis, the performance of each unit trust in each half-yearly period over the entire six years was paired with that unit trust's associated performance in the following half-year period. These individual unit trust pairings were then amalgamated into a singular dependant variable (successive returns) and singular independent variable (initial returns) for each of the 3 different performance evaluation techniques, those unit trusts not in existence for the full sample period obviously added less pairings to the regression than those with "full" samples. OLS regressions were then run in order to test the following for persistence:

1. Unit trust risk-adjusted performance (Jensen Alpha's) against The Financial and Industrial (J250) and Resources index (J000) in an APT 2-Factor framework, variables shown as Alpha initial and Alpha Successive.
2. Unit trust risk-adjusted performance against a Peer Group benchmark (mean General Equity unit trust) performance using a single factor APT framework, variables shown as Peer Group initial and Peer Group Successive.
3. Absolute (raw return) performance, variables shown as Absolute initial and Absolute Successive.

These results of these OLS half yearly regressions for each performance evaluation technique are shown below and can be further viewed in *Appendix D*, R^2 reflects the

correlation between dependant and independent samples, the p value given shows the significance of the correlation.

1. 2-Factor initial:	2-Factor Successive	$R^2 = 0.024$	p = 0.0064	y = -0.00001846 + 0.1447*x
2. Peer Group Initial:	Peer Group Successive	$R^2 = 0.086$	p = 0.0000	y = -0.00009861 + 0.2582*x
3. Absolute initial:	Absolute Successive	$R^2 = 0.073$	p = 0.0000	y = 0.05575956 - 0.2649*x

Results show small yet significant correlation ($p < 0.01$) for all performance evaluation techniques between prior period and successive period returns. The high significance of the correlation is due to the large number of pairings in the sample (310). Specifically, results for Jensen's 2-Factor model indicate that only 2.4% of the movement in successive returns (alpha's) is explained by returns from the prior period. The beta estimate for this measure is also positive but small (0.1447). Results for Jensen's Peer Group alpha's indicate similar findings although the correlation coefficient in this case is as much as 8.6% with a beta value of 0.2582. Both of these measures indicate that persistence does exist to a small degree in the short-term and thus provide evidence of the 'hot hand' effect which is known to be temporarily successful in disproving the EMH. This is due to the fact that a strong-form efficient South African market should show a near zero correlation between prior period returns and successive period returns. The results for Absolute Returns show an inverse relationship between prior period returns and successive period returns. Thus as initial period Absolute Returns increase, successive period Absolute Returns decrease. This shows that there is zero persistence in half-yearly Absolute Returns.

4.2.1.1.2 Chi Squared Analysis of Contingency Tables

Contingency tables were derived by ranking each individual unit trust's half yearly performance and then reclassifying them as "winners" if they achieved performance above the median and "losers" is their performance was found to be below the median. This was done for each of the 12 half-yearly periods. Unit trust performance was then classified over overlapping periods and unit trusts were classified as winners in both periods (WW), losers in both periods (LL), winners in first period and losers

in the second period (WL), or losers in first period and winners in the second period (LW). The results of the overlapping half-year periods were then summed to get an overall contingency table for each performance measure as shown below. This can be seen in better detail in *Appendix C*.

2-Factor Alpha's	Successive winners	Successive Losers
Initial Winners	81	70
Initial Losers	68	92
Chi-square (df=1)	**3.86**	**p= .0493**

Peer Group Alpha's	Successive winners	Successive Losers
Initial Winners	82	69
Initial Losers	69	91
Chi-square (df=1)	**3.89**	**p= .0487**

Absolute Returns	Successive winners	Successive Losers
Initial Winners	93	59
Initial Losers	57	102
Chi-square (df=1)	**19.98**	**p= .0000**

Although non-parametric testing is often viewed as being weak and inconclusive, these contingency tables give a good overview of whether unit trusts repeatedly won or repeatedly lost. In each of the performance evaluation techniques analysed it is clear that persistence does exist but that there is stronger evidence of negative persistence (unit trust repeatedly losing) than positive persistence. Persistence is very similar for both the 2-Factor alpha and Peer Group alpha tests with positive persistence occurring 26% of the time and negative persistence occurring 29% of the time for both. Absolute Returns show even greater levels of persistence with positive persistence occurring 29.9% of the time and negative persistence occurring a large 32.8% of the time. For each of the performance evaluation techniques this persistence (whether positive or negative) is significant at the $p<0.05$ level according to the calculated Chi Squared value. These results also advocate evidence of short-term persistence although they argue that funds are more likely to persistently lose than persistently win. This is evidence contradictory in nature to the strong-form EMH.

4.2.1.1.3 Spearman's Rank Correlation Analysis

Spearman's rank correlation test is another nonparametric test which captures the significance of the linear association between unit trust ranks in an initial period and unit trust ranks in a successive period. In order to provide consistency in sample size

from one period to the next, unit trusts present only in the successive period (i.e. did not exist in the first) were ignored for that particular two period Spearman's rank correlation analysis. Thus the rankings still valid in the successive period had to be ranked again according to their "relative rank". This can be shown in *Appendix F*. Results for the 11 overlapping half-year periods in the sample are shown below for each of the different performance evaluation techniques. A Spearman's rank correlation of 1 indicates perfect correlation between two pairs of rankings while a correlation of –1 indicates perfects negative correlation.

2-Factor Alpha's	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.150000	0.567671	0.579249
31/12/1998 & 30/06/1999	16	-0.302941	-1.18939	0.254067
30/06/1999 & 31/12/1999	22	0.339356	1.613389	0.122328
31/12/1999 & 30/06/2000	25	0.205385	1.006446	0.324673
30/06/2000 & 31/12/2000	28	0.339354	1.839534	0.077283
31/12/2000 & 30/06/2001	29	-0.265025	-1.42818	0.164707
30/06/2001 & 31/12/2001	**35**	**0.588235**	**4.178554**	**0.000202**
31/12/2001 & 30/06/2002	**35**	**0.519048**	**3.488409**	**0.001399**
30/06/2002 & 31/12/2002	**35**	**0.416807**	**2.634087**	**0.012744**
31/12/2002 & 30/06/2003	35	-0.281513	-1.68533	0.101361
30/06/2003 & 31/12/2003	35	-0.009524	-0.054713	0.956697

Peer Group Alpha's	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.005882	0.022010	0.982751
31/12/1998 & 30/06/1999	16	0.305882	1.202126	0.249254
30/06/1999 & 31/12/1999	**22**	**0.638622**	**3.711410**	**0.001380**
31/12/1999 & 30/06/2000	25	0.282308	1.411307	0.171539
30/06/2000 & 31/12/2000	28	0.296661	1.583988	0.125286
31/12/2000 & 30/06/2001	**29**	**0.391133**	**2.208314**	**0.035899**
30/06/2001 & 31/12/2001	**35**	**0.548179**	**3.765181**	**0.000652**
31/12/2001 & 30/06/2002	**35**	**0.440056**	**2.815159**	**0.008160**
30/06/2002 & 31/12/2002	35	0.258263	1.535709	0.134143
31/12/2002 & 30/06/2003	35	0.134454	0.779456	0.441266
30/06/2003 & 31/12/2003	35	0.056303	0.323947	0.748022

Absolute Returns	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.352941	1.411416	0.179959
31/12/1998 & 30/06/1999	16	-0.382353	-1.54828	0.143859
30/06/1999 & 31/12/1999	**22**	**0.568605**	**3.091232**	**0.005758**
31/12/1999 & 30/06/2000	25	0.106923	0.515742	0.610957
30/06/2000 & 31/12/2000	28	0.021346	0.108871	0.914141
31/12/2000 & 30/06/2001	29	0.220690	1.175726	0.249968
30/06/2001 & 31/12/2001	**35**	**0.631092**	**4.673604**	**0.000048**
31/12/2001 & 30/06/2002	**35**	**0.434454**	**2.770915**	**0.009111**
30/06/2002 & 31/12/2002	35	0.259944	1.546425	0.131539
31/12/2002 & 30/06/2003	35	-0.177871	-1.03835	0.306656
30/06/2003 & 31/12/2003	35	0.128011	0.741469	0.463654

As can be seen for the 2-Factor ranked alpha's, the three half-year periods running between 30/06/2001 to 31/12/2002 are all highly statistically significant at the $p<0.05$ level. Specifically the half-year period 30/06.2001 - 31/12/2001 is very highly significant ($p<0.001$) with a Spearman's rank correlation of 0.59. Essentially this means that for these three half-year periods, unit trust ranks are highly correlated and can hence be inferred as exhibiting attributes of persistence in their performance. The remaining half-year periods exhibit either negative correlation or insignificant positive correlation; this is in line with what one would expect from a strong-form efficient South African Market.

The Peer Group ranked alpha's provide similar evidence on the three successive half-year periods running 31/12/2000 to 30/06/2002 which are all statistically significant at the $p < 0.05$ level. As seen again with this performance evaluation technique, the period 30/06/2001-31/12/2001 has a Spearman's rank correlation of 0.55 which is very highly significant at the $p < 0.001$ level. In addition to the three successive half-year periods above, the period 30/06/1999-31/12/1999 also shows significant correlation. The remaining periods in the sample all show insignificant positive correlation. The Peer Group ranked alpha's show therefore that persistence does exist on the whole (although not always statistically significant) and that individual unit trust excess returns calculated against mean General Equity returns for a particular period tend to persist going forward. This is strong contradictory evidence against the EMH highlighting that the hierarchy of unit trusts versus their competitors remains relatively constant in the short-term.

Finally, when reviewing the results from Absolute Returns it can be seen that again the correlations are statistically significant ($p < 0.01$) over the two successive half-year periods 30/06/2001 to 30/06/2002. And again the most highly significant period ($p < 0.001$) is the half-year period 30/06/2001-31/12/2001 that has a correlation of 0.63. Again the period 30/06/1999-31/12/1999 is shown as exhibiting statistically significant correlation. The remaining half-year periods exhibit either insignificant negative correlation or insignificant positive correlation (more positive than negative)

and like with the 2-Factor ranked alpha's this can be seen as being consistent with what one would expect from a strong-form efficient South African Market.

Overall, for all three performance evaluation techniques, there seems to be strong evidence that unit trusts have persisted in their performance over the periods 30/06/1999-31/12/1999 and the successive three periods running from 30/06/2001 to 31/12/2002. The majority of all remaining half-year periods indicate insignificant positive correlation. Overall the results lean towards showing that unit trust performance does exists to some extent in the short-term (whether positive or negative) and that Spearman rank correlation analysis of this period successfully disproves the EMH.

4.2.1.2. Yearly Persistence

4.2.1.2.1 Ordinary Least Squares analysis

OLS regressions were rerun in order to test the various yearly performance evaluation measures for persistence. This was done in exactly the same manner as for the half-year testing above.

Regression scatterplots and details can be seen in *Appendix D*. The summarised results are given below.

1. 2-Factor initial:	**2-Factor Successive**	**R^2 = 0.040**	**p = 0.020**	**y = 0.00022073 + 0.1617*x**
2. Peer Group Initial:	**Peer Group Successive**	**R^2 = 0.035**	**p = 0.030**	**y = -0.00008075 + 0.1485*x**
3. Absolute Initial:	**Absolute Successive**	**R^2 = 0.227**	**p = 0.000**	**y = 0.16241368 - 0.3645*x**

Results show insignificant correlation for both the Jensen 2-Factor model as well as the Jensen Peer Group model (4% and 3.5%). Similar to the half-year analysis, the beta's for both these evaluation techniques are small and positive, p values are less significant ($p<0.05$) showing that the correlations are less significant than in the half-yearly analysis (this also will have something to do with the reduced number of

pairings run in the regression (155)). Results for Absolute Returns again indicate that there is an inverse relationship between prior yearly period returns and successive yearly period returns. This inverse relationship has an even greater significance ($p<0.001$) with a relatively large negative beta estimate of -0.3645. The results for Absolute returns yearly OLS analysis stoutly adhere to strong-form EMH, whilst the results for the yearly OLS analysis of the two different Jensen models provide analogous yet less significant evidence contradictory to the EMH.

4.2.1.2.2 Chi Squared Analysis of Contingency Tables

In exactly the same manner discussed for half-yearly testing, contingency tables were set up for yearly analysis and Chi squared tests were performed on these tables. Details are shown in *Appendix C*.

2-Factor Alpha's		
Chi-square (df=1)	**1.45**	p= .2278

Peer Group Alpha's	Successive winners	Successive Losers
Initial Winners	42	28
Initial Losers	28	38
Chi-square (df=1)	**4.20**	**p= .0404**

Absolute Returns	Successive winners	Successive Losers
Initial Winners	38	29
Initial Losers	28	41
Chi-square (df=1)	**3.54**	p= .0598

As can be seen there is no evidence of unit trusts persistently winning or losing for the 2-Factor alpha's. Absolute Returns are very nearly significant at the $p<0.05$ level ($p=0.0598$) and there is evidence of both winners and losers persisting. The yearly Peer Group Jensen alpha's show that there is significant persistence in unit trusts repeatedly winning and repeatedly losing, interestingly there are greater levels of positive "WW" persistence than negative "LL" persistence (31% vs 28%). The results for Peer Group alpha's and Absolute Returns using Chi-squared analysis of contingency tables reveal evidence of year on year performance persistence of South African General Equity unit trusts.

4.2.1.2.3 Spearman's Rank correlation Analysis

The results of the Spearman's rank correlation analysis of yearly performance can be summarized below; these can be further viewed in *Appendix F*.

2-Factor Alpha's	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	16	-0.355882	-1.42488	0.176104
31/12/1999 & 31/12/2000	22	0.183512	0.834869	0.413653
31/12/2000 & 31/12/2001	28	-0.266557	-1.41020	0.170332
31/12/2001 & 31/12/2002	**35**	**0.566106**	**3.945053**	**0.000393**
31/12/2002 & 31/12/2003	**35**	**0.515686**	**3.457598**	**0.001521**

Peer Group Alpha's	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	**16**	**-0.526471**	**-2.31697**	**0.036167**
31/12/1999 & 31/12/2000	22	0.363072	1.742620	0.096757
31/12/2000 & 31/12/2001	28	0.130816	0.672813	0.507003
31/12/2001 & 31/12/2002	**35**	**0.433613**	**2.764313**	**0.009261**
31/12/2002 & 31/12/2003	**35**	**0.506162**	**3.371467**	**0.001920**

Absolute Returns	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	16	-0.176471	-0.670820	0.513251
31/12/1999 & 31/12/2000	22	0.174478	0.792443	0.437402
31/12/2000 & 31/12/2001	28	0.186645	0.968728	0.341607
31/12/2001 & 31/12/2002	**35**	**0.356022**	**2.188595**	**0.035809**
31/12/2002 & 31/12/2003	**35**	**0.535014**	**3.637860**	**0.000928**

As above, the successive overlapping yearly periods 31/12/2001-31/12/2002 and 31/12/2002-31/12/2003 show similar high levels of rank correlation for all three performance evaluation techniques. Essentially this means that for these two overlapping yearly period's, unit trust ranks are seen to be persisting in their performance. This significant correlation is over a similar time frame (yearly periods ended 31/12/2001 and 31/12/2002) to the significant correlation identified in the half-yearly analysis and therefore provides further evidence that in the short to intermediary term, significant correlation (persistence) is evident for these periods. This evidence again contradicts the notion of strong-form EMH. The remaining yearly periods for all performance evaluation techniques exhibit either negative correlation (both significant and insignificant) or insignificant positive correlation. As with the half-yearly period analysis, the majority of these correlations are positive (whether significant or not) for the yearly analysis and this hence remains weak evidence opposing the EMH. The consistently positive correlations found for the Peer Group alpha's in the half-yearly analysis shows does not persist into the yearly analysis as

for the period 31/12/1998-31/12/1999 there is significant negative correlation. This suggests that the evidence found for the half-yearly analysis was the result of the short term "hot hand" anomaly.

4.2.2. Long-Run Persistence

4.2.2.1. 2-Yearly persistence

4.2.2.1.1. Ordinary Least Squares analysis

OLS regressions were rerun in order to test the various performance evaluation measures for persistence over 2-year intervals. This was done in exactly the same manner as for the short-term testing above.
Regression scatterplots and details can be seen in *Appendix D*. The summarised results are given below.

1. 2-Factor initial:	2-Factor Successive	$R^2 = 0.104$	p = 0.0331	y = 0.00041136 + 0.2993*x
2. Peer Group Initial:	Peer Group Successive	$R^2 = 0.037$	p = 0.2092	y = -0.00002098 + 0.1683*x
3. Absolute Initial:	Absolute Successive	$R^2 = 0.021$	p = 0.3490	y = 0.11598177 + 0.1137*x

Results show insignificant correlation for both the Jensen Peer Group model as well as the Absolute returns (3.7% and 2.1%). These findings support the EMH. The Jensen 2-Factor model on the other hand maintains evidence contradictory in nature to the EMH for the longer-term 2-year periods. The correlation between its successive period returns and initial periods returns is 10,4% and is significant at the $p<0.05$ level. For the 2-yearly period, there is no longer an inverse relationship between Absolute initial and Absolute successive returns, there is now an insignificant positive linear relationship between the two. As can be seen by the significance of the correlations in all 3 models, the short-term "hot hand" effect is eradicated to some extent over the longer 2-year periods.

4.2.2.1.2. Chi Squared Analysis of Contingency Tables

In exactly the same manner as discussed before, Contingency tables were set up for 2-yearly analysis and Chi squared tests were performed on these tables. Details are shown in *Appendix C*.

2-Factor Alpha's	Successive winners	Successive Losers
Initial Winners	13	9
Initial Losers	7	15
Chi-square (df=1)	**3.30**	p= .0693

Peer Group Alpha's		
Chi-square (df=1)	**1.45**	p= .2278

Absolute Returns		
Chi-square (df=1)	**.09**	p= .7628

As above it can be seen that this testing procedure for the 2-year periods has produced near opposite results to those found in testing the yearly contingency tables. Where before there was no evidence of unit trusts persistently winning or losing for the 2-Factor alpha's in the yearly analysis, this model is now the only performance measure showing any sign of significant persistence (p=0.693). Again there is greater negative persistence than positive persistence (34% vs 29.5%). The Chi-squared analysis of both the 2-yearly Peer Group alpha model and Absolute Return contingency tables now show no evidence of persistence. On the whole, the results from the 2-yearly Chi squared analysis do not successfully disprove the EMH.

4.2.2.1.3. Spearman's Rank Correlation Analysis

The results of the Spearman's rank correlation analysis of 2-yearly performance according to each different performance evaluation measure are summarized below.

2-Factor Alpha's	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	16	-0.338235	-1.34482	0.200066
31/12/2001 & 31/12/2003	**28**	**0.399267**	**2.177423**	**0.039095**

Peer Group Alpha's	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	16	0.036792	0.137755	0.892395
31/12/2001 & 31/12/2003	28	0.329502	1.779514	0.086849

Absolute Returns	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	16	0.002941	0.011005	0.991375
31/12/2001 & 31/12/2003	28	0.234264	1.228707	0.230187

Consistent with findings from both the half-yearly and yearly analyses, the 2-year period ended 31/12/2001 is more highly correlated with the subsequent period (ended 31/12/2003) than with the previous period (ended 31/12/1999). This is the same for all three performance evaluation techniques. Very evident however, is the decreased level of the overall significance in the 2-yearly analysis. In fact only the Jensen 2-Factor Alpha model is showing high levels of significance for any correlation, this significant correlation (p=0.039) is for the 2-yearly periods ended 31/12/2001 and 31/12/2003. The Peer Group alpha model's correlation for the same two periods is the only other correlation showing any significance (p=0.087). This lack of significance adheres to evidence found in the short-term being subject to the "hot" or "cold" hand anomaly. The remaining 2-yearly periods for all performance evaluation techniques exhibit either insignificant negative correlation or insignificant positive correlation. Again, and as before, the majority of correlations are positive whether significant or not and this can hence be inferred as weak evidence contradicting the EMH for the 2-yearly analysis.

4.2.2.2. 3-Yearly Persistence

4.2.2.2.1. Ordinary Least Squares Analysis

OLS regressions were rerun in order to test the various performance evaluation measures for persistence over 3-year intervals. This was done in exactly the same manner as before.

Regression scatterplots and details can be seen in *Appendix D*. The summarised results are given below

1. 2-Factor initial:	**2-Factor Successive**	**R^2 = 0.177**	**p = 0.1042**	**y = -0.00071325 + 0.9147*x**
2. Peer Group Initial:	**Peer Group Successive**	**R^2 = 0.159**	**p = 0.1262**	**y = -0.00034400 - 0.5805*x**
3. Absolute initial:	**Absolute Successive**	**R^2 = 0.064**	**p = 0.3431**	**y = 0.43411898 - 0.4264*x**

Results show insignificant correlation for the Jensen 2-Factor alpha model (correlation only being p=0.1042). Both Jensen's Peer Group alpha's as well as Absolute Returns show insignificant correlation (15.9% and 6.4%) and an inverse relationship between successive 3-year period returns and initial 3-year period returns. These findings support the EMH and indicate that for these two measures, initial period returns cannot be used to predict successive period returns. As can be seen by the significance of the correlations in all three models, the short-term "hot hand" effect is further eroded going forward into the 3-yearly analysis.

4.2.2.2.2 Chi Squared Analysis of Contingency Tables

2-Factor Alpha's		
Chi-square (df=1)	**.25**	p= .6143

Peer Group Alpha's		
Chi-square (df=1)	**2.29**	p= .1306

Absolute Returns	Successive winners	Successive Losers
Initial Winners	2	6
Initial Losers	6	2
Chi-square (df=1)	**4.00**	**p= .0455**

No significant persistence is evident for any of the three performance evaluation techniques from the first 3-year period to the next. The Peer Group alpha's show slightly significant persistence (p=0.1306). Absolute Returns actually indicate that there is significant "non" persistence (p=0.0455), this means that there is significant evidence of "winners" becoming "losers" and "losers" becoming "winners". Again, this supports strong-form EMH.

4.2.2.2.3. Spearman's Rank Correlation Analysis

2-Factor Alpha's	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	0.379412	1.534356	0.147227

Peer Group Alpha's	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	-0.350000	-1.39800	0.183869

Absolute Returns	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	-0.285294	-1.11376	0.284139

The Spearman's rank correlation analysis of successive 3-year periods shows that there is no evidence of persistence for any of the three performance evaluation techniques. In fact, for the Jensen Peer Group alpha returns and the Absolute Returns, the correlation is negative. For the 2-Factor alpha returns, the correlation is positive (0.3794) but insignificant. Together this is strong evidence corroborating with the strong-form EMH. It shows that there is very little or no evidence of long-term 3-year persistence in South African General Equity unit trusts.

4.2.3. Analysis of Individual unit trust Performance Persistence

As seen in *Appendix E*, an analysis of the individual unit trust period ranks for each different performance evaluation technique was undertaken. Although this test does not utilize commonly used statistical testing techniques and has not been used before in empirical testing of this nature, it does provide interesting and fairly convincing overall evidence of persistence in individual unit trust performance. Below is a summary of the findings made when analysing individual unit trusts for persistence, this summary simply takes an aggregate sample of 3 Top, Middle and Bottom ranked performers for each particular performance evaluation technique in each specific period. The 3 unit trusts used at each different ranked performance level were decided upon objectively once given an overall view of the results. The full set of results can be seen in *Appendix E.*

Half yearly	2-Factor ranked alpha's		Peer Group ranked alpha's		Absolute Returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	5.53	55.29	6.52	65.20	6.74	67.45
Nedbank Rainmaker	8.67	52.00	5.83	35.00	8.50	51.00
Oasis Crescent Equity	7.98	79.76	8.02	80.25	8.79	87.85
Middle						
Prudential Optimiser	16.19	129.49	15.63	125.08	16.07	128.58
RMB Equity	14.06	168.68	16.94	203.31	14.74	176.92
Coronation Equity	18.12	217.47	19.48	233.74	18.80	225.61
Bottom						
Coris Capital	28.51	171.03	23.44	140.66	29.44	176.66
Sanlam Equity MM	23.18	231.78	24.82	248.19	23.02	230.22
Tri Linear Equity	23.09	161.63	29.33	205.29	26.15	183.04

As can be seen for the half-yearly period, Allan Gray Equity, Nedbank Rainmaker and Oasis Crescent Equity can generally be considered as the top performers for each different performance evaluation technique. Due to the nature of the methodology, the average rank for these consistently top performing unit trusts over the half-yearly analysis are probably too high (due to the fact that for the first 6 half-year periods, all ranks are aggregated to a rank out of 35, regardless of the no of unit trust existent in each specific sample period). The best performing unit trust considering all performance evaluation techniques is undoubtedly Allan Gray Equity. Should individual unit trusts be unable to persist in their performance over each of the 12 half-yearly periods, one could assume that each unit trust would have an average rank near to 17,5 (mean rank). It can thus be inferred that the top 3 performing unit trusts have been able to persist in their half-yearly performance. The middle performing funds include Prudential's Optimiser fund, RMB Equity and Coronation Equity. These results show less obvious evidence of persistence as these unit trusts could easily have had very good performance in one period and very bad performance in the next (giving a middle range mean). Upon further analysis of the results it can be seen

that this is not the case for these 3 unit trusts who have consistently achieved middle of the range results for each of the different performance evaluation techniques.

Results indicate that Coris Capital, Sanlam Equity MM and Tri-Linear Equity performed consistently badly over the 12 half-yearly periods in study and for each different performance evaluation technique. These unit trusts persisted in achieving below average ranks. Again the methodology has probably underestimated their underperformance for the first three years in the sample. When reviewing the overall half-yearly results it is obvious that although only 9 particular unit trusts are highlighted in the summary, the majority of unit trusts consistently perform within a reasonable band.

Yearly	2-factor ranked alpha's		Peer group ranked alpha's		Absolute returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	3.27	16.34	3.77	18.84	2.82	14.09
Nedbank Rainmaker	4.00	12.00	4.00	12.00	3.67	11.00
Oasis Crescent Equity	5.84	29.18	6.04	30.18	5.29	26.43
Middle						
Prudential Optimiser	14.44	57.75	13.19	52.75	14.38	57.50
RMB Equity	12.88	77.27	16.72	100.31	17.14	102.84
Coronation Equity	16.84	101.05	17.30	103.82	16.24	97.44
Bottom						
Coris Capital	31.33	94.00	30.67	92.00	31.67	95.00
Sanlam Equity MM	25.38	101.50	25.31	101.25	23.75	95.00
Tri Linear Equity	27.31	109.25	29.38	117.50	29.63	118.50
2-Yearly	2-factor ranked alpha's		Peer group ranked alpha's		Absolute returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	2.38	4.75	3.00	6.00	2.38	4.75
Nedbank Rainmaker	4.00	4.00	3.00	3.00	3.00	3.00
Oasis Crescent Equity	4.75	9.50	3.13	6.25	2.63	5.25
Middle						
Prudential Optimiser	13.25	26.50	15.13	30.25	14.50	29.00
RMB Equity	17.65	52.94	16.48	49.44	16.48	49.44
Coronation Equity	16.04	48.13	16.29	48.88	14.46	43.38
Bottom						
Coris Capital	31.00	31.00	32.00	32.00	33.00	33.00

Sanlam Equity MM	30.00	60.00		29.75	59.50		26.63	53.25
Tri Linear Equity	30.75	61.50		32.38	64.75		31.88	63.75

Results for both the yearly and 2-yearly analysis by and large corroborate and build on half-yearly evidence in further showing that individual unit trusts persist in their performance going forward. As can be seen the average ranks of the top performing unit trusts are now even smaller, this indicates an even higher level of persistent outperformance (it is also due to the smaller number of sample periods and hence smaller methodological bias). The middle performing unit trusts show similar results to the half-year analysis. The bottom performing unit trusts show even higher aggregate rankings, and for the identical but opposite reasons as the top performing unit trusts this shows greater levels of persistent underperformance. In sum, both yearly and 2-yearly findings indicate that the short-term individual unit trust performance persistence uncovered in the half-yearly analysis continues going forward into the long-run. This test therefore purports that one can assume with relatively safety that individual unit trust performance does persist over the half-yearly, yearly and 2-yearly periods. These results show strong evidence of performance persistence in individual unit trusts yet they are not relevant in terms of testing South African market efficiency. The results of this individual unit trust analysis will however be very useful for a prospective investor.

6. Conclusion

The first part of this study involves a discussion of the key factors affecting the performance of General Equity unit trusts. This discussion creates a useful study environment and provides justifies the techniques adopted in testing the performance and the performance persistence of South African General Equity unit trusts going forward. Problems associated with the majority of prior literature on this subject relate to the small number of unit trusts usually making up the sample (Gilbertson (1976), Meyer (1997), Knight and Firer (1989), Gilbertson and Vermaak (1982)). The problem associated with sample size is largely negated in this study with a total of 35 General Equity unit trusts available for study over the six-year period 01/01/1998 to 31/12/2003. The performance histories of the unit trusts in the sample are still somewhat problematic with only 16 funds being in existence over the entire sample period. This is a limitation on the study and reduces the significance of the long-run (2-year and 3-year) tests of persistence. Highly significant differences were found between Jensen's single factor CAPM model using the ALSI as a benchmark and Jensen's 2-Factor APT model using both the Financial/Industrial (J250) and Resources (J000) indices as proxies. It was found that, consistent with Von Weiligh and Smit (2000) and Van Rensburg and Slaney (1997), the 2-Factor APT model was far better at explaining the variation in unit trust returns than the single factor CAPM model. This study therefore concludes that the choice of pricing theory is critical in assessing the risk-adjusted results of South African unit trusts. It was consequently decided that the single factor CAPM model should be negated when testing risk-adjusted unit trust performance for persistence. Unlike prior South African studies of this nature, this study calculated Jensen's alpha against a Peer Group average using a single factor APT framework, this method adds robustness to the prior South African literature in this field. This study confirms that non risk-adjusted and risk-adjusted performance rankings are not significantly different. That is to say that the Absolute return performance rankings are not significantly different from the risk-adjusted (Jensen's 2-Factor model and Peer Group model) performance rankings in each particular period. Evidence of this can be seen in *Appendix A5*.

This study investigated persistence of performance for absolute returns and risk-adjusted returns (the two different Jensen alpha tests). Empirical testing reveals limited evidence of persistence on absolute and risk-adjusted returns in the short-term (half-yearly, yearly) and diminishing to no levels of persistence going forward into the long-term (2-yearly and 3-yearly). Short-term persistence is evidence of the "hot hand" effect as identified internationally by Grinblatt and Titman (1992), Brown and Goetzmann (1995), Malkiel (1995) and Elton, Gruber and Blake (1996), Carhart (1997), Wermers (1996), Kapusta (1999) and Bollen and Busse (2003) and locally by van Rensburg and Slaney (1997), Meyer (1998), Von Weiligh and Smit (2000) and Firer et al (2001). Specifically however, the strongest of the statistical tests, the ordinary least squares (OLS) analysis, shows only a small correlation between prior period returns and successive period returns in the short-term and only for the risk-adjusted (alpha) measures, these correlations become even smaller and less significant when testing the yearly results. This lack of statistically significant evidence found using OLS restricts the non-parametric evidence of short-term persistence in this study. The weaker non-parametric tests (Spearman's rank correlation and Chi Squared analysis of contingency tables) highlight greater significance in short-term half-yearly persistence for all 3 performance evaluation techniques and specifically over the period 31/12/2000 to 31/12/2003, again this significance is reduced when evaluating yearly performance. Chi squared analysis is the largest advocate of short–term persistence and indicates that there is greater evidence of short-term loser persistence than short-term winner persistence.

The long-run persistence of unit trusts is a far more important test in terms of the EMH and has been identified in a limited number of international studies (Grinblatt and Titman (1992, 1993), Elton et al (1996), Carhart (1997)) and South African literature (Knight and Firer (1989), Meyer (1997), Weilligh and Smit (2000) and Firer et al (2001)). South African studys written by Smith and van der Merwe (1999) and Gilbertson and Vermaak (1982) find no evidence of long-run performance persistence. This study finds evidence of long-run persistence over the 2-yearly period when calculating Jensen's alpha against the Financial and Industrial (J250) and Resources index (J000) in a 2-Factor APT framework. Other performance evaluation techniques show no evidence of 2-year long-run persistence. No evidence of

persistence was found in analysing 3-year returns. There is in fact significant negative persistence in Absolute Returns between the two corresponding 3-year periods. Analysis of 3-year persistence suffers from bias created from a thin sample data set; this is due to the fact that there are only 16 unit trusts with full sets of returns for both of the 3-year periods under study.

Perhaps the most convincing evidence of unit trust performance persistence lies in the review of individual unit trusts and their associated performance over the 6-year period in the sample. Although this analysis is neither relevant nor quantifiable in terms of testing the strong-form EMH, it is conceivably the most useful evidence for individual investors. By and large this analysis shows that individual unit trust do repeat their performance to some extent in the successive period and that thus prior performance is a useful predictor of future performance. This evidence was consistent in each of the three different performance appraisal techniques and for the best, intermediate and worst performing unit trusts in the sample. An area of future study may include further analysis of individual unit trusts and their performance persistence in terms of their risk profile, size, mandate and strategy.

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Appendix A

List of General Equity Unit Trusts	Code	Type		
ABSA General Fund (R)	ABSA	Domestic	Equity	General
ABSA Growth Fund of Funds	ABSG	Domestic	Equity	General
Allan Gray Equity Fund	AGEF	Domestic	Equity	General
Community Growth Fund	CGMG	Domestic	Equity	General
Coris Capital General Equity Fund	GIGE	Domestic	Equity	General
Coronation Equity Fund	CORG	Domestic	Equity	General
FNB Growth Fund	FNBG	Domestic	Equity	General
Futuregrowth Albaraka Equity Fund	STPF	Domestic	Equity	General
Futuregrowth Core Equity Fund	STCE	Domestic	Equity	General
Gryphon All Share Tracker Fund	PTST	Domestic	Equity	General
Investec Equity Fund (R)	METF	Domestic	Equity	General
Investec Index Fund (R)	INVI	Domestic	Equity	General
Metropolitan General Equity Fund	MTLE	Domestic	Equity	General
m Cubed Equity Fund of Funds	MCGF	Domestic	Equity	General
Nedbank Equity Fund (R)	NDBG	Domestic	Equity	General
Nedbank Equity Fund of Funds (A)	NCHR	Domestic	Equity	General
Nedbank Rainmaker Fund (A)	AHVE	Domestic	Equity	General
Oasis Crescent Equity Fund	OCEF	Domestic	Equity	General
Old Mutual Growth Fund	OMGR	Domestic	Equity	General
Old Mutual Investor's Fund	OMTL	Domestic	Equity	General
Prudential Optimiser Fund	PRUO	Domestic	Equity	General
PSG Equity Select Fund of Funds (B)	PSTF	Domestic	Equity	General
RMB Equity Fund (R)	RMEF	Domestic	Equity	General
RMB Performance Fund of Funds	RMPF	Domestic	Equity	General
Sage Fund	SAGE	Domestic	Equity	General
Sage Multi Focus Fund of Funds	SAMC	Domestic	Equity	General
Sanlam General Equity Fund	SNTR	Domestic	Equity	General
Sanlam Multi Managed Equity Fund of Funds	SAFF	Domestic	Equity	General
Stanlib Index Fund	STBI	Domestic	Equity	General
Stanlib Multi-Manager Equity Fund (A1)	GDSE	Domestic	Equity	General
Stanlib Prosperity Fund (A)	LIPA	Domestic	Equity	General
Stanlib Wealthbuilder Fund (A)	LIWA	Domestic	Equity	General
Tri-Linear Equity Fund	FHEF	Domestic	Equity	General
Woolworths	WWTH	Domestic	Equity	General
Old Mutual Top Companies Fund	OMTC	Domestic	Equity	General

Appendix B This is a computational example showing how performance was calculated using the techniques shown below for the Unit Trust ABSA over 3 individual yearly periods:

Example of Methodology used to calculate

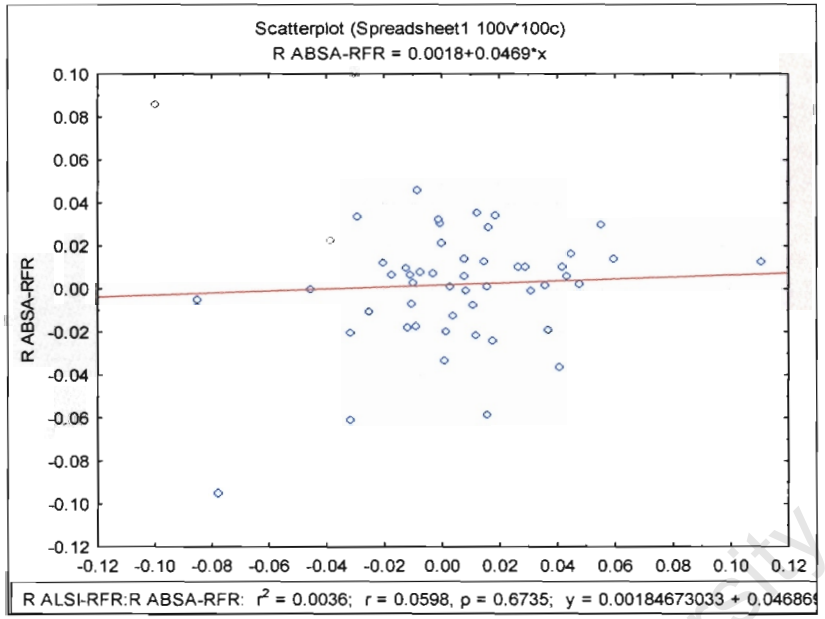
1. Jensen's risk-adjusted alpha (against the ALSI)
2. Jensen's risk-adjusted alpha (against the Financial and Industrial Index and the Resources Index (2 Factor))
3. Jensen's alpha against a peer group benchmark (mean risk-adjusted General Equity unit trust returns)
4. Absolute Returns

Period 2001/01/07 to 2001/12/30

	ABSA	ABSA return %	RFR	ALSI Return	ALSI return %	Return ABSA - RFR	Return ALSI - RFR	Resources(J000)	Fin and Ind (J250)	Mean RA return
2000/12/31	197.76									
2001/01/07	198.06	0.0015	0.0021	8280.5400	0.0142	-0.0005	0.0082	0.0352	-0.0015	-0.0002
2001/01/14	205.45	0.0373	0.0021	8517.2090	0.0286	0.0353	0.0122	0.0309	0.0238	0.0269
2001/01/21	208.03	0.0126	0.0021	8782.6470	0.0312	0.0105	0.0265	0.0454	0.0189	0.0107
2001/01/28	210.65	0.0126	0.0021	8799.0880	0.0019	0.0105	0.0291	-0.0004	-0.0001	0.0055
2001/02/04	215.58	0.0234	0.0021	9141.6880	0.0389	0.0213	-0.0002	0.0884	0.0040	0.0182
2001/02/11	211.86	-0.0173	0.0021	9049.5350	-0.0101	-0.0193	0.0369	0.0015	-0.0216	-0.0160
2001/02/18	214.37	0.0118	0.0021	9175.7380	0.0139	0.0098	-0.0121	0.0373	-0.0061	0.0051
2001/02/25	210.16	-0.0196	0.0021	8962.8050	-0.0232	-0.0217	0.0119	-0.0060	-0.0394	-0.0216
2001/03/04	208.33	-0.0087	0.0021	8827.4800	-0.0151	-0.0108	-0.0253	-0.0185	-0.0162	-0.0122
2001/03/11	210.08	0.0084	0.0021	8985.3350	0.0179	0.0063	-0.0172	0.0229	0.0104	0.0108
2001/03/18	198.18	-0.0566	0.0021	8239.7600	-0.0830	-0.0587	0.0158	-0.0986	-0.0746	-0.0602
2001/03/25	197.57	-0.0031	0.0021	8181.9990	-0.0070	-0.0051	-0.0850	0.0108	-0.0240	-0.0078
2001/04/01	194.6	-0.0150	0.0021	8103.1520	-0.0096	-0.0171	-0.0091	-0.0189	-0.0061	-0.0109
2001/04/08	191.52	-0.0158	0.0021	8050.6410	-0.0065	-0.0179	-0.0117	0.0080	-0.0208	-0.0138
2001/04/15	200.67	0.0478	0.0021	8512.1820	0.0573	0.0457	-0.0085	0.0622	0.0500	0.0410
2001/04/22	207.07	0.0319	0.0021	8835.3040	0.0380	0.0298	0.0553	0.0423	0.0309	0.0248
2001/04/29	207.91	0.0041	0.0021	8768.5750	-0.0076	0.0020	0.0359	-0.0113	-0.0083	-0.0025
2001/05/06	209	0.0052	0.0021	8857.1380	0.0101	0.0031	-0.0096	-0.0011	0.0151	0.0111
2001/05/13	210.67	0.0080	0.0021	8873.1560	0.0018	0.0059	0.0080	0.0106	-0.0086	0.0011
2001/05/20	217.5	0.0324	0.0021	9315.8670	0.0499	0.0303	-0.0003	0.0727	0.0284	0.0267
2001/05/27	218.45	0.0044	0.0021	9239.7700	-0.0082	0.0023	0.0478	-0.0142	-0.0071	-0.0014
2001/06/03	217.33	-0.0051	0.0021	9157.0290	-0.0090	-0.0072	-0.0103	-0.0178	-0.0055	-0.0018
2001/06/10	219.25	0.0088	0.0021	9190.3580	0.0036	0.0068	-0.0110	-0.0175	0.0158	0.0062
2001/06/17	215.38	-0.0177	0.0019	9020.5920	-0.0185	-0.0196	0.0016	-0.0448	-0.0028	-0.0076
2001/06/24	218.39	0.0140	0.0019	9064.8540	0.0049	0.0121	-0.0204	-0.0089	0.0112	0.0069
2001/07/01	219.04	0.0030	0.0019	9089.8850	0.0028	0.0010	0.0030	0.0057	-0.0025	0.0019
2001/07/08	212.12	-0.0316	0.0019	8693.7950	-0.0436	-0.0335	0.0008	-0.0374	-0.0503	-0.0404
2001/07/15	212.55	0.0020	0.0019	8864.6240	0.0196	0.0001	-0.0455	0.0390	0.0051	0.0053
2001/07/22	207.83	-0.0222	0.0019	8600.9870	-0.0297	-0.0241	0.0177	-0.0646	-0.0115	-0.0192
2001/07/29	203.96	-0.0186	0.0019	8366.7890	-0.0272	-0.0205	-0.0316	-0.0530	-0.0153	-0.0179
2001/08/05	211.19	0.0354	0.0019	8723.4900	0.0426	0.0336	-0.0291	0.0550	0.0328	0.0318
2001/08/12	203.96	-0.0342	0.0019	8404.6370	-0.0366	-0.0361	0.0408	-0.0508	-0.0314	-0.0290
2001/08/19	209	0.0247	0.0019	8556.6380	0.0181	0.0228	-0.0384	0.0278	0.0097	0.0181
2001/08/26	215.4	0.0306	0.0019	8837.2190	0.0328	0.0287	0.0162	0.0662	0.0109	0.0193
2001/09/02	215.69	0.0013	0.0019	8886.7220	0.0056	-0.0005	0.0309	0.0137	-0.0023	-0.0002
2001/09/09	213.38	-0.0107	0.0019	8621.0690	-0.0299	-0.0126	0.0037	-0.0361	-0.0291	-0.0131
2001/09/16	200.78	-0.0590	0.0019	7972.2150	-0.0753	-0.0609	-0.0318	-0.0582	-0.0886	-0.0532
2001/09/23	182.1	-0.0930	0.0018	7189.9930	-0.0981	-0.0948	-0.0772	-0.1054	-0.0965	-0.0851
2001/09/30	198.03	0.0875	0.0018	7997.9300	0.1124	0.0857	-0.0999	0.1209	0.1043	0.0719
2001/10/07	200.86	0.0143	0.0018	8358.3120	0.0451	0.0125	0.1106	0.0646	0.0302	0.0264
2001/10/14	202.47	0.0080	0.0018	8465.2780	0.0128	0.0063	0.0433	0.0263	0.0014	0.0040
2001/10/21	201.31	-0.0057	0.0018	8418.5430	-0.0055	-0.0075	0.0110	-0.0122	-0.0041	-0.0067
2001/10/28	203.29	0.0098	0.0018	8498.1350	0.0095	0.0080	-0.0073	0.0253	-0.0037	0.0061
2001/11/04	206.52	0.0159	0.0018	8648.7510	0.0177	0.0141	0.0077	0.0224	0.0116	0.0091
2001/11/11	207.17	0.0031	0.0018	8655.3270	0.0008	0.0014	0.0159	-0.0028	0.0002	0.0014
2001/11/18	214.3	0.0344	0.0018	9060.8930	0.0469	0.0326	-0.0010	0.0564	0.0375	0.0326
2001/11/25	218.15	0.0180	0.0018	9213.0480	0.0168	0.0162	0.0451	0.0354	0.0012	0.0122
2001/12/02	221.27	0.0143	0.0018	9404.0560	0.0207	0.0125	0.0150	0.0548	-0.0069	0.0074
2001/12/09	229.23	0.0360	0.0018	9983.2330	0.0616	0.0341	0.0189	0.1282	0.0086	0.0328
2001/12/16	232.89	0.0160	0.0019	10422.5350	0.0440	0.0141	0.0598	0.0791	0.0112	0.0226
2001/12/23	235.78	0.0124	0.0020	10412.9750	-0.0009	0.0104	0.0421	-0.0104	0.0031	0.0059
2001/12/30	237.95	0.0092	0.0019	10369.6850	-0.0042	0.0073	-0.0029	-0.0071	-0.0052	-0.0012

Period 2001/01/07 to 2001/12/30

1. Single Factor Alpha

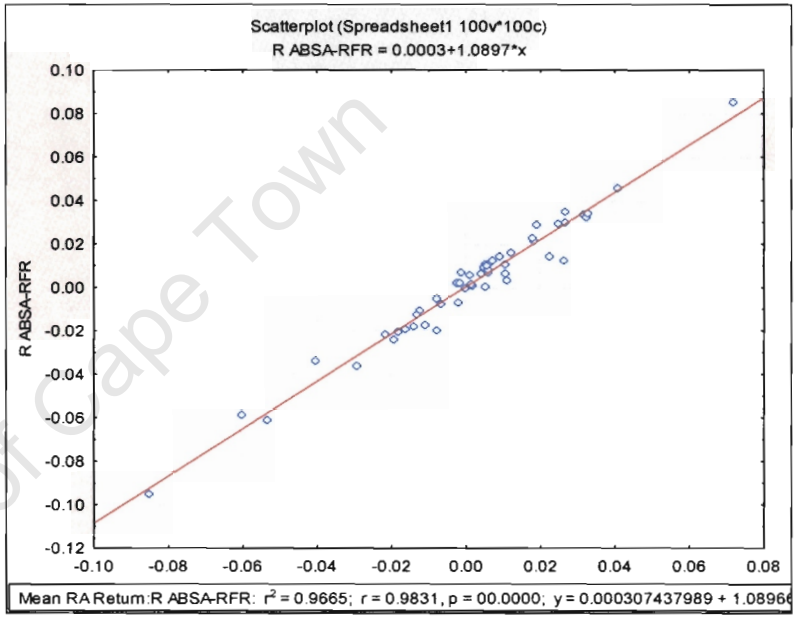


2. Multiple regression 2 factor results

Dependent: R ABSA-RFR Multiple R = .96450524 F = 326.8571
R²= .93027036 df = 2,49
No. of cases: 52 adjusted R²= .92742426 p = 0.000000
Standard error of estimate: .007648513
Intercept (alpha) : .000950446 Std.Error: .0011656 t(49) = .81540 p = .4188

Resources beta=.353 FIN and IND beta=.668

3. Alpha calculated against the peer group benchmark



4. Absolute Return = Closing value at end of Period/Closing value at beginning of period

= 237.95 / 197.76 - 1

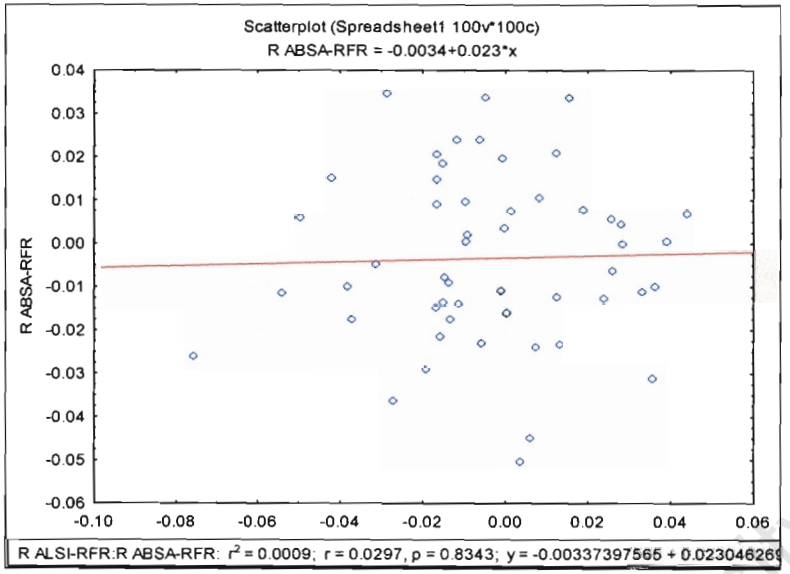
= 0.2032

Period 2002/01/06 to 2002/12/29

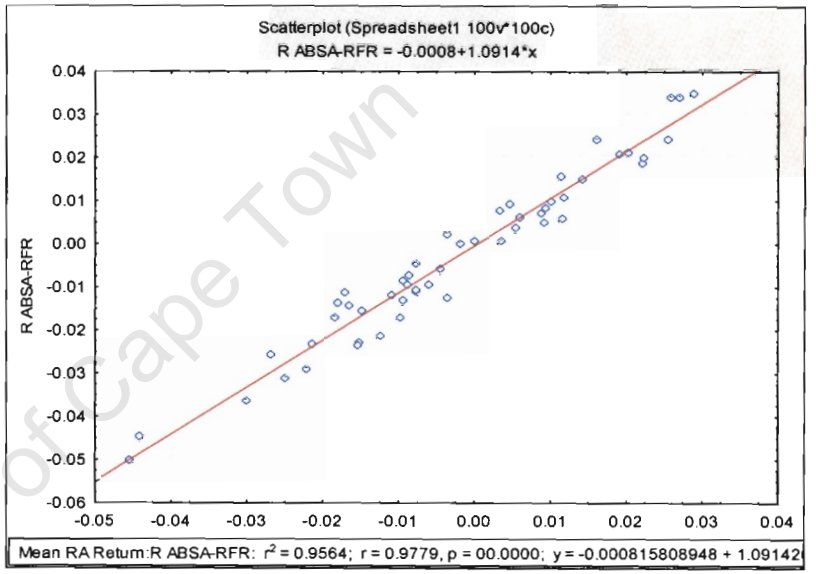
	ABSA	ABSA return %	RFR	ALSI Return	ALSI return %	Return ABSA - RFR	Return ALSI - RFR	Resources(J000)	Fin and Ind (J250)	Mean RA return
2001/12/30	237.95									
2002/01/06	244.11	0.0259	0.0019	10843.3710	0.0457	0.0239	-0.0061	0.0472	0.0409	0.0161
2002/01/13	246.2	0.0086	0.0019	10927.1490	0.0077	0.0067	0.0437	-0.0061	0.0160	0.0088
2002/01/20	235.63	-0.0429	0.0020	10357.0130	-0.0522	-0.0449	0.0058	-0.0394	-0.0672	-0.0442
2002/01/27	233.38	-0.0095	0.0020	10277.4410	-0.0077	-0.0115	-0.0542	-0.0109	-0.0086	-0.0171
2002/02/03	236.08	0.0116	0.0020	10584.5150	0.0299	0.0095	-0.0097	0.0736	-0.0123	0.0101
2002/02/10	237.59	0.0064	0.0020	10691.7160	0.0101	0.0044	0.0278	0.0303	-0.0129	0.0092
2002/02/17	240.51	0.0123	0.0020	11094.0450	0.0376	0.0103	0.0081	0.0618	0.0096	0.0118
2002/02/24	233.42	-0.0295	0.0020	10650.4180	-0.0400	-0.0315	0.0356	-0.0698	-0.0128	-0.0250
2002/03/03	237.409	0.0171	0.0020	10802.1620	0.0142	0.0151	-0.0420	0.0197	0.0050	0.0115
2002/03/10	242.81	0.0227	0.0021	11243.5360	0.0409	0.0207	0.0123	0.0329	0.0447	0.0203
2002/03/17	243.405	0.0025	0.0021	11161.2500	-0.0073	0.0003	0.0388	-0.0210	0.0019	0.0035
2002/03/24	244.367	0.0040	0.0021	11120.1420	-0.0037	0.0018	-0.0095	0.0019	-0.0133	-0.0035
2002/03/31	239.234	-0.0210	0.0022	11015.0430	-0.0095	-0.0232	-0.0058	0.0055	-0.0284	-0.0152
2002/04/07	245.454	0.0260	0.0022	11348.7850	0.0303	0.0238	-0.0116	0.0087	0.0478	0.0255
2002/04/14	245.931	0.0019	0.0022	11200.6450	-0.0131	-0.0002	0.0281	-0.0300	-0.0007	-0.0019
2002/04/21	250.965	0.0205	0.0021	11490.4850	0.0259	0.0183	-0.0152	0.0265	0.0211	0.0221
2002/04/28	248.307	-0.0106	0.0022	11155.3510	-0.0292	-0.0128	0.0237	-0.0720	0.0073	-0.0036
2002/05/05	247.655	-0.0026	0.0022	11127.4820	-0.0025	-0.0049	-0.0314	-0.0019	-0.0072	-0.0077
2002/05/12	256.531	0.0358	0.0022	11519.4960	0.0352	0.0336	-0.0047	0.0436	0.0236	0.0259
2002/05/19	254.204	-0.0091	0.0023	11433.2140	-0.0075	-0.0113	0.0330	-0.0096	-0.0099	-0.0076
2002/05/26	254.895	0.0027	0.0023	11607.8610	0.0153	0.0004	-0.0098	0.0378	-0.0095	0.0001
2002/06/02	249.495	-0.0212	0.0023	11200.8460	-0.0351	-0.0235	0.0130	-0.0572	-0.0186	-0.0214
2002/06/09	245.692	-0.0152	0.0023	11061.4190	-0.0124	-0.0176	-0.0374	-0.0176	-0.0122	-0.0098
2002/06/16	244.37	-0.0054	0.0023	10912.9290	-0.0134	-0.0077	-0.0148	-0.0100	-0.0210	-0.0087
2002/06/23	239.636	-0.0194	0.0023	10815.0810	-0.0090	-0.0217	-0.0158	0.0075	-0.0286	-0.0124
2002/06/30	236.84	-0.0117	0.0024	10657.7300	-0.0145	-0.0140	-0.0113	-0.0429	0.0079	-0.0180
2002/07/07	233.897	-0.0124	0.0024	10538.3100	-0.0112	-0.0148	-0.0169	-0.0051	-0.0213	-0.0166
2002/07/14	230.356	-0.0151	0.0024	10161.4400	-0.0358	-0.0175	-0.0136	-0.0415	-0.0351	-0.0184
2002/07/21	228.638	-0.0075	0.0024	10219.6700	0.0057	-0.0099	-0.0381	0.0163	-0.0084	-0.0060
2002/07/28	217.656	-0.0480	0.0024	9468.8900	-0.0735	-0.0504	0.0033	-0.1264	-0.0293	-0.0454
2002/08/04	212.5	-0.0237	0.0024	9019.8100	-0.0474	-0.0261	-0.0758	-0.0656	-0.0367	-0.0270
2002/08/11	214.245	0.0082	0.0024	9272.5900	0.0280	0.0058	-0.0498	0.0547	0.0023	0.0059
2002/08/18	215.933	0.0079	0.0024	9437.7000	0.0178	0.0055	0.0257	0.0093	0.0206	0.0116
2002/08/25	223.714	0.0360	0.0024	9802.4200	0.0386	0.0336	0.0154	0.0495	0.0251	0.0270
2002/09/01	222.04	-0.0075	0.0024	9677.2600	-0.0128	-0.0099	0.0362	-0.0048	-0.0240	-0.0089
2002/09/08	219.571	-0.0111	0.0024	9540.1000	-0.0142	-0.0135	-0.0152	-0.0134	-0.0193	-0.0094
2002/09/15	223.32	0.0171	0.0025	9683.9200	0.0151	0.0146	-0.0166	0.0418	-0.0131	0.0142
2002/09/22	221.123	-0.0098	0.0025	9546.5200	-0.0142	-0.0123	0.0126	-0.0101	-0.0228	-0.0109
2002/09/29	223.631	0.0113	0.0025	9640.9000	0.0099	0.0088	-0.0167	0.0149	0.0003	0.0046
2002/10/06	218.863	-0.0213	0.0026	9531.4800	-0.0113	-0.0239	0.0074	-0.0125	-0.0153	-0.0153
2002/10/13	217.473	-0.0064	0.0026	9398.8600	-0.0139	-0.0090	-0.0139	-0.0320	-0.0017	-0.0095
2002/10/20	222.508	0.0232	0.0027	9602.8600	0.0217	0.0205	-0.0165	0.0062	0.0310	0.0191
2002/10/27	224.845	0.0105	0.0027	9617.8900	0.0016	0.0078	0.0191	-0.0251	0.0208	0.0094
2002/11/03	222.97	-0.0083	0.0026	9636.2700	0.0019	-0.0109	-0.0011	0.0140	-0.0135	-0.0078
2002/11/10	227.937	0.0223	0.0026	9656.9700	0.0021	0.0196	-0.0007	-0.0124	0.0102	0.0223
2002/11/17	229.314	0.0060	0.0026	9697.4400	0.0042	0.0034	-0.0005	-0.0250	0.0248	0.0054
2002/11/24	231.615	0.0100	0.0026	9726.0400	0.0029	0.0074	0.0016	0.0057	-0.0041	0.0034
2002/12/01	228.524	-0.0133	0.0026	9563.7400	-0.0167	-0.0160	0.0003	-0.0353	-0.0059	-0.0148
2002/12/08	222.42	-0.0267	0.0026	9326.5400	-0.0248	-0.0293	-0.0193	-0.0121	-0.0399	-0.0222
2002/12/15	214.854	-0.0340	0.0026	9083.8300	-0.0260	-0.0366	-0.0274	-0.0275	-0.0296	-0.0300
2002/12/22	222.858	0.0373	0.0026	9343.3500	0.0286	0.0346	-0.0286	0.0375	0.0162	0.0289
2002/12/29	222.064	-0.0036	0.0026	9399.0800	0.0060	-0.0062	0.0260	0.0174	-0.0084	-0.0045

Period 2002/01/06 to 2002/12/29

1. Single Factor Alpha



3. Alpha calculated against the peer group benchmark



2. Multiple regression 2 factor results

Dependent: R ABSA-RFR Multiple R = .92257844 F = 140.0963
R^2= .85115098 df = 2,49
No. of cases: 52 adjusted R^2= .84507551 p = 0.000000
Standard error of estimate: .007724945
Intercept: -.000437290 Std.Error: .0010890 t(49) = -.4015 p = .6898

Resources beta=.471 FIN and IND beta=.627

4. Absolute Return = Closing value at end of Period/Closing value at beginning of period

= 222.064 / 237.95 - 1

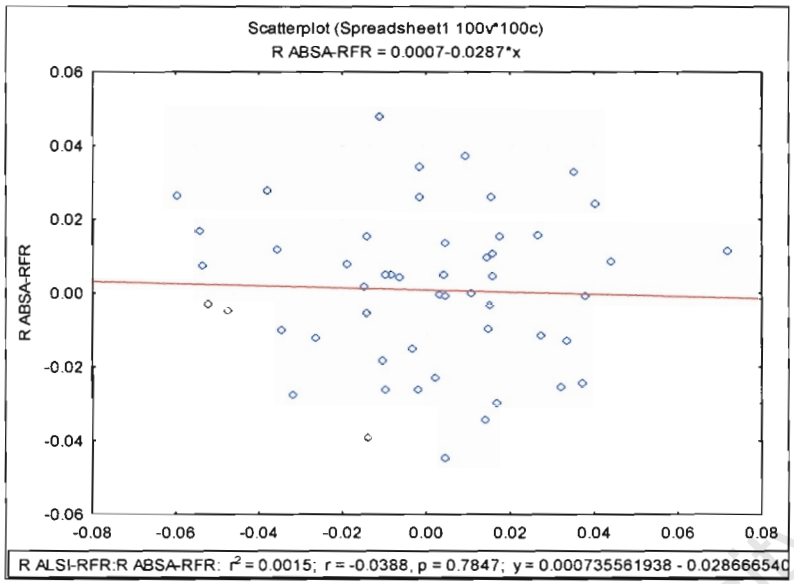
= -0.0668

Period 2003/01/05 to 2003/12/28

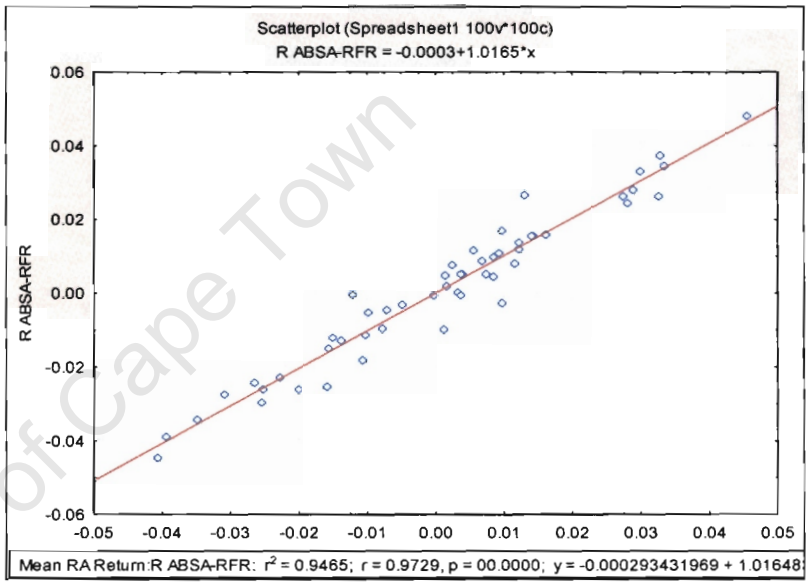
	ABSA	ABSA return %	RFR	ALSI Return	ALSI return %	Return ABSA - RFR	Return ALSI - RFR	Resources(J000)	Fin and Ind (J250)	Mean RA return
2002/12/29	222.064									
2003/01/05	222.55	0.0022	0.0026	9343.9200	-0.0059	-0.0004	0.0033	-0.0197	0.0011	-0.0120
2003/01/12	224.246	0.0076	0.0026	9308.9800	-0.0037	0.0050	-0.0085	-0.0087	-0.0043	0.0039
2003/01/19	225.737	0.0066	0.0026	9488.4200	0.0193	0.0041	-0.0064	0.0384	-0.0016	0.0085
2003/01/26	219.587	-0.0272	0.0026	9210.5700	-0.0293	-0.0299	0.0167	-0.0300	-0.0336	-0.0254
2003/02/02	214.111	-0.0249	0.0026	8798.3500	-0.0448	-0.0276	-0.0319	-0.0740	-0.0241	-0.0309
2003/02/09	213.678	-0.0020	0.0026	8806.3300	0.0009	-0.0047	-0.0474	0.0130	-0.0140	-0.0071
2003/02/16	208.587	-0.0238	0.0026	8596.9700	-0.0238	-0.0265	-0.0017	-0.0388	-0.0158	-0.0200
2003/02/23	206.59	-0.0096	0.0026	8497.3400	-0.0116	-0.0122	-0.0264	-0.0155	-0.0131	-0.0151
2003/03/02	206.019	-0.0028	0.0026	8402.0900	-0.0112	-0.0054	-0.0142	-0.0061	-0.0203	-0.0099
2003/03/09	198.473	-0.0366	0.0026	7973.7100	-0.0510	-0.0393	-0.0138	-0.0570	-0.0507	-0.0393
2003/03/16	200.487	0.0101	0.0026	8081.2400	0.0135	0.0075	-0.0536	0.0175	0.0053	0.0025
2003/03/23	200.968	0.0024	0.0026	8139.3100	0.0072	-0.0002	0.0109	0.0058	0.0035	0.0033
2003/03/30	192.449	-0.0424	0.0026	7735.8600	-0.0496	-0.0450	0.0046	-0.0642	-0.0420	-0.0407
2003/04/06	192.345	-0.0005	0.0026	7878.9800	0.0185	-0.0031	-0.0522	0.0219	0.0109	0.0098
2003/04/13	193.715	0.0071	0.0026	7818.1300	-0.0077	0.0045	0.0159	-0.0307	0.0067	0.0015
2003/04/20	190.675	-0.0157	0.0026	7761.5500	-0.0072	-0.0183	-0.0103	-0.0213	-0.0006	-0.0106
2003/04/27	186.155	-0.0237	0.0026	7361.1500	-0.0516	-0.0263	-0.0098	-0.0900	-0.0259	-0.0253
2003/05/04	189.745	0.0193	0.0026	7659.3900	0.0405	0.0167	-0.0542	0.0604	0.0213	0.0098
2003/05/11	190.08	0.0018	0.0026	7593.4900	-0.0086	-0.0008	0.0379	-0.0269	0.0008	0.0038
2003/05/18	199.646	0.0503	0.0026	8158.6600	0.0744	0.0477	-0.0112	0.1140	0.0404	0.0456
2003/05/25	202.387	0.0137	0.0025	8254.5200	0.0117	0.0112	0.0718	0.0142	0.0052	0.0057
2003/06/01	210.414	0.0397	0.0025	8564.3300	0.0375	0.0372	0.0092	0.0409	0.0302	0.0329
2003/06/08	217.832	0.0353	0.0024	8860.6000	0.0346	0.0328	0.0350	0.0298	0.0342	0.0299
2003/06/15	212.753	-0.0233	0.0023	8712.8700	-0.0167	-0.0256	0.0322	-0.0335	-0.0070	-0.0158
2003/06/22	214.914	0.0102	0.0023	8854.1200	0.0162	0.0079	-0.0190	0.0155	0.0127	0.0116
2003/06/29	207.963	-0.0323	0.0022	8347.2300	-0.0572	-0.0346	0.0139	-0.0866	-0.0376	-0.0348
2003/07/06	213.872	0.0284	0.0022	8498.7400	0.0182	0.0262	-0.0595	0.0051	0.0242	0.0131
2003/07/13	216.58	0.0127	0.0022	8644.7800	0.0172	0.0104	0.0159	0.0212	0.0102	0.0094
2003/07/20	214.942	-0.0076	0.0022	8579.6300	-0.0075	-0.0098	0.0149	-0.0117	-0.0082	-0.0076
2003/07/27	216.453	0.0070	0.0021	8747.2300	0.0195	0.0049	-0.0097	0.0440	-0.0028	0.0075
2003/08/03	220.195	0.0173	0.0021	8806.9100	0.0068	0.0152	0.0174	-0.0079	0.0147	0.0144
2003/08/10	220.449	0.0012	0.0020	8863.6100	0.0064	-0.0008	0.0047	0.0149	-0.0037	-0.0003
2003/08/17	223.863	0.0155	0.0020	9018.6500	0.0175	0.0135	0.0044	0.0419	-0.0053	0.0122
2003/08/24	230.168	0.0282	0.0020	9338.7500	0.0355	0.0261	0.0155	0.0324	0.0344	0.0275
2003/08/31	227.625	-0.0110	0.0020	9226.2000	-0.0121	-0.0131	0.0335	-0.0007	-0.0251	-0.0137
2003/09/07	231.565	0.0173	0.0020	9498.0900	0.0295	0.0153	-0.0141	0.0382	0.0184	0.0141
2003/09/14	229.298	-0.0098	0.0018	9374.1400	-0.0130	-0.0116	0.0275	-0.0170	-0.0131	-0.0101
2003/09/21	230.121	0.0036	0.0018	9413.1500	0.0042	0.0018	-0.0149	0.0069	-0.0016	0.0017
2003/09/28	225.259	-0.0211	0.0018	9105.5100	-0.0327	-0.0229	0.0023	-0.0495	-0.0213	-0.0227
2003/10/05	223.389	-0.0083	0.0018	9106.7800	0.0001	-0.0101	-0.0345	-0.0117	0.0070	0.0012
2003/10/12	229.567	0.0277	0.0017	9488.4600	0.0419	0.0260	-0.0016	0.0372	0.0427	0.0326
2003/10/19	235.469	0.0257	0.0016	9854.6800	0.0386	0.0241	0.0402	0.0499	0.0263	0.0281
2003/10/26	230.034	-0.0231	0.0016	9498.2500	-0.0362	-0.0246	0.0370	-0.0472	-0.0297	-0.0264
2003/11/02	236.794	0.0294	0.0016	9765.3000	0.0281	0.0278	-0.0377	0.0289	0.0246	0.0289
2003/11/09	240.869	0.0172	0.0016	9928.8400	0.0167	0.0156	0.0265	0.0091	0.0202	0.0162
2003/11/16	240.455	-0.0017	0.0016	9914.0100	-0.0015	-0.0033	0.0152	-0.0131	0.0053	-0.0048
2003/11/23	237.131	-0.0138	0.0015	9576.4600	-0.0340	-0.0153	-0.0031	-0.0549	-0.0198	-0.0156
2003/11/30	240.229	0.0131	0.0014	9729.6000	0.0160	0.0116	-0.0355	-0.0019	0.0275	0.0122
2003/12/07	242.823	0.0108	0.0014	9783.5700	0.0055	0.0094	0.0145	-0.0080	0.0134	0.0084
2003/12/14	244.329	0.0062	0.0015	9783.4000	0.0000	0.0047	0.0041	-0.0008	-0.0021	0.0038
2003/12/21	253.044	0.0357	0.0015	10229.7600	0.0456	0.0341	-0.0015	0.0685	0.0260	0.0335
2003/12/28	255.549	0.0099	0.0015	10326.8100	0.0095	0.0084	0.0441	0.0148	0.0027	0.0068

Period 2003/01/05 to 2003/12/28

1. Single Factor Alpha



3. Alpha calculated against the peer group benchmark



2. Multiple regression 2 factor results

Dependent: R ABSA-RFR Multiple R = .95258574 F = 240.1348
R^2= .90741960 df = 2,49
No. of cases: 52 adjusted R^2= .90364081 p = 0.000000
Standard error of estimate: .006460159
Intercept: .000351262 Std.Error: .0008997 t(49) = .39041 p = .6979

Resources beta=.371 FIN and IND beta=.637

4. Absolute Return = Closing value at end of Period/Closing value at beginning of period

= 255.549 / 222.064 - 1

= 0.1508

Appendix C

CHI Squared analysis of Contingency Tables: 2 Factor Alpha's

Half Yearly

	Successive win	Successive Lose
Initial winners	81	70
Initial losers	68	92

	Column 1	Column 2	Row
	81	70	151
Percent of total	26.045%	22.508%	48.553%
	68	92	160
Percent of total	21.865%	29.582%	51.447%
Column totals	149	162	311
Percent of total	47.910%	52.090%	
Chi-square (df=1)	3.86	p= .0493	

		31/12/1998 W	31/12/1998 L
30/06/1998	W	4	4
30/06/1998	L	4	4

Chi-square (df=1) 0.00 p=1.0000

		30/06/1999 W	30/06/1999 L
31/12/1998	W	3	5
31/12/1998	L	3	5

Chi-square (df=1) 0.00 p=1.0000

		31/12/1999 W	31/12/1999 L
30/06/1999	W	7	4
30/06/1999	L	4	7

Chi-square (df=1) 1.64 p= .2008

		30/06/2000 W	30/06/2000 L
31/12/1999	W	7	5
31/12/1999	L	6	7

Chi-square (df=1) .37 p= .5425

		31/12/2000 W	31/12/2000 L
30/06/2000	W	8	6
30/06/2000	L	5	9

Chi-square (df=1) 1.29 p= .2556

		30/06/2001 W	30/06/2001 L
31/12/2000	W	5	9
31/12/2000	L	8	7

Chi-square (df=1) .91 p= .3404

		31/12/2001 W	31/12/2001 L
30/06/2001	W	12	5
30/06/2001	L	5	13

Chi-square (df=1) 6.41 p= .0113

		30/06/2002 W	30/06/2002 L
31/12/2001	W	11	5
31/12/2001	L	6	13

Chi-square (df=1) 4.80 p= .0284

		31/12/2002 W	31/12/2002 L
30/06/2002	W	10	7
30/06/2002	L	7	11

Chi-square (df=1) 1.39 p= .2383

		30/06/2003 W	30/06/2003 L
31/12/2002	W	6	11
31/12/2002	L	11	7

Chi-square (df=1) 2.33 p= .1267

		31/12/2003 W	31/12/2003 L
30/06/2003	W	8	9
30/06/2003	L	9	9

Chi-square (df=1) .03 p= .8619

Yearly

	Successive Wins	Successive Lose
Initial winners	37	32
Initial losers	29	38

	Column 1	Column 2	Row
Frequencies, row 1	37	32	69
Percent of total	27.206%	23.529%	50.735%
Frequencies, row 2	29	38	67
Percent of total	21.324%	27.941%	49.265%
Column totals	66	70	136
Percent of total	48.529%	51.471%	
Chi-square (df=1)	1.45	p= .2278	

		31/12/1999 W	31/12/1999 L
30/06/1999	W	2	6
30/06/1999	L	4	4

Chi-square (df=1) 1.07 p= .3017

		31/12/2000 W	31/12/2000 L
30/06/2000	W	6	5
30/06/2000	L	7	4

Chi-square (df=1) .19 p= .6646

		30/06/2001 W	30/06/2001 L
31/12/2000	W	6	9
31/12/2000	L	7	6

Chi-square (df=1) .54 p= .4638

		31/12/2002 W	31/12/2002 L
30/06/2002	W	11	7
30/06/2002	L	5	12

Chi-square (df=1) 3.54 p= .0599

		31/12/2003 W	31/12/2003 L
30/06/2003	W	12	5
30/06/2003	L	6	12

Chi-square (df=1) 4.86 p= .0275

2 Yearly

	Successive Wins	Successive Lose
Initial winners	13	9
Initial losers	7	15

	Column 1	Column 2	Row
	13	9	22
Percent of total	29.545%	20.455%	50.000%
	7	15	22
Percent of total	15.909%	34.091%	50.000%
Column totals	20	24	44
Percent of total	45.455%	54.545%	
Chi-square (df=1)	3.36	p= .0668	

		31/12/2001 W	31/12/2001 L
31/12/1999	W	4	4
31/12/1999	L	3	5

Chi-square (df=1) .25 p= .6143

		31/12/2003 W	31/12/2003 L
31/12/2001	W	9	5
31/12/2001	L	4	10

Chi-square (df=1) 3.59 p= .0581

3 Yearly

		31/12/2003 W	31/12/2003 L
31/12/2000	W	5	3
31/12/2000	L	4	4

	Column 1	Column 2	Row
Frequencies, row 1	5	3	8
Percent of total	31.250%	18.750%	50.000%
Frequencies, row 2	4	4	8
Percent of total	25.000%	25.000%	50.000%
Column totals	9	7	16
Percent of total	56.250%	43.750%	
Chi-square (df=1)	.25	p= .6143	

Peer group Alpha's

Half Yearly

	Successive win	Successive Lose
Initial winners	82	69
Initial losers	69	91

	Column 1	Column 2	Row
	82	69	151
Percent of total	26.367%	22.186%	48.553%
	69	91	160
Percent of total	22.186%	29.260%	51.447%
Column totals	151	160	311
Percent of total	48.553%	51.447%	
Chi-square (df=1)	3.89	p= .0487	

		31/12/1998 W	31/12/1998 L
30/06/1998	W	3	5
30/06/1998	L	4	4

Chi-square (df=1) .25 p= .6143

		30/06/1999 W	30/06/1999 L
31/12/1998	W	2	6
31/12/1998	L	5	3

Chi-square (df=1) 2.29 p= .1306

		31/12/1999 W	31/12/1999 L
30/06/1999	W	7	4
30/06/1999	L	4	7

Chi-square (df=1) 1.64 p= .2008

		30/06/2000 W	30/06/2000 L
31/12/1999	W	6	5
31/12/1999	L	8	6

Chi-square (df=1) .02 p= .8967

		31/12/2000 W	31/12/2000 L
30/06/2000	W	8	8
30/06/2000	L	6	8

Chi-square (df=1) 0.00 p=1.0000

		30/06/2001 W	30/06/2001 L
31/12/2000	W	7	7
31/12/2000	L	7	8

Chi-square (df=1) .03 p= .8575

		31/12/2001 W	31/12/2001 L
30/06/2001	W	13	4
30/06/2001	L	4	14

Chi-square (df=1) 10.30 p= .0013

		30/06/2002 W	30/06/2002 L
31/12/2001	W	12	5
31/12/2001	L	5	13

Chi-square (df=1) 6.41 p= .0113

		31/12/2002 W	31/12/2002 L
30/06/2002	W	10	7
30/06/2002	L	7	11

Chi-square (df=1) 1.39 p= .2383

		30/06/2003 W	30/06/2003 L
31/12/2002	W	7	10
31/12/2002	L	10	8

Chi-square (df=1) .72 p= .3950

		31/12/2003 W	31/12/2003 L
30/06/2003	W	9	8
30/06/2003	L	9	9

Chi-square (df=1) .03 p= .8619

Yearly

	Successive Win	Successive Lose
Initial winners	42	28
Initial losers	28	38

	Column 1	Column 2	Row
	42	28	70
Percent of total	30.882%	20.588%	51.471%
	28	38	66
Percent of total	20.588%	27.941%	48.529%
Column totals	70	66	136
Percent of total	51.471%	48.529%	
Chi-square (df=1)	4.20	p= .0404	

		31/12/1999 W	31/12/1999 L
30/06/1999	W	2	6
30/06/1999	L	4	4

Chi-square (df=1) 1.07 p= .3017

		31/12/2000 W	31/12/2000 L
30/06/2000	W	7	4
30/06/2000	L	6	5

Chi-square (df=1) .19 p= .6646

		30/06/2001 W	30/06/2001 L
31/12/2000	W	9	6
31/12/2000	L	6	7

Chi-square (df=1) .54 p= .4638

		31/12/2002 W	31/12/2002 L
30/06/2002	W	11	7
30/06/2002	L	7	10

Chi-square (df=1) 1.39 p= .2383

		31/12/2003 W	31/12/2003 L
30/06/2003	W	13	5
30/06/2003	L	5	12

Chi-square (df=1) 6.41 p= .0113

2 Yearly

	Successive Wins	Successive Lose
Initial winners	13	9
Initial losers	9	13

	Column 1	Column 2	Row
Frequencies, row 1	13	9	22
Percent of total	29.545%	20.455%	50.000%
Frequencies, row 2	9	13	22
Percent of total	20.455%	29.545%	50.000%
Column totals	22	22	44
Percent of total	50.000%	50.000%	
Chi-square (df=1)	1.45	p= .2278	

		31/12/2001 W	31/12/2001 L
31/12/1999	W	5	3
31/12/1999	L	4	4

Chi-square (df=1) .25 p= .6143

		31/12/2003 W	31/12/2003 L
31/12/2001	W	8	6
31/12/2001	L	5	9

Chi-square (df=1) 1.29 p= .2556

3 Yearly

		31/12/2003 W	31/12/2003 L
31/12/2000	W	2	6
31/12/2000	L	5	3

	Column 1	Column 2	Row
Frequencies, row 1	2	6	8
Percent of total	12.500%	37.500%	50.000%
Frequencies, row 2	5	3	8
Percent of total	31.250%	18.750%	50.000%
Column totals	7	9	16
Percent of total	43.750%	56.250%	
Chi-square (df=1)	2.29	p= .1306	

Absolute Returns

Half Yearly

	Succesive win	Succesive Lose
Initial winners	93	59
Initial losers	57	102

	Column 1	Column 2	Row
	93	59	152
Percent of total	29.904%	18.971%	48.875%
	57	102	159
Percent of total	18.328%	32.797%	51.125%
Column totals	150	161	311
Percent of total	48.232%	51.768%	
Chi-square (df=1)	19.98	p= .0000	

		31/12/1998 W	31/12/1998 L
30/06/1998	W	3	5
30/06/1998	L	5	3

Chi-square (df=1) 1.00 p= .3173

		30/06/1999 W	30/06/1999 L
31/12/1998	W	5	3
31/12/1998	L	2	6

Chi-square (df=1) 2.29 p= .1306

		31/12/1999 W	31/12/1999 L
30/06/1999	W	8	3
30/06/1999	L	3	8

Chi-square (df=1) 4.55 p= .0330

		30/06/2000 W	30/06/2000 L
31/12/1999	W	7	5
31/12/1999	L	7	6

Chi-square (df=1) .05 p= .8213

		31/12/2000 W	31/12/2000 L
30/06/2000	W	10	4
30/06/2000	L	3	11

Chi-square (df=1) 7.04 p= .0080

		30/06/2001 W	30/06/2001 L
31/12/2000	W	7	7
31/12/2000	L	6	9

Chi-square (df=1) .29 p= .5884

		31/12/2001 W	31/12/2001 L
30/06/2001	W	12	5
30/06/2001	L	5	13

Chi-square (df=1) 6.41 p= .0113

		30/06/2002 W	30/06/2002 L
31/12/2001	W	14	3
31/12/2001	L	3	15

Chi-square (df=1) 15.10 p= .0001

		31/12/2002 W	31/12/2002 L
30/06/2002	W	9	8
30/06/2002	L	8	10

Chi-square (df=1) .25 p= .6152

		30/06/2003 W	30/06/2003 L
31/12/2002	W	10	7
31/12/2002	L	6	12

Chi-square (df=1) 2.29 p= .1303

		31/12/2003 W	31/12/2003 L
30/06/2003	W	8	9
30/06/2003	L	9	9

Chi-square (df=1) .03 p= .8619

Yearly

	Successive Win	Successive Lose
Initial winners	38	29
Initial losers	28	41

	Column 1	Column 2	Row
	38	29	67
Percent of total	27.941%	21.324%	49.265%
	28	41	69
Percent of total	20.588%	30.147%	50.735%
Column totals	66	70	136
Percent of total	48.529%	51.471%	
Chi-square (df=1)	3.84	p= .0598	

		31/12/1999 W	31/12/1999 L
30/06/1999	W	4	4
30/06/1999	L	3	5

Chi-square (df=1) .25 p= .6143

		31/12/2000 W	31/12/2000 L
30/06/2000	W	5	6
30/06/2000	L	7	4

Chi-square (df=1) .73 p= .3918

		31/12/2001 W	31/12/2001 L
30/06/2001	W	7	7
30/06/2001	L	6	8

Chi-square (df=1) .14 p= .7047

		31/12/2002 W	31/12/2002 L
30/06/2002	W	11	6
30/06/2002	L	6	12

Chi-square (df=1) 3.44 p= .0635

		31/12/2003 W	31/12/2003 L
30/06/2003	W	11	6
30/06/2003	L	6	12

Chi-square (df=1) 3.44 p= .0635

2 Yearly

	Successive Wins	Successive Lose
Initial winners	10	12
Initial losers	11	11

	Column 1	Column 2	Row
	10	12	22
Percent of total	22.727%	27.273%	50.000%
	11	11	22
Percent of total	25.000%	25.000%	50.000%
Column totals	21	23	44
Percent of total	47.727%	52.273%	
Chi-square (df=1)	.09	p= .7628	

		31/12/2001 W	31/12/2001 L
31/12/1999	W	4	4
31/12/1999	L	5	3

Chi-square (df=1) .25 p= .6143

		31/12/2003 W	31/12/2003 L
31/12/2001	W	6	8
31/12/2001	L	6	8

Chi-square (df=1) 0.00 p= 1.0000

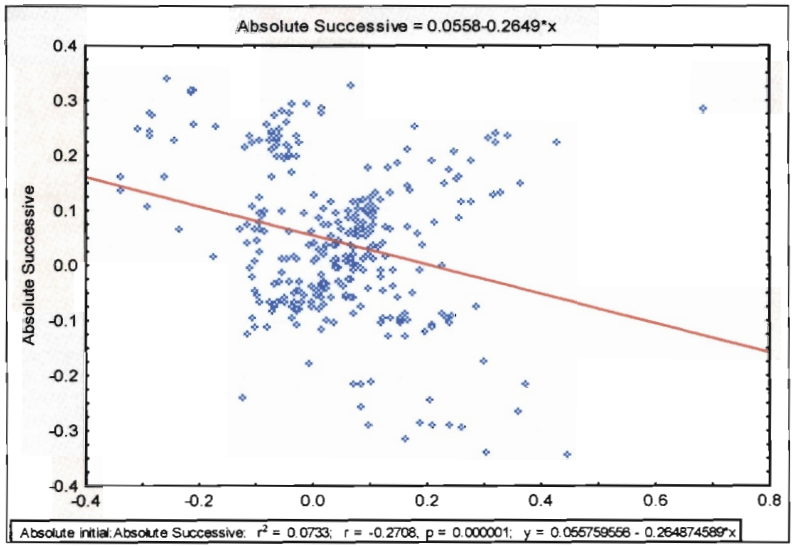
3 Yearly

		31/12/2003 W	31/12/2003 L
31/12/2000	W	2	6
31/12/2000	L	6	2

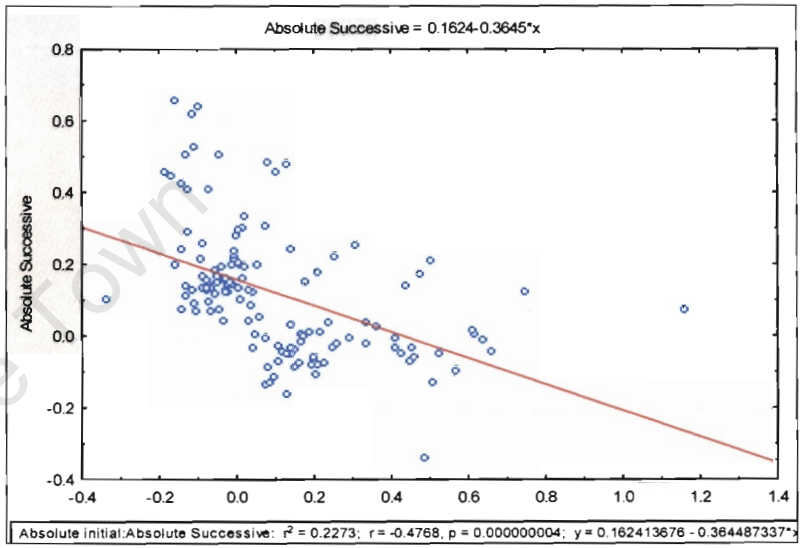
	Column 1	Column 2	Row
Frequencies, row 1	2	6	8
Percent of total	12.500%	37.500%	50.000%
Frequencies, row 2	6	2	8
Percent of total	37.500%	12.500%	50.000%
Column totals	8	8	16
Percent of total	50.000%	50.000%	
Chi-square (df=1)	4.00	p= .0455	

Absolute Returns

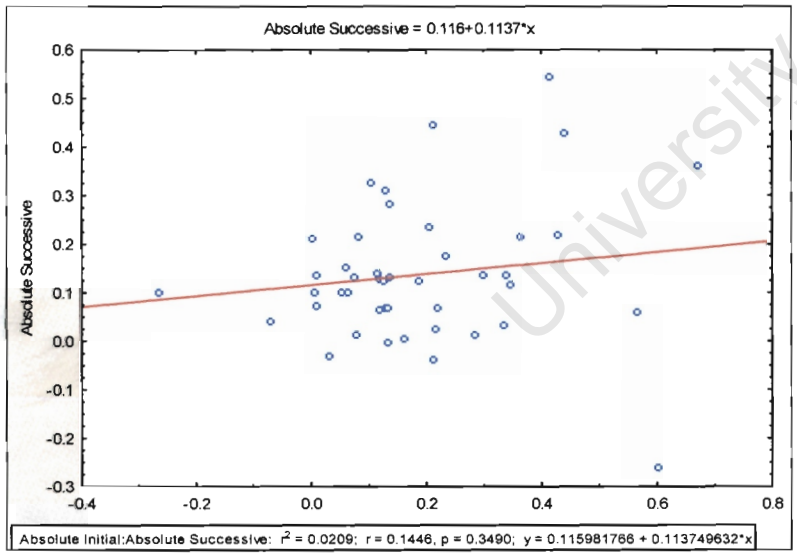
Half Yearly



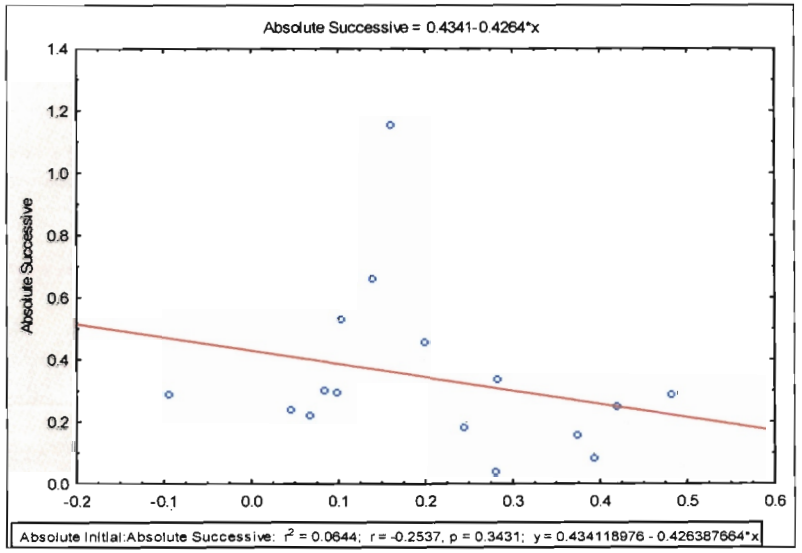
Yearly



2 Yearly

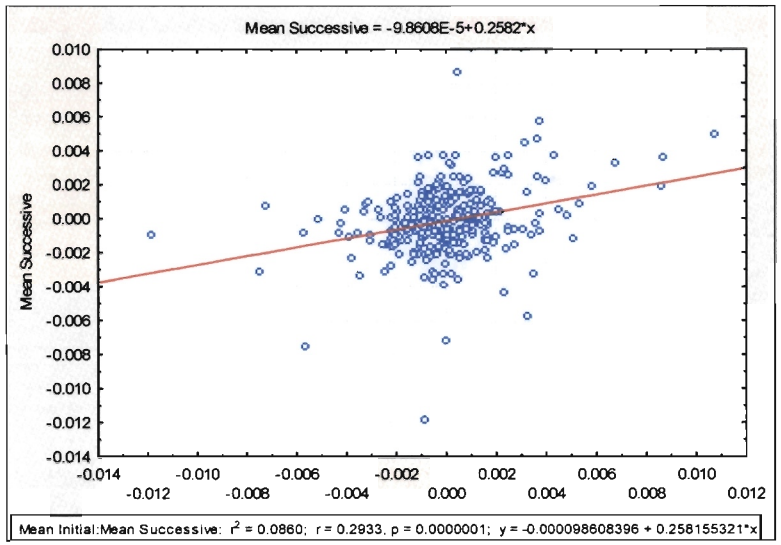


3 Yearly

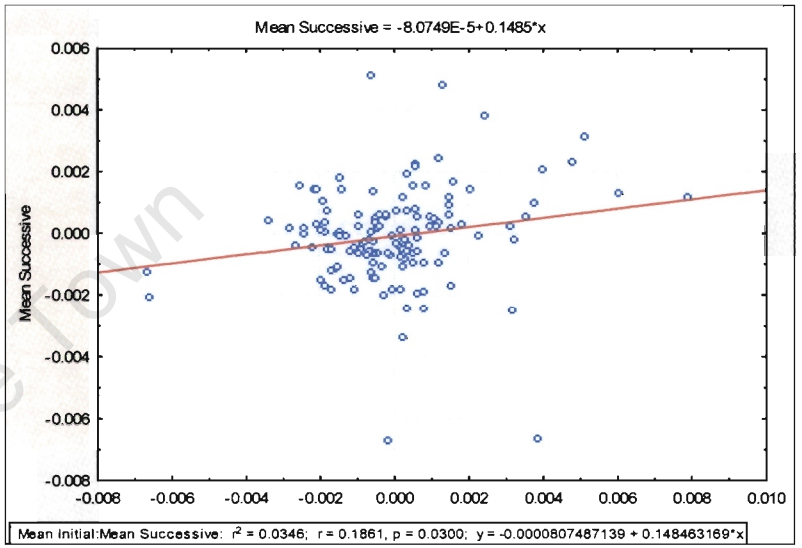


Peer Group Alpha's ("mean" alpha's)

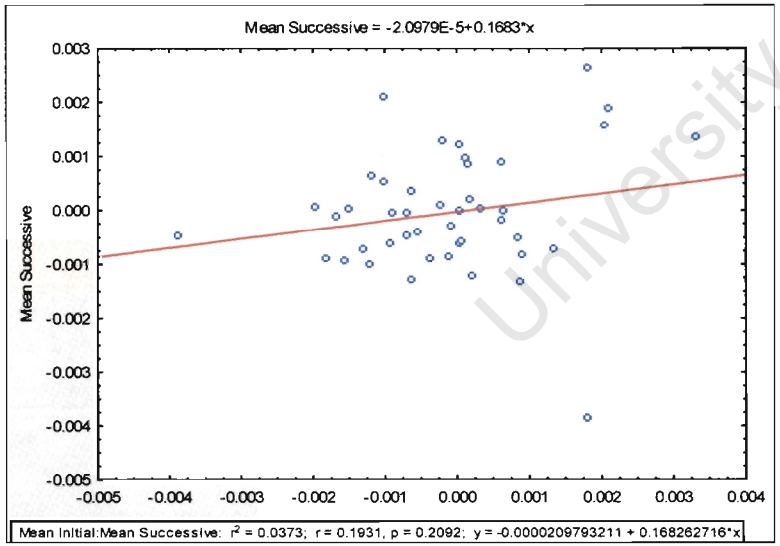
Half Yearly



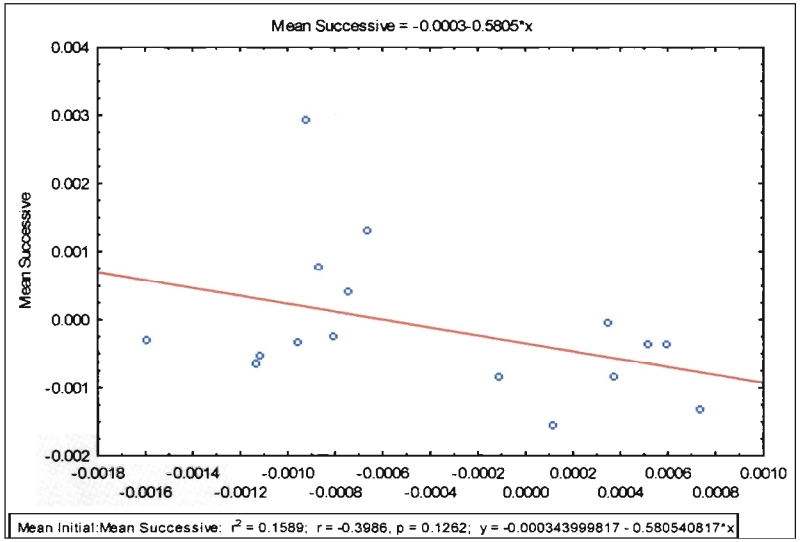
Yearly



2 Yearly



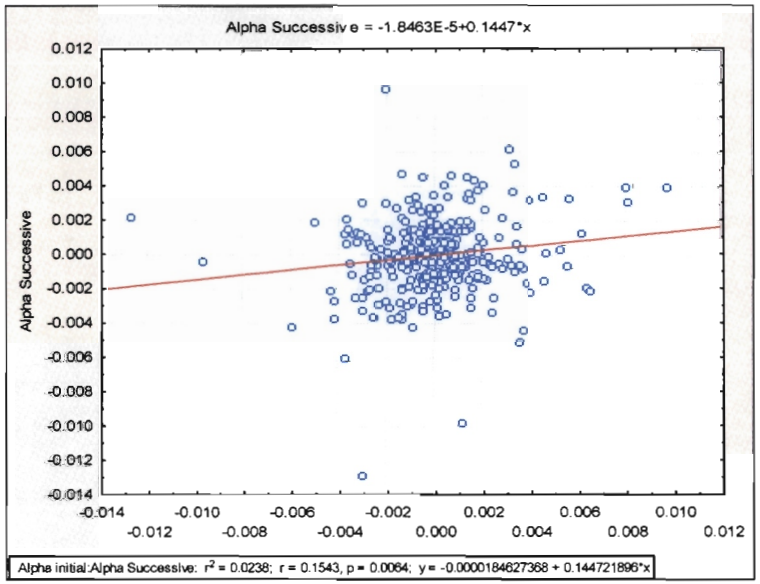
3 Yearly



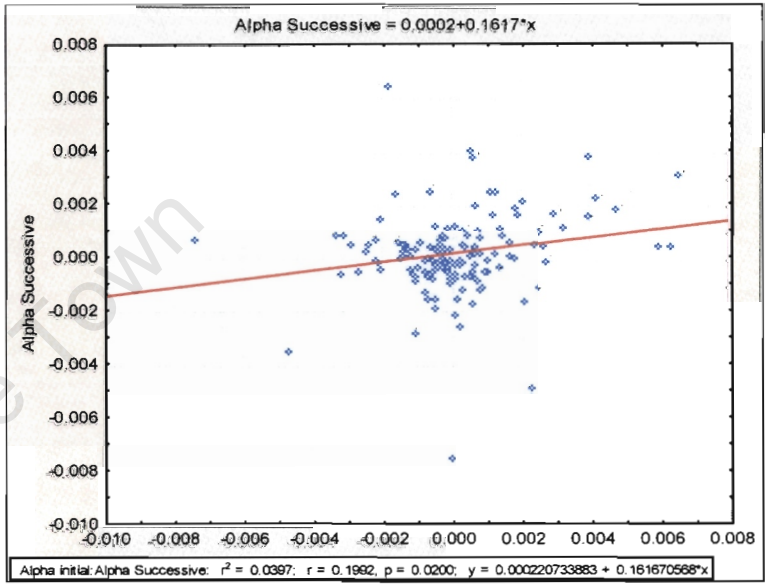
Appendix D

OLS Analysis **2 Factor Alpha's**

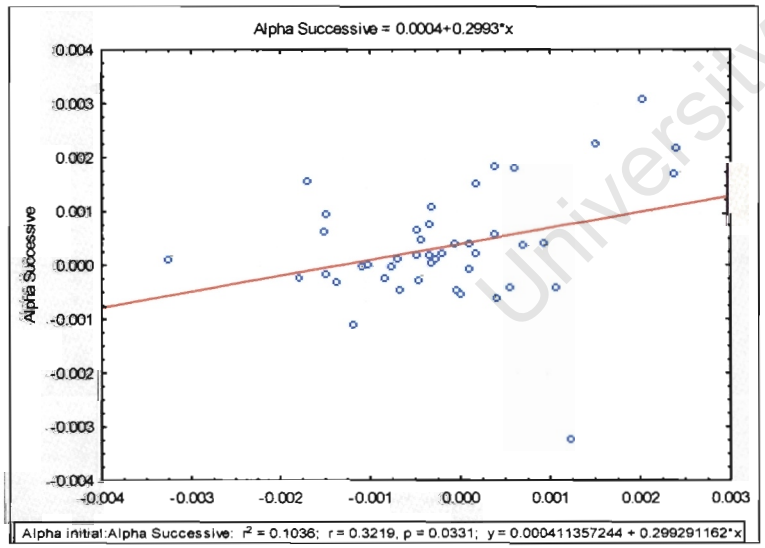
Half Yearly



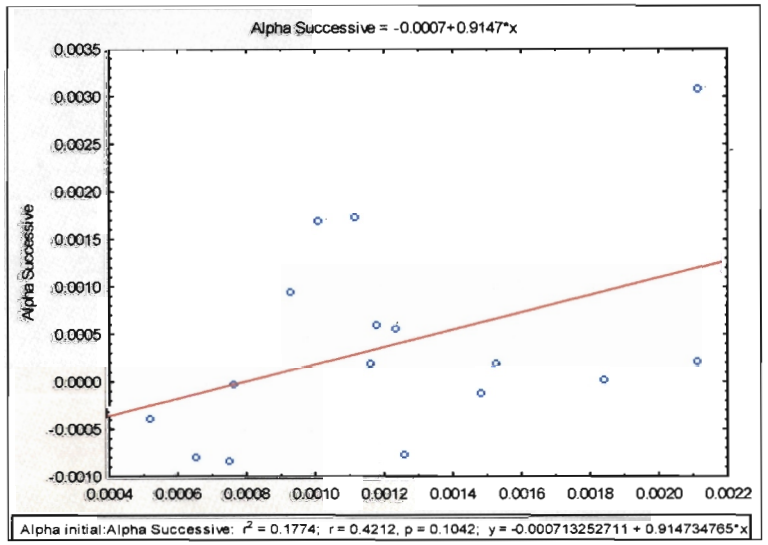
Yearly



2 Yearly



3 Yearly



Appendix E

Average Rank analysis

2-factor ranked alpha's

Half-yearly	Average Rank	Sum of Ranks
ABSA	22.41	268.92
ABSA growth	17.05	170.49
AG equity	5.53	55.29
comm growth	22.42	269.09
coris cap	28.51	171.03
coron equity	18.12	217.47
fnb growth	11.89	118.91
future alb	16.85	202.19
future core eq	20.52	184.64
gryphon	20.22	242.64
inv equity r	16.63	199.56
inv index r	20.14	241.71
metro gen	17.08	204.92
mcubed	21.55	258.59
nedbank fof	18.94	170.43
nedbank equity	20.73	248.78
ned rain	8.67	52.00
oasis cresent	7.98	79.76
OM growth	13.33	80.00
OM top co	20.31	243.67
pru optimiser	16.19	129.49
psg equity	19.67	118.00
rmb equity	14.06	168.68
rmb perform	17.43	174.33
sage	18.93	227.19
sage multi	16.33	98.00
sanlam general	21.11	253.31
sanlam equity mm	23.18	231.78
stanlib index	21.93	263.21
stanlib equity mm	18.12	163.05
stanlib prosperity	15.17	91.00
stanlib wealthbuilder	23.17	139.00
tri linear	23.09	161.63
woolworths	23.21	162.47
OM investors	16.98	203.76

Yearly	Average Rank	Sum of Ranks
	22.89	137.31
	15.07	75.36
	3.27	16.34
	21.88	131.29
	31.33	94.00
	16.84	101.05
	9.65	48.27
	16.80	100.80
	21.25	85.00
	23.55	141.32
	15.30	91.78
	22.18	133.05
	20.25	121.51
	22.53	135.16
	3.81	15.25
	19.88	119.28
	4.00	12.00
	5.84	29.18
	13.00	39.00
	19.41	116.43
	14.44	57.75
	24.00	72.00
	12.88	77.27
	20.25	101.27
	19.27	115.60
	14.67	44.00
	20.20	121.19
	25.38	101.50
	25.17	151.02
	16.31	91.57
	14.33	43.00
	24.00	72.00
	27.31	109.25
	23.06	92.25
	17.41	104.44

2-Yearly	Average Rank	Sum of Ranks
	27.21	81.63
	19.13	38.25
	2.38	4.75
	22.50	67.50
	31.00	31.00
	16.04	48.13
	8.75	17.50
	13.27	39.81
	24.75	49.50
	23.50	70.50
	11.31	33.94
	19.94	59.81
	18.33	55.00
	26.83	80.50
	2.13	4.25
	20.40	61.19
	4.00	4.00
	4.75	9.50
	9.00	9.00
	19.69	59.06
	13.25	26.50
	18.00	18.00
	15.13	45.38
	21.00	42.00
	17.23	51.69
	16.00	16.00
	19.13	57.38
	30.00	60.00
	24.15	72.44
	18.63	37.25
	11.00	11.00
	28.00	28.00
	30.75	61.50
	24.38	48.75
	11.44	34.31

Half yearly	2-factor ranked alpha's		Peer group ranked alpha's		Absolute returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	5.53	55.29	6.52	65.20	6.74	67.45
ned rain	8.67	52.00	5.83	35.00	8.50	51.00
oasis cresent	7.98	79.76	8.02	80.25	8.79	87.85
Middle						
pru optimiser	16.19	129.49	15.63	125.08	16.07	128.58
rmb equity	14.06	168.68	16.94	203.31	14.74	176.92
coron equity	18.12	217.47	19.48	233.74	18.80	225.61
Bottom						
coris cap	28.51	171.03	23.44	140.66	29.44	176.66
sanlam equity mm	23.18	231.78	24.82	248.19	23.02	230.22
tri linear	23.09	161.63	29.33	205.29	26.15	183.04

Peer group ranked alpha's

Half-yearly	Average Rank	Sum of Ranks
ABSA	21.72	260.62
ABSA growth	21.79	217.85
AG equity	6.52	65.20
comm growth	21.72	260.67
coris cap	23.44	140.66
coron equity	19.48	233.74
fnb growth	12.95	129.54
future alb	16.98	203.75
future core eq	21.70	195.29
gryphon	19.77	237.29
inv equity r	14.76	177.12
inv index r	13.05	156.62
metro gen	20.86	250.33
mcubed	20.49	245.91
nedbank fof	19.68	177.13
nedbank equity	20.37	244.42
ned rain	5.83	35.00
oasis cresent	8.02	80.25
OM growth	17.00	102.00
OM top co	20.24	242.82
pru optimiser	15.63	125.08
psg equity	15.00	90.00
rmb equity	16.94	203.31
rmb perform	24.37	243.74
sage	19.29	231.43
sage multi	18.33	110.00
sanlam general	16.89	202.72

Yearly	Average Rank	Sum of Ranks
	21.82	130.94
	16.00	79.98
	3.77	18.84
	20.35	122.10
	30.67	92.00
	17.30	103.82
	11.46	57.30
	15.36	92.16
	22.75	91.00
	24.86	149.14
	15.66	93.96
	17.31	103.84
	21.69	130.13
	22.29	133.72
	5.06	20.25
	22.15	132.88
	4.00	12.00
	6.04	30.18
	16.33	49.00
	20.24	121.42
	13.19	52.75
	16.00	48.00
	16.72	100.31
	22.54	112.70
	19.07	114.40
	12.33	37.00
	21.44	128.64

2-Yearly	Average Rank	Sum of Ranks
	28.88	86.63
	18.00	36.00
	3.00	6.00
	23.85	71.56
	32.00	32.00
	16.29	48.88
	13.63	27.25
	8.79	26.38
	21.75	43.50
	24.35	73.06
	13.08	39.25
	13.94	41.81
	18.81	56.44
	25.00	75.00
	3.88	7.75
	19.73	59.19
	3.00	3.00
	3.13	6.25
	9.00	9.00
	22.50	67.50
	15.13	30.25
	18.00	18.00
	17.65	52.94
	25.00	50.00
	16.02	48.06
	13.00	13.00
	21.48	64.44

Yearly	2-factor ranked alpha's		Peer group ranked alpha's		Absolute returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	3.27	16.34	3.77	18.84	2.82	14.09
ned rain	4.00	12.00	4.00	12.00	3.67	11.00
oasis cresent	5.84	29.18	6.04	30.18	5.29	26.43
Middle						
pru optimiser	14.44	57.75	13.19	52.75	14.38	57.50
rmb equity	12.88	77.27	16.72	100.31	17.14	102.84
coron equity	16.84	101.05	17.30	103.82	16.24	97.44
Bottom						
coris cap	31.33	94.00	30.67	92.00	31.67	95.00
sanlam equity mm	25.38	101.50	25.31	101.25	23.75	95.00
tri linear	27.31	109.25	29.38	117.50	29.63	118.50

sanlam equity mm	24.82	248.19		25.31	101.25		29.75	59.50
stanlib index	15.77	189.29		19.69	118.11		18.54	55.63
stanlib equity mm	15.80	142.20		14.93	74.64		16.38	32.75
stanlib prosperity	17.50	105.00		19.33	58.00		12.00	12.00
stanlib wealthbuilder	18.83	113.00		22.00	66.00		28.00	28.00
tri linear	29.33	205.29		29.38	117.50		32.38	64.75
woolworths	28.06	196.43		25.38	101.50		24.63	49.25
OM investors	16.93	203.11		17.01	102.05		13.33	40.00

Absolute returns ranked

Half-yearly	Average Rank	Sum of Ranks
ABSA	20.34	244.11
ABSA growth	16.63	166.27
AG equity	6.74	67.45
comm growth	21.08	253.01
coris cap	29.44	176.66
coron equity	18.80	225.61
fnb growth	11.98	119.80
future alb	15.12	181.49
future core eq	20.58	185.24
gryphon	22.19	266.27
inv equity r	16.56	198.76
inv index r	18.41	220.86
metro gen	20.30	243.58
mcubed	21.17	254.03
nedbank fof	20.14	181.28
nedbank equity	21.56	258.75
ned rain	8.50	51.00
oasis cresent	8.79	87.85
OM growth	16.83	101.00
OM top co	20.61	247.29
pru optimiser	16.07	128.58
psg equity	14.33	86.00
rmb equity	14.74	176.92
rmb perform	20.50	204.96
sage	18.83	225.97
sage multi	13.67	82.00
sanlam general	20.74	248.91
sanlam equity mm	23.02	230.22
stanlib index	19.52	234.20
stanlib equity mm	15.29	137.61
stanlib prosperity	19.17	115.00
stanlib wealthbuilder	18.50	111.00
tri linear	26.15	183.04
woolworths	25.28	176.93
OM investors	16.11	193.34

Yearly	Average Rank	Sum of Ranks
	22.42	134.50
	16.61	83.05
	2.82	14.09
	18.66	111.94
	31.67	95.00
	16.24	97.44
	11.58	57.89
	14.33	85.96
	21.81	87.25
	25.57	153.40
	15.11	90.63
	16.49	98.93
	20.82	124.95
	23.82	142.91
	20.38	81.50
	21.55	129.28
	3.67	11.00
	5.29	26.43
	15.33	46.00
	21.75	130.49
	14.38	57.50
	17.00	51.00
	17.14	102.84
	21.20	105.98
	16.55	99.33
	12.33	37.00
	19.88	119.30
	23.75	95.00
	18.90	113.39
	14.56	72.80
	18.33	55.00
	22.00	66.00
	29.63	118.50
	24.13	96.50
	17.45	104.73

2-Yearly	Average Rank	Sum of Ranks
	28.94	86.81
	15.75	31.50
	2.38	4.75
	22.04	66.13
	33.00	33.00
	14.46	43.38
	13.13	26.25
	8.79	26.38
	21.88	43.75
	25.60	76.81
	11.92	35.75
	15.02	45.06
	19.63	58.88
	26.08	78.25
	23.38	46.75
	19.40	58.19
	3.00	3.00
	2.63	5.25
	8.00	8.00
	22.92	68.75
	14.50	29.00
	16.00	16.00
	16.48	49.44
	19.25	38.50
	14.02	42.06
	11.00	11.00
	21.81	65.44
	26.63	53.25
	17.50	52.50
	15.63	31.25
	12.00	12.00
	29.00	29.00
	31.88	63.75
	24.63	49.25
	15.31	45.94

2-Yearly	2-factor ranked alpha's		Peer group ranked alpha's		Absolute returns ranked	
	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks	Average Rank	Sum of Ranks
Top						
AG equity	2.38	4.75	3.00	6.00	2.38	4.75
ned rain	4.00	4.00	3.00	3.00	3.00	3.00
oasis cresent	4.75	9.50	3.13	6.25	2.63	5.25
Middle						
pru optimiser	13.25	26.50	15.13	30.25	14.50	29.00
rmb equity	17.65	52.94	16.48	49.44	16.48	49.44
coron equity	16.04	48.13	16.29	48.88	14.46	43.38
Bottom						
coris cap	31.00	31.00	32.00	32.00	33.00	33.00
sanlam equity mm	30.00	60.00	29.75	59.50	26.63	53.25
tri linear	30.75	61.50	32.38	64.75	31.88	63.75

Appendix F

Spearman's Rank Correlation Analysis

2 Factor Alpha's

Half Yearly

	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.150000	0.567671	0.579249
31/12/1998 & 30/06/1999	16	-0.302941	-1.18939	0.254067
30/06/1999 & 31/12/1999	22	0.339356	1.613389	0.122328
31/12/1999 & 30/06/2000	25	0.205385	1.006446	0.324673
30/06/2000 & 31/12/2000	28	0.339354	1.839534	0.077283
31/12/2000 & 30/06/2001	29	-0.265025	-1.42818	0.164707
30/06/2001 & 31/12/2001	**35**	**0.588235**	**4.178554**	**0.000202**
31/12/2001 & 30/06/2002	**35**	**0.519048**	**3.488409**	**0.001399**
30/06/2002 & 31/12/2002	**35**	**0.416807**	**2.634087**	**0.012744**
31/12/2002 & 30/06/2003	35	-0.281513	-1.68533	0.101361
30/06/2003 & 31/12/2003	35	-0.009524	-0.054713	0.956697

Average 0.154471

Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	16	-0.355882	-1.42488	0.176104
31/12/1999 & 31/12/2000	22	0.183512	0.834869	0.413653
31/12/2000 & 31/12/2001	28	-0.266557	-1.41020	0.170332
31/12/2001 & 31/12/2002	**35**	**0.566106**	**3.945053**	**0.000393**
31/12/2002 & 31/12/2003	**35**	**0.515686**	**3.457598**	**0.001521**

Average 0.058442

2 Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	5	-0.500000	-1.00000	0.391002
31/12/2001 & 31/12/2003	**28**	**0.399267**	**2.177423**	**0.039095**

Average -0.00916

3 Yearly

	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	0.379412	1.534356	0.147227

Peer Group Alpha's

Half Yearly

	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.005882	0.022010	0.982751
31/12/1998 & 30/06/1999	16	0.305882	1.202126	0.249254
30/06/1999 & 31/12/1999	**22**	**0.638622**	**3.711410**	**0.001380**
31/12/1999 & 30/06/2000	25	0.282308	1.411307	0.171539
30/06/2000 & 31/12/2000	28	0.296661	1.583988	0.125286
31/12/2000 & 30/06/2001	**29**	**0.391133**	**2.208314**	**0.035899**
30/06/2001 & 31/12/2001	**35**	**0.548179**	**3.765181**	**0.000652**
31/12/2001 & 30/06/2002	**35**	**0.440056**	**2.815159**	**0.008160**
30/06/2002 & 31/12/2002	35	0.258263	1.535709	0.134143
31/12/2002 & 30/06/2003	35	0.134454	0.779456	0.441266
30/06/2003 & 31/12/2003	35	0.056303	0.323947	0.748022

Average 0.305249

Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	**16**	**-0.526471**	**-2.31697**	**0.036167**
31/12/1999 & 31/12/2000	22	0.363072	1.742620	0.096757
31/12/2000 & 31/12/2001	28	0.130816	0.672813	0.507003
31/12/2001 & 31/12/2002	**35**	**0.433613**	**2.764313**	**0.009261**
31/12/2002 & 31/12/2003	**35**	**0.506162**	**3.371467**	**0.001920**

Average 0.082472

2 Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	16	0.036792	0.137755	0.892395
31/12/2001 & 31/12/2003	28	0.329502	1.779514	0.086849

Average 0.033299

3 Yearly

	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	-0.350000	-1.39800	0.183869

Absolute Returns

Half Yearly

	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.352941	1.411416	0.179959
31/12/1998 & 30/06/1999	16	-0.382353	-1.54828	0.143859
30/06/1999 & 31/12/1999	**22**	**0.568605**	**3.091232**	**0.005758**
31/12/1999 & 30/06/2000	25	0.106923	0.515742	0.610957
30/06/2000 & 31/12/2000	28	0.021346	0.108871	0.914141
31/12/2000 & 30/06/2001	29	0.220690	1.175726	0.249968
30/06/2001 & 31/12/2001	**35**	**0.631092**	**4.673604**	**0.000048**
31/12/2001 & 30/06/2002	35	0.434454	2.770915	0.009111
30/06/2002 & 31/12/2002	35	0.259944	1.546425	0.131539
31/12/2002 & 30/06/2003	35	-0.177871	-1.03835	0.306656
30/06/2003 & 31/12/2003	35	0.128011	0.741469	0.463654

Average 0.196708

Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1998 & 31/12/1999	16	-0.176471	-0.670820	0.513251
31/12/1999 & 31/12/2000	22	0.174478	0.792443	0.437402
31/12/2000 & 31/12/2001	28	0.186645	0.968728	0.341607
31/12/2001 & 31/12/2002	**35**	**0.356022**	**2.188595**	**0.035809**
31/12/2002 & 31/12/2003	**35**	**0.535014**	**3.637860**	**0.000928**

Average 0.09779

2 Yearly

	Valid	Spearman	t(n-2)	p-level
31/12/1999 & 31/12/2001	16	0.002941	0.011005	0.991375
31/12/2001 & 31/12/2003	28	0.234264	1.228707	0.230187

Average 0.021564

3 Yearly

	Valid	Spearman	t(N-2)	p-level
31/12/2000 & 31/12/2003	16	-0.285294	-1.11376	0.284139

Appendix F

Half-yearly Spearmans rank correlation analysis

2 Factor ALPHA

	30/06/1998		31/12/1998		30/06/1999		Relative rank
ABSA	2	4	4	9	22	35	16
ABSA growth					9	14	
AG equity					2	3	
comm growth	6	13	10	22	20	32	14
corts cap							
coron equity	5	11	15	33	4	6	1
fnb growth					3	5	
future alb	6	18	16	35	12	19	7
future core eq							
gryphon	15	33	6	13	7	11	4
inv equity r	10	22	11	24	16	25	10
inv index r	12	26	3	7	17	27	11
metro gen	3	7	1	2	21	33	15
mcubed	4	9	14	31	19	30	13
nedbank for							
nedbank equity	1	2	5	11	5	6	2
ned rain							
oasis crescent					1	2	
OM growth							
OM top co	11	24	12	26	14	22	8
pru optimiser							
peg equity							
rmb equity	13	28	8	20	6	10	3
rmb perform					11	18	
sage	14	31	13	28	8	13	5
sage multi							
sanlam general	9	20	7	15	18	23	12
sanlam equity fam					15	24	
stanlib index	16	35	6	18	10	16	6
stanlib equity mm							
stanlib prosperity							
stanlib wealthbuilder							
tri linear							
woolworths							
OM investors	7	15	2	4	13	21	6

	31/12/1999		Relative rank	30/06/2000		Relative rank	31/12/2000		Relative rank
ABSA	25	35	22	28	35	25	28	34	27
ABSA growth	6	8	6	1	1	1	17	21	16
AG equity	1	1	1	22	28	20	1	1	1
comm growth	16	25	16	20	25	18	10	17	9
corts cap					0		5	6	
coron equity	7	10	7	21	26	19	16	19	15
fnb growth	12	17	11	15	18	14	27	33	26
future alb	22	31	19	25	31	22	22	27	21
future core eq	17	24		14	18	13	21	25	20
gryphon	8	11	8	10	13	10	9	11	8
inv equity r	5	7	5	16	20	15	25	30	24
inv index r	10	14	9	7	9	7	15	18	14
metro gen	4	6	4	3	4	3	2	2	2
mcubed	24	34	21	9	11	9	20	24	19
nedbank for	18	27		4	5	4	4	5	4
nedbank equity	23	32	20	26	33	23	29	35	28
ned rain					0				
oasis crescent	2	3	2	11	14	11	3	4	3
OM growth					0				
OM top co	14	20	13	24	30	21	12	14	11
pru optimiser				13	16		6	7	5
peg equity					0				
rmb equity	15	21	14	5	6	5	23	28	22
rmb perform	11	15	10	2	3	2	19	23	18
sage	20	28	17	18	24	17	8	10	7
sage multi					0				
sanlam general	21	29	18	12	15	12	11	13	10
sanlam equity fam	3	4	3	27	34	24	24	29	23
stanlib index	16	22	15	6	8	6	14	17	13
stanlib equity mm	9	13		8	10	8	7	8	6
stanlib prosperity					0				
stanlib wealthbuilder					0				
tri linear				17	21		26	31	25
woolworths				23	29		18	22	17
OM investors	13	18	12	18	23	16	13	16	12

	30/06/2001	Relative rank	31/12/2001	30/06/2002	31/12/2002	30/06/2003	31/12/2003
ABSA	14	10	16	26	22	19	18
ABSA growth	30	29	31	27	10	21	2
AG equity	2	2	8	1	1	6	4
comm growth	11	8	30	23	30	25	21
corts cap	31	26	35	31	12	22	34
coron equity	27	23	19	21	17	8	20
fnb growth	6	6	4	6	21	2	3
future alb	1	1	1	2	4	28	6
future core eq	18	14	21	24	23	15	17
gryphon	26	24	33	29	15	13	33
inv equity r	15	12	6	11	27	4	7
inv index r	24	20	18	14	34	24	27
metro gen	33	28	24	33	24	11	26
mcubed	23	19	14	30	28	3	22
nedbank for	22	18	27	15	26	20	24
nedbank equity	7	5	23	22	16	33	25
ned rain	3		3	9	2	34	1
oasis crescent	4	3	2	4	3	35	10
OM growth	30		9	6	5	7	23
OM top co	25	21	26	16	6	23	11
pru optimiser	12	9	13	13	29	31	8
peg equity	34		34	10	16	12	12
rmb equity	15	11	7	3	25	1	5
rmb perform	21	17	10	32	35	5	13
sage	5	4	5	17	11	26	30
sage multi	8		29	18	9	27	9
sanlam general	32	27	32	12	19	9	28
sanlam equity fam	19	15	12	34	32	30	14
stanlib index	26	22	20	20	33	17	32
stanlib equity mm	29	25	22	26	20	16	19
stanlib prosperity	10		11	5	7	29	29
stanlib wealthbuilder	13		25	25	31	10	35
tri linear	9	7	28	35	8	14	15
woolworths	17	13	15	19	13	32	16
OM investors	20	16	17	7	14	18	31

	Average Rank	Sum of Ranks	Std Dev
ABSA	22.4086	268.9161	10.83466673
ABSA growth	17.0465	170.4654	11.7924744
AG equity	5.5289	55.2887	8.068877932
comm growth	22.4239	269.0871	7.076766669
corts cap	28.5057	171.0345	13.6842781
coron equity	18.1228	217.4740	8.166306144
fnb growth	11.6909	116.9089	10.01392832
future alb	16.8484	202.1826	13.35217933
future core eq	20.5161	164.6448	3.722866718
gryphon	20.2197	242.6369	9.633166699
inv equity r	16.6304	199.5645	8.30786032
inv index r	20.1428	241.7114	8.269234709
metro gen	17.0769	204.9229	12.94328886
mcubed	21.5492	258.5902	9.881326046
nedbank for	18.9504	170.4276	8.793327771
nedbank equity	20.7316	248.7795	11.47387718
ned rain	8.6667	52.0000	12.86727176
oasis crescent	7.9762	79.7616	10.38427619
OM growth	13.3333	80.0000	10.04823184
OM top co	20.3057	243.6680	7.091678473
pru optimiser	16.1864	129.4914	9.011880332
peg equity	19.6667	118.0000	12.67420566
rmb equity	14.0556	168.6791	10.80434339
rmb perform	17.4331	174.3310	10.64768868
sage	18.9329	227.1949	9.828794744
sage multi	16.3333	98.0000	10.88448115
sanlam general	21.1094	253.3122	8.412453832
sanlam equity fam	23.1779	231.7792	10.40309389
stanlib index	21.9538	263.2056	8.161727615
stanlib equity mm	18.1165	163.0483	7.020268299
stanlib prosperity	15.1667	91.0000	11.60362282
stanlib wealthbuilder	23.1667	139.0000	12.84695177
tri linear	23.0899	161.6293	10.32149196
woolworths	23.2106	162.4741	6.780434287
OM investors	16.9799	203.7590	6.803202346

Multiplier (as per equally weighted relative rank)	30/06/1998	31/12/1998	30/06/1999	31/12/1999	30/06/2000	31/12/2000
	2.188	2.188	1.591	1.400	1.250	1.207

	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	16	0.1500	0.5677	0.5792
31/12/1998 & 30/06/1999	16	-0.3029	-1.1894	0.2541
30/06/1999 & 31/12/1999	22	0.3394	1.6134	0.1223
31/12/1999 & 30/06/2000	25	0.2054	1.0064	0.3247
30/06/2000 & 31/12/2000	28	0.3394	1.8395	0.0773
31/12/2000 & 30/06/2001	29	-0.2650	-1.4282	0.1647
30/06/2001 & 31/12/2001	**35**	**0.5882**	**4.1786**	**0.0002**
31/12/2001 & 30/06/2002	**35**	**0.5190**	**3.4884**	**0.0014**
30/06/2002 & 31/12/2002	**35**	**0.4168**	**2.6341**	**0.0127**
31/12/2002 & 30/06/2003	35	-0.2815	-1.6853	0.1014
30/06/2003 & 31/12/2003	35	-0.0095	-0.0547	0.9567

Mean Returns

	30/06/1998	31/12/1998	30/06/1999	Relative rank	31/12/1999	Relative rank	30/06/2000	Relative rank	31/12/2000	Relative rank	30/06/2001	Relative rank	31/12/2001	30/06/2002	31/12/2002	30/06/2003	31/12/2003
ABSA	2	10	18	14	23	21	28	25	20	19	8	5	15	25	22	20	25
ABSA growth			22		12	11	9	7	27	21	35	29	35	31	8	10	18
AG equity			1		1	1	12	12	1	1	2	2	29	2	1	7	5
[illegible] growth	6	12	21	16	21	18	20	18	12	11	9	8	30	24	17	17	22
coris cap									8		17	13	24	29	19	31	11
coron equity	5	2	16	12	15	13	21	19	18	17	31	26	21	28	16	4	24
frb growth			3		17	15	16	15	24	23	18	14	6	8	14	2	4
future alb	10	16	10	8	23	20	25	23	17	16	1	1	5	1	4	22	14
future core eq					18		15	14	21	20	24	19	19	21	21	21	20
gryphon	13	9	4	1	3	3	10	10	15	14	25	20	28	30	29	27	9
inv equity f	6	13	11	7	7	7	18	16	26	25	10	9	3	6	27	3	1
inv index f	9	3	5	2	3	2	11	11	9	8	5	4	4	9	33	34	10
metro gen	12	5	17	13	16	14	5	5	7	7	30	25	17	32	30	19	21
ndubed	3	15	19	15	25	22	8	8	16	15	14	11	18	26	28	15	13
nedbank for					14		6	6	5	5	20	16	26	18	31	23	26
nedbank equity	4	1	7	4	19	16	27	24	29	26	12	10	25	17	13	30	30
ned rain											3		2	12	2	14	2
oasis crescent			2		6	6	1	1	2	2	4	3	1	3	3	35	19
OM growth											33		32	10	6	6	15
OM top co	11	14	12	8	11	10	23	21	14	13	32	27	27	19	9	18	3
pru optimiser							17		4	4	7	6	13	16	28	28	7
psg equity											15		10	11	12	8	34
rmb equity	14	11	15	11	10	9	4	4	23	22	26	21	16	4	25	1	8
rmb perform			20		20	17	3	3	25	24	34	28	11	33	34	5	33
sage	15	7	13	6	22	19	19	17	10	9	16	12	8	23	5	9	35
sage multi											13		20	27	7	11	32
sanlam general	1	6	14	10	13	12	8	9	13	12	29	24	33	13	20	13	12
sanlam equity					9		24	22	27	26	28	23	31	35	23	25	31
stanlib index	18	4	6	3	5	5	7	7	8	6	8	7	9	15	32	32	17
stanlib equity			8		4	4	13	13	3	3	19	15	7	22	24	34	8
stanlib property											22		22	5	11	29	16
stanlib wealthbuilder											11		14	14	35	12	27
[illegible] linear							14		28	27	27	22	34	34	10	26	23
woolworths							26		19	18	21	17	23	20	15	33	29
OM investors	7	6	9	5	8	8	22	20	11	10	23	16	12	7	16	16	28

Average Rank	Sum of Ranks
21.7187	260.6243
21.7852	217.8517
6.5198	65.1978
21.7222	260.6668
23.4425	140.6552
19.4784	233.7412
12.9538	129.5382
16.9793	203.7513
21.6994	195.2948
19.7743	237.2921
14.7597	177.1168
13.0514	156.6166
20.8609	250.3312
20.4927	245.9126
19.6816	177.1345
20.3687	244.4239
5.8333	35.0000
8.0246	80.2456
17.0000	102.0000
20.2354	242.8250
15.6347	125.0776
15.0000	90.0000
16.9425	203.3098
24.3741	243.7406
19.2855	231.4258
18.3333	110.0000
16.8937	202.7249
24.8186	248.1862
15.7739	189.2868
15.7998	142.1980
17.5000	105.0000
18.8333	113.0000
29.3276	205.2931
28.0616	196.4310
16.9255	203.1065

	Valid	Spearman	t(N-2)	p-level
30/06/1998 & 31/12/1998	18	0.0044	0.0770	[illegible]
31/12/1998 & 30/06/1999	16	0.3059	1.2821	0.2452
30/06/1999 & 31/12/1999	22	0.6384	3.7114	0.0014
31/12/1999 & 30/06/2000	24	0.2823	1.4113	0.1719
30/06/2000 & 31/12/2000	28	0.2637	1.4040	0.1283
31/12/2000 & 30/06/2001	29	0.3811	2.2383	0.0366
30/06/2001 & 31/12/2001	35	0.5482	3.7852	0.0007
31/12/2001 & 30/06/2002	35	0.4401	2.8152	0.0082
30/06/2002 & 31/12/2002	35	0.2583	1.5367	0.1341
31/12/2002 & 30/06/2003	35	0.1345	0.7799	0.4418
30/06/2003 & 31/12/2003	35	0.0563	0.3239	0.7489

Absolute

	30/06/1998	31/12/1998	30/06/1999	Relative rank	31/12/1999	Relative rank	30/06/2000	Relative rank	31/12/2000	Relative rank	30/06/2001	Relative rank	31/12/2001	30/06/2002	31/12/2002	30/06/2003	31/12/2003
ABSA	2	1	22	16	25	22	28	26	22	21	10	7	16	26	21	17	16
ABSA growth			13		3	3	1	1	20	19	35	29	24	29	7	19	2
AG equity			1		1	1	25	22	1	1	2	2	14	2	1	8	5
comm growth	8	9	20	14	19	18	22	20	11	10	7	5	28	25	18	22	21
coris cap									8		23	19	32	31	19	27	35
coron equity	5	15	7	3	10	9	20	18	18	17	29	24	19	24	15	4	19
fnb growth			3		14	13	13	12	25	24	13	10	6	8	17	2	3
future alb	8	19	8	4	13	12	27	24	16	15	1	1	4	1	4	26	9
future core eq					16		14	13	21	20	20	16	22	22	22	16	18
gryphon	15	8	5	2	6	6	6	6	15	14	28	23	34	30	31	18	33
inv equity f	10	11	18	12	9	8	16	14	27	26	11	8	3	6	28	5	6
inv index f	12	10	9	5	4	4	11	10	10	9	12	9	9	9	35	31	31
metro gen	3	3	21	15	17	14	4	4	6	6	32	27	26	34	30	13	26
mcubed	4	13	19	13	24	21	10	9	17	16	14	11	21	28	26	7	24
nedbank fof					15		5	5	5	5	26	22	29	19	29	20	25
nedbank equity	1	4	4	1	23	20	21	19	29	28	25	21	31	17	14	34	27
ned rain											3		2	13	2	30	1
oasis cresent			2		2	7	17	15	3	3	4	3	1	4	3	35	10
OM growth											34		27	10	5	3	22
OM top co	11	7	15	10	21	18	19	17	14	13	31	26	30	18	9	15	11
pru optimiser							15		4	4	9	6	17	16	27	28	8
psg equity											27		12	12	12	11	12
rmb equity	13	8	12	8	12	11	2	2	24	23	17	14	18	3	25	1	4
rmb perform			16		20	17	3	3	23	22	30	25	7	32	32	6	13
sage	14	14	10	6	18	15	23	21	9	8	6	4	5	21	8	21	23
sage multi											5		13	27	6	24	7
sanlam general	9	5	17	11	22	19	7	7	13	12	33	28	35	11	20	9	28
sanlam equity mm			6		7	7	26	23	26	25	24	20	20	33	24	32	14
stanlib index	16	12	11	7	5	5	8	8	7	7	15	12	10	15	33	25	32
stanlib equity mm					8		12	11	2	2	21	17	8	23	23	14	20
stanlib prosperity											18		23	5	11	29	29
stanlib wealthbuilder											8		11	14	34	10	34
fti linear							9		28	27	22	18	33	35	10	23	15
woolworths							24		19	18	16	13	25	20	13	33	17
OM investors	7	2	14	6	11	10	19	16	12	11	19	15	15	7	16	12	30

Average Rank	Sum of Ranks
20.3429	244.1142
16.6270	166.2697
6.7448	67.4478
21.0839	253.0065
29.4425	176.6552
18.8009	225.6105
11.9795	119.7951
15.1240	181.4876
20.5828	185.2448
22.1892	266.2705
16.5633	198.7601
18.4052	220.8621
20.2980	243.5755
21.1693	254.0320
20.1427	181.2845
21.5626	258.7511
8.5000	51.0000
8.7853	87.8525
16.8333	101.0000
20.6071	247.2852
16.0722	128.5776
14.3333	86.0000
14.7432	176.9189
20.4963	204.9632
18.8309	225.9712
13.6667	82.0000
20.7425	248.9101
23.0225	230.2248
19.5165	234.1983
15.2904	137.6138
19.1667	115.0000
18.5000	111.0000
26.1490	183.0431
25.2759	176.9310
16.1119	193.3430

	Valid	Spearman	KN-2)	p-level
30/06/1998 & 31/12/1998	15	0.3529	1.4114	0.1800
31/12/1998 & 30/06/1999	16	-0.3824	-1.5483	0.1439
30/06/1999 & 31/12/1999	22	0.5686	3.0912	0.0058
31/12/1999 & 30/06/2000	25	0.1059	0.5157	0.6110
30/06/2000 & 31/12/2000	28	0.0213	0.1089	0.9141
31/12/2000 & 30/06/2001	29	0.2207	1.1757	0.2500
30/06/2001 & 31/12/2001	35	0.6311	4.6736	0.0000
31/12/2001 & 30/06/2002	35	0.4345	2.7709	0.0091
30/06/2002 & 31/12/2002	35	0.2599	1.5464	0.1315
31/12/2002 & 30/06/2003	35	-0.1779	-1.0343	0.3067
30/06/2003 & 31/12/2003	35	0.1280	0.7415	0.4637

Appendix G

Calculated performance values in each specific period (half-yearly, yearly, 2-yearly and 3-yearly) and for each of the following performance measures:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) . performance using a single factor APT framework
4. Absolute (raw return) performance

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/1998-30/06/1998

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.03	0.3856	0.01210	0.170	0.88	0.00000	0.00677	**1.074**	0.87	76.76	0.00641	0.0244	-0.18	**1.05**	0.4441
comm growth	0.09	0.1548	0.00623	**0.246**	0.90	0.00000	0.00166	**0.971**	0.85	63.73	0.00236	0.3697	-0.02	**0.937**	0.2590
coron equity	0.02	0.469	0.00770	0.112	0.89	0.00000	0.00345	**0.846**	0.88	82.06	0.00351	0.0963	-0.11	**1.01**	0.2977
future alb	0.11	0.1138	0.00385	**0.298**	0.60	0.00001	-0.00006	**0.871**	0.50	10.91	0.00118	0.8222	0.035	**0.682**	0.1878
gryphon	0.04	0.3429	0.00045	0.189	0.95	0.00000	-0.00515	**1.134**	0.97	354.93	-0.00271	0.0526	**0.235**	**0.81**	0.0828
inv equity r	0.03	0.3724	0.00476	0.149	0.92	0.00000	0.00011	**0.937**	0.90	103.77	0.00044	0.8266	-0.07	**0.999**	0.2074
inv index r	0.05	0.2624	0.00103	0.213	0.94	0.00000	-0.00423	**1.082**	0.99	849.29	-0.00111	0.1954	**0.353**	**0.72**	0.1015
metro gen	0.04	0.3275	0.00968	0.200	0.95	0.00000	0.00395	**1.163**	0.93	147.44	0.00561	0.0125	0.107	**0.889**	0.3615
mcubed	0.07	0.2063	0.00769	0.209	0.85	0.00000	0.00339	**0.902**	0.85	62.01	0.00371	0.1489	-0.06	**0.962**	0.3035
nedbank equity	0.08	0.1802	0.00978	**0.253**	0.74	0.00000	0.00528	**0.961**	0.73	29.03	0.00654	0.1017	0.076	**0.799**	0.3724
OM top co	0.04	0.321	0.00323	0.190	0.92	0.00000	-0.00208	**1.075**	0.93	145.82	0.00016	0.9357	0.214	**0.807**	0.1616
rmb equity	0.06	0.2377	0.00073	0.203	0.95	0.00000	-0.00405	**0.988**	0.94	172.78	-0.00234	0.1626	0.157	**0.857**	0.0953
sage	0.04	0.3695	0.00035	0.135	0.92	0.00000	-0.00384	**0.846**	0.94	184.16	-0.00259	0.0718	0.129	**0.88**	0.0831
sanlam general	0.04	0.353	0.00461	0.163	0.96	0.00000	-0.00036	**1.004**	0.96	302.70	0.00078	0.5388	0.07	**0.934**	0.2027
stanlib index	0.02	0.4729	0.00014	0.147	0.93	0.00000	-0.00570	**1.158**	0.95	192.97	-0.00304	0.1098	**0.253**	**0.784**	0.0704
OM investors	0.01	0.5697	0.00593	0.100	0.92	0.00000	0.00088	**0.988**	0.93	138.40	0.00174	0.3516	0.023	**0.947**	0.2375

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/1998-31/12/1998

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.13	0.0757	-0.00870	**0.564**	0.93	0.00000	0.00325	**1.407**	0.84	56.04	-0.00183	0.8129	-0.05	**0.92**	-0.3398
comm growth	0.11	0.0928	-0.00978	**0.414**	0.95	0.00000	-0.00010	**1.100**	0.91	105.73	-0.00329	0.4713	-0.07	**0.96**	-0.2930
coron equity	0.12	0.0816	-0.00794	0.219	0.91	0.00000	-0.00322	**0.553**	0.84	59.34	-0.00499	0.1043	0.0820	**0.90**	-0.1726
future alb	0.18	0.0315	-0.01150	**0.345**	0.72	0.00000	-0.00721	**0.637**	0.60	16.72	-0.00973	0.1247	0.178	**0.72**	-0.2849
gryphon	0.02	0.4789	-0.01140	0.165	0.91	0.00000	-0.00002	**0.998**	0.98	526.60	-0.00201	0.3089	**0.09**	**0.97**	-0.2567
inv equity r	0.11	0.0934	-0.00998	**0.390**	0.98	0.00000	-0.00061	**1.056**	0.93	156.17	-0.00346	0.3385	0.051	**0.96**	-0.2866
inv index r	0.01	0.6736	-0.01054	0.084	0.89	0.00000	-0.00026	**0.841**	0.98	616.08	-0.00180	0.2510	**0.288**	**0.89**	-0.2093
metro gen	0.05	0.2719	-0.00967	**0.284**	0.98	0.00000	0.00232	**1.153**	0.94	162.81	-0.00054	0.8888	0.094	**0.94**	-0.2639
mcubed	0.09	0.1333	-0.01201	**0.402**	0.96	0.00000	-0.00088	**1.197**	0.93	138.56	-0.00438	0.3160	-0.09	**0.98**	-0.3381
nedbank equity	0.10	0.1117	-0.00727	**0.340**	0.89	0.00000	0.00089	**0.920**	0.80	43.89	-0.00197	0.7301	0.171	**0.84**	-0.2141
OM top co	0.08	0.1694	-0.01127	**0.355**	0.98	0.00000	-0.00001	**1.163**	0.95	204.42	-0.00355	0.3088	-0.01	**0.98**	-0.3107
rmb equity	0.07	0.1965	-0.01054	**0.324**	0.98	0.00000	0.00057	**1.125**	0.97	305.58	-0.00284	0.3084	-0.04	**0.99**	-0.2866
sage	0.02	0.5164	-0.01069	0.111	0.92	0.00000	-0.00222	**0.731**	0.96	301.14	-0.00366	0.0609	0.083	**0.96**	-0.2111
sanlam general	0.07	0.1848	-0.00913	**0.299**	0.98	0.00000	0.00077	**1.011**	0.97	319.24	-0.00239	0.3289	0.01	**0.98**	-0.2440
stanlib index	0.02	0.5386	-0.01037	0.118	0.91	0.00000	-0.00077	**0.822**	0.98	602.61	-0.00247	0.1104	0.216	**0.92**	-0.2125
OM investors	0.06	0.2153	-0.00987	**0.338**	0.98	0.00000	0.00241	**1.223**	0.94	167.49	-0.00119	0.7651	0.048	**0.96**	-0.2866

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

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2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

31/12/1998-30/06/1999

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.01	0.6023	0.00374	-0.112	0.90	0.00000	-0.00567	1.248	0.87	71.17	-0.00367	0.1986	0.094	0.908	0.1383
ABSA growth	0.00	0.7671	0.00215	0.033	0.65	0.00000	-0.00109	0.546	0.66	21.35	0.00015	0.9465	0.006	0.811	0.1486
AG equity	0.01	0.6808	0.01872	-0.089	0.65	0.00000	0.01074	1.069	0.72	28.69	0.00799	0.0594	0.589	0.510	0.6838
comm growth	0.03	0.4245	0.00254	-0.115	0.79	0.00000	-0.00384	0.784	0.72	28.80	-0.00251	0.3600	0.032	0.844	0.1111
coron equity	0.01	0.5846	0.00520	0.078	0.79	0.00000	0.00092	0.777	0.74	31.55	0.00195	0.4460	0.200	0.800	0.2552
fnb growth	0.03	0.3699	0.01099	-0.155	0.80	0.00000	0.00307	0.954	0.68	23.51	0.00471	0.1826	0.156	0.781	0.3630
future alb	0.00	0.9263	0.00699	-0.017	0.66	0.00000	0.00077	0.917	0.67	22.32	-0.00035	0.9259	0.495	0.563	0.2758
gryphon	0.02	0.5208	0.01014	-0.125	0.95	0.00000	0.00114	1.165	0.95	199.66	0.00084	0.6008	0.311	0.865	0.3412
inv equity r	0.01	0.5909	0.00725	-0.113	0.95	0.00000	-0.00219	1.251	0.91	106.76	-0.00111	0.6271	0.182	0.900	0.2469
inv index r	0.01	0.657	0.00921	-0.088	0.90	0.00000	0.00073	1.147	0.96	287.60	-0.00123	0.3707	0.473	0.773	0.3226
metro gen	0.02	0.5236	0.00469	-0.126	0.92	0.00000	-0.00431	1.163	0.93	136.82	-0.00327	0.1019	0.122	0.931	0.1647
mcubed	0.02	0.4583	0.00462	-0.130	0.89	0.00000	-0.00346	1.017	0.82	49.33	-0.00208	0.4334	0.197	0.846	0.1642
nedbank equity	0.01	0.595	0.00904	-0.096	0.79	0.00000	0.00152	0.986	0.70	25.56	0.00151	0.6702	0.335	0.704	0.3160
oasis cresent	0.00	0.8116	0.01117	-0.023	0.34	0.00170	0.00865	0.346	0.28	4.36	0.00809	0.0107	0.394	0.291	0.4281
OM top co	0.06	0.2313	0.00868	-0.241	0.93	0.00000	-0.00176	1.198	0.86	65.98	-0.00043	0.8762	0.123	0.894	0.2503
rmb equity	0.08	0.1727	0.00800	-0.221	0.89	0.00000	-0.00058	0.948	0.87	74.66	0.00103	0.6254	0.021	0.929	0.2407
rmb perform	0.00	0.8215	0.00365	-0.032	0.83	0.00000	-0.00189	0.789	0.86	66.80	-0.00027	0.8846	0.029	0.921	0.1701
sage	0.01	0.6714	0.00701	-0.071	0.86	0.00000	0.00007	0.941	0.83	54.23	0.00067	0.7850	0.153	0.870	0.2600
sanlam general	0.02	0.4866	0.00680	-0.133	0.93	0.00000	-0.00203	1.128	0.95	204.69	-0.00187	0.2349	0.215	0.910	0.2288
	0.00	0.8578	-0.00295	0.001	0.92	0.00000	0.00094	1.105	0.97	409.02	-0.00058	0.5966	0.486	0.770	
Stanlib index	0.02	0.4843	0.00961	-0.132	0.98	0.00000	0.00005	1.180	0.97	307.72	-0.00013	0.9176	0.298	0.881	0.3219
stanlib equity															0.3078
OM investors	0.08	0.1617	0.01044	-0.311	0.93	0.00000	-0.00166	1.336	0.87	74.03	-0.00040	0.8912	0.161	0.889	0.2795

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

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2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/1999-31/12/1999

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.06	0.2191	-0.00379	0.300	0.84	0.00000	-0.00747	**1.355**	0.80	43.27	-0.00598	0.0563	-0.080	**0.915**	-0.0055
ABSA growth	0.34	0.0018	0.00221	0.397	0.48	0.00008	0.00220	**0.581**	0.35	5.90	0.00087	0.7433	0.170	**0.513**	0.1886
AG equity	0.26	0.0078	0.00564	0.336	0.63	0.00000	0.00503	**0.642**	0.54	12.84	0.00403	0.1078	0.206	**0.640**	0.2869
comm growth	0.08	0.1607	0.00142	0.233	0.86	0.00000	-0.00097	**0.936**	0.79	40.97	-0.00052	0.8114	0.049	**0.870**	0.1341
coron equity	0.11	0.0995	0.00221	0.273	0.93	0.00000	-0.00012	**0.978**	0.86	68.91	0.00078	0.6665	0.059	**0.908**	0.1645
fnb growth	0.05	0.2526	0.00222	0.204	0.87	0.00000	-0.00060	**1.002**	0.88	83.26	0.00017	0.9195	0.012	**0.936**	0.1521
future alb	0.00	0.8698	0.00235	-0.023	0.59	0.00001	-0.00038	**0.648**	0.53	12.55	-0.00101	0.6889	0.103	**0.689**	0.1196
future core eq	0.07	0.1768	0.00203	0.234	0.98	0.00000	-0.00078	**1.041**	0.96	290.30	-0.00038	0.6851	0.067	**0.957**	0.1518
gryphon	0.01	0.6737	0.00578	0.088	0.83	0.00000	0.00175	**1.134**	0.96	243.14	0.00055	0.6631	**0.328**	**0.819**	0.2385
inv equity r	0.03	0.3735	0.00440	0.164	0.95	0.00000	0.00103	**1.079**	0.94	168.35	0.00099	0.4450	0.134	**0.916**	0.2108
inv index r	0.03	0.4122	0.00544	0.156	0.83	0.00000	0.00218	**1.041**	0.99	891.78	0.00031	0.6116	**0.432**	**0.764**	0.2418
metro gen	0.06	0.2146	0.00198	0.233	0.83	0.00000	-0.00081	**1.035**	0.85	60.69	0.00134	0.5150	-0.180	**0.964**	0.1490
mcubed	0.09	0.1294	-0.00083	**0.249**	0.95	0.00000	-0.00328	**0.972**	0.89	88.19	-0.00269	0.0941	**0.048**	**0.926**	0.0726
nedbank fof	0.02	0.4737	0.00298	0.136	0.94	0.00000	-0.00064	**1.102**	0.96	260.74	-0.00060	0.5825	0.148	**0.920**	0.1620
nedbank equity	0.07	0.2085	0.00123	**0.260**	0.81	0.00000	-0.00177	**1.125**	0.75	32.94	-0.00115	0.6974	0.053	**0.847**	0.1297
oasis cresent	0.11	0.0995	0.00451	0.201	0.49	0.00007	0.00359	**0.522**	0.41	7.56	0.00318	0.2311	0.096	**0.600**	0.2257
OM top co	0.03	0.3702	0.00271	0.199	0.91	0.00000	-0.00123	**1.270**	0.91	111.57	0.00006	0.9752	-0.030	**0.964**	0.1617
rmb equity	0.06	0.2174	0.00285	**0.241**	0.92	0.00000	-0.00029	**1.131**	0.92	126.92	0.00005	0.9765	0.061	**0.937**	0.1757
rmb perform	0.06	0.2166	0.00179	0.209	0.95	0.00000	-0.00098	**0.993**	0.92	124.48	0.00026	0.8469	-0.050	**0.973**	0.1406
sage	0.14	0.0584	0.00066	**0.276**	0.74	0.00000	-0.00084	**0.775**	0.71	26.81	-0.00073	0.7254	-0.020	**0.848**	0.1204
sanlam general	0.03	0.3962	0.00243	0.180	0.96	0.00000	-0.00153	**1.249**	0.97	309.85	-0.00085	0.4556	0.102	**0.944**	0.1511
sanlam equity mm	0.11	0.1043	0.00375	**0.247**	0.90	0.00000	0.00165	**0.882**	0.84	59.84	0.00150	0.3621	0.091	**0.885**	0.2080
stanlib index	0.04	0.3538	0.00488	0.168	0.80	0.00000	0.00195	**0.975**	0.98	484.51	-0.00004	0.9560	**0.451**	**0.744**	0.2270
stanlib equity mm	0.02	0.4453	0.00528	0.152	0.90	0.00000	0.00162	**1.135**	0.97	387.26	0.00044	0.6438	**0.309**	**0.840**	0.2353
OM investors	0.03	0.4199	0.00391	0.180	0.95	0.00000	-0.00025	**1.300**	0.95	204.02	0.00011	0.9378	0.078	**0.946**	0.1950

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

31/12/1999-30/06/2000

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.03	0.3711	-0.00800	0.184	0.91	0.00000	-0.00303	**1.111**	0.90	100.93	-0.00423	0.0555	**0.232**	**0.842**	-0.1738
ABSA growth	0.08	0.1719	-0.00072	**0.248**	0.70	0.00000	0.00269	**0.869**	0.66	21.02	0.00099	0.7791	0.018	**0.804**	-0.0059
AG equity	0.13	0.0682	-0.00351	**0.260**	0.70	0.00000	-0.00108	**0.691**	0.62	17.59	-0.00206	0.4900	0.170	**0.708**	-0.0737
comm growth	0.02	0.4977	-0.00491	0.109	0.92	0.00000	-0.00086	**0.871**	0.88	82.44	-0.00197	0.2805	0.163	**0.869**	-0.0919
coron equity	0.00	0.8675	-0.00541	0.029	0.93	0.00000	-0.00071	**0.924**	0.89	91.73	-0.00199	0.2816	0.139	**0.887**	-0.0959
fnb growth	0.00	0.733	-0.00539	0.069	0.94	0.00000	-0.00001	**1.091**	0.91	108.75	-0.00143	0.4709	0.081	**0.921**	-0.1026
future alb	0.14	0.0557	-0.00453	**0.297**	0.69	0.00000	-0.00197	**0.748**	0.70	26.10	-0.00284	0.3248	**0.444**	**0.572**	-0.1030
future core eq	0.02	0.5414	-0.00493	0.113	0.99	0.00000	-0.00002	**1.038**	0.97	399.87	-0.00142	0.1592	0.165	**0.916**	-0.0950
gryphon	0.00	0.9273	-0.00563	-0.021	0.95	0.00000	0.00112	**1.274**	0.98	572.21	-0.00059	0.5688	**0.081**	**0.959**	-0.1022
inv equity r	0.02	0.4575	-0.00521	0.151	0.96	0.00000	-0.00005	**1.119**	0.95	222.46	-0.00144	0.3226	**0.182**	**0.897**	-0.1074
inv index r	0.02	0.5398	-0.00463	0.120	0.94	0.00000	0.00040	**1.068**	0.99	907.75	-0.00027	0.7011	**0.348**	**0.816**	-0.0897
metro gen	0.08	0.1636	-0.00262	**0.258**	0.87	0.00000	0.00137	**0.988**	0.83	54.45	0.00011	0.9663	**0.184**	**0.831**	-0.0555
mcubed	0.02	0.5295	-0.00446	0.118	0.97	0.00000	0.00043	**1.039**	0.98	516.65	-0.00054	0.5422	**0.271**	**0.861**	-0.0846
nedbank fof	0.00	0.8971	-0.00469	0.028	0.96	0.00000	0.00136	**1.184**	0.98	474.76	0.00008	0.9390	**0.156**	**0.923**	-0.0832
nedbank equity	0.04	0.3444	-0.00579	0.193	0.93	0.00000	-0.00085	**1.114**	0.92	128.35	-0.00294	0.1289	0.127	**0.907**	-0.1255
oasis cresent	0.40	0.0005	-0.00064	**0.268**	0.41	0.00050	-0.00023	**0.312**	0.41	7.73	-0.00060	0.7834	0.405	**0.376**	0.0012
OM top co	0.00	0.9992	-0.00665	0.000	0.92	0.00000	-0.00065	**1.149**	0.92	121.55	-0.00254	0.2125	0.048	**0.940**	-0.1260
pru optimiser	0.01	0.5626	-0.00536	0.119	0.94	0.00000	-0.00004	**1.123**	0.92	132.47	-0.00103	0.5780	**0.233**	**0.854**	-0.1079
rmb equity	0.00	0.767	-0.00317	0.054	0.96	0.00000	0.00185	**1.009**	0.95	216.21	0.00008	0.9516	0.049	**0.957**	-0.0457
rmb perform	0.01	0.5941	-0.00268	0.087	0.94	0.00000	0.00154	**0.883**	0.93	157.81	0.00041	0.7604	0.004	**0.965**	-0.0351
sage	0.04	0.3084	-0.00463	0.164	0.90	0.00000	-0.00087	**0.863**	0.85	61.25	-0.00197	0.3444	0.220	**0.820**	-0.0913
sanlam general	0.01	0.6422	-0.00481	0.098	0.98	0.00000	0.00085	**1.169**	0.99	926.72	-0.00069	0.3560	**0.136**	**0.938**	-0.0931
sanlam equity mm	0.00	0.7541	-0.00636	-0.055	0.86	0.00000	-0.00131	**0.920**	0.92	133.99	-0.00300	0.0676	**-0.110**	**0.995**	-0.1098
stanlib index	0.01	0.6711	-0.00460	0.083	0.93	0.00000	0.00051	**1.050**	0.99	820.52	-0.00011	0.8762	**0.352**	**0.813**	-0.0848
stanlib equity mm	0.02	0.4641	-0.00466	0.146	0.93	0.00000	0.00033	**1.084**	0.95	194.51	-0.00028	0.8506	**0.322**	**0.811**	-0.0936
tri linear	0.00	0.7394	-0.00521	0.072	0.89	0.00000	0.00048	**1.152**	0.87	73.97	-0.00156	0.5407	0.000	**0.933**	-0.1004
woolworths	0.01	0.6336	-0.00587	0.088	0.99	0.00000	-0.00091	**1.026**	0.97	384.36	-0.00241	0.0230	**0.121**	**0.937**	-0.1141
OM investors	0.00	0.8503	-0.00608	0.039	0.94	0.00000	-0.00033	**1.135**	0.93	136.48	-0.00194	0.2999	0.098	**0.923**	-0.1164

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/2000-31/12/2000

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.02	0.4705	-0.00094	-0.136	0.91	0.00000	-0.00123	1.144	0.89	90.09	-0.00373	0.0419	0.522	0.531	0.0196
ABSA growth	0.04	0.2932	-0.00056	0.139	0.63	0.00000	-0.00057	0.674	0.59	15.72	-0.00093	0.6936	0.288	0.557	0.0396
AG equity	0.01	0.6663	0.00371	0.047	0.56	0.00001	0.00366	0.516	0.54	13.17	0.00306	0.1577	0.343	0.478	0.1656
comm growth	0.03	0.3811	0.00118	-0.149	0.92	0.00000	0.00089	1.036	0.89	91.49	-0.00014	0.9291	0.421	0.628	0.0806
coris cap	0.06	0.2374	0.00193	-0.210	0.92	0.00000	0.00159	1.098	0.97	397.31	0.00064	0.4530	0.403	0.688	0.1007
coron equity	0.02	0.4799	-0.00009	-0.105	0.87	0.00000	-0.00032	0.881	0.84	56.55	-0.00058	0.7383	0.257	0.736	0.0469
fnb growth	0.02	0.496	-0.00133	-0.114	0.86	0.00000	-0.00158	0.986	0.82	49.54	-0.00370	0.0712	0.449	0.559	0.0109
future alb	0.00	0.9868	0.00060	-0.003	0.69	0.00000	0.00046	0.841	0.63	18.81	-0.00206	0.4628	0.624	0.242	0.0681
future core eq	0.02	0.4431	-0.00071	-0.119	0.99	0.00000	-0.00096	0.979	0.94	177.54	-0.00186	0.0924	0.380	0.692	0.0288
gryphon	0.05	0.2404	0.00085	-0.209	0.94	0.00000	0.00050	1.108	0.98	516.06	-0.00013	0.8667	0.345	0.742	0.0690
inv equity r	0.03	0.3848	-0.00234	-0.152	0.89	0.00000	-0.00263	1.053	0.87	74.28	-0.00342	0.0651	0.277	0.739	-0.0176
inv index r	0.06	0.2352	0.00166	-0.223	0.93	0.00000	0.00129	1.161	0.98	456.28	-0.00051	0.5424	0.556	0.547	0.0915
metro gen	0.00	0.9619	0.00180	-0.008	0.89	0.00000	0.00162	1.033	0.87	75.72	0.00178	0.3156	0.188	0.808	0.1019
mcubed	0.04	0.3402	0.00062	-0.170	0.94	0.00000	0.00030	1.102	0.93	153.95	-0.00167	0.2178	0.558	0.520	0.0632
nedbank fof	0.05	0.2679	0.00204	-0.217	0.94	0.00000	0.00167	1.219	0.96	240.35	0.00069	0.5606	0.385	0.695	0.1022
nedbank equity	0.00	0.8364	-0.01162	-0.046	0.46	0.00010	-0.01182	0.960	0.36	6.05	-0.01276	0.0191	0.221	0.435	-0.2379
oasis cresent	0.01	0.6159	0.00250	0.047	0.62	0.00000	0.00245	0.468	0.63	18.60	0.00130	0.4351	0.577	0.297	0.1289
OM top co	0.06	0.2006	0.00092	-0.243	0.92	0.00000	0.00054	1.173	0.93	151.87	-0.00027	0.8503	0.339	0.721	0.0693
pru optimiser	0.02	0.4998	0.00217	-0.128	0.90	0.00000	0.00188	1.143	0.84	55.68	0.00053	0.8103	0.386	0.627	0.1089
rmb equity	0.04	0.3217	-0.00108	-0.165	0.93	0.00000	-0.00138	1.021	0.88	81.89	-0.00307	0.0662	0.407	0.635	0.0166
rmb perform	0.00	0.8694	-0.00113	-0.023	0.90	0.00000	-0.00129	0.844	0.89	86.94	-0.00129	0.3349	0.148	0.845	0.0201
sage	0.02	0.4448	0.00161	-0.106	0.84	0.00000	0.00139	0.811	0.85	61.65	0.00016	0.9158	0.343	0.671	0.0963
sanlam general	0.05	0.2807	0.00094	-0.214	0.96	0.00000	0.00057	1.245	0.97	370.85	-0.00022	0.8207	0.360	0.724	0.0698
sanlam equity mm	0.00	0.9665	-0.00195	-0.006	0.92	0.00000	-0.00211	0.933	0.86	68.30	-0.00325	0.0539	0.381	0.646	-0.0026
stanlib index	0.05	0.249	0.00196	-0.214	0.92	0.00000	0.00161	1.144	0.98	624.85	-0.00036	0.6163	0.582	0.524	0.1009
stanlib equity mm	0.04	0.3416	0.00284	0.184	0.92	0.00000	0.00250	1.182	0.92	129.84	0.00019	0.9036	0.574	0.497	0.1273
tri linear	0.01	0.6437	-0.00349	0.082	0.68	0.00000	-0.00358	0.931	0.55	13.23	-0.00358	0.3066	0.192	0.606	-0.0431
woolworths	0.02	0.4394	-0.00018	-0.117	0.99	0.00000	-0.00043	0.959	0.94	178.21	-0.00117	0.2714	0.370	0.700	0.0438
OM investors	0.06	0.2088	0.00120	-0.231	0.94	0.00000	0.00084	1.144	0.96	269.18	-0.00028	0.7843	0.329	0.745	0.0783

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

31/12/2000-30/06/2001

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	0.7571	0.00201	0.050	0.95	0.00000	0.00047	1.081	0.90	93.93	0.00127	0.4292	0.356	0.666	0.1043
ABSA growth	0.01	0.6028	-0.00198	0.072	0.75	0.00000	-0.00305	0.816	0.85	64.27	-0.00422	0.0140	0.687	0.306	0.0027
AG equity	0.02	0.4551	0.00559	0.086	0.72	0.00000	0.00479	0.670	0.73	29.62	0.00619	0.0024	0.091	0.789	0.2134
comm growth	0.00	0.9928	0.00215	0.001	0.89	0.00000	0.00071	0.933	0.85	62.02	0.00147	0.3922	0.330	0.664	0.1057
coris cap	0.00	0.9779	0.00100	0.005	0.96	0.00000	-0.00079	1.162	0.97	319.03	-0.00050	0.6052	0.455	0.614	0.0726
coron equity	0.00	0.9818	-0.00001	0.003	0.95	0.00000	-0.00157	1.009	0.89	90.19	-0.00017	0.9098	0.233	0.769	0.0473
fnb growth	0.00	0.7612	0.00161	-0.043	0.90	0.00000	0.00007	0.915	0.86	69.46	0.00206	0.2042	0.082	0.871	0.0877
future alb	0.00	0.8205	0.00961	-0.027	0.53	0.00004	0.00861	0.596	0.49	10.62	0.00974	0.0010	0.098	0.630	0.3296
future core eq	0.00	0.9789	0.00106	-0.004	0.99	0.00000	-0.00055	1.030	0.95	209.76	0.00094	0.3647	0.228	0.804	0.0752
gryphon	0.00	0.983	0.00050	0.004	0.98	0.00000	-0.00136	1.205	0.96	274.13	-0.00023	0.8287	0.326	0.728	0.0586
inv equity r	0.00	0.9744	0.00187	0.005	0.94	0.00000	0.00016	1.112	0.93	151.76	0.00122	0.3612	0.318	0.720	0.0964
inv index r	0.00	0.9232	0.00206	0.019	0.94	0.00000	0.00012	1.280	0.98	482.89	0.00006	0.9464	0.509	0.568	0.1004
metro gen	0.00	0.7773	-0.00059	0.050	0.91	0.00000	-0.00223	1.140	0.94	163.81	-0.00107	0.4256	0.306	0.733	0.0337
mcubed	0.00	0.9051	0.00149	0.019	0.95	0.00000	-0.00010	1.054	0.96	282.30	0.00012	0.8938	0.460	0.607	0.0878
nedbank fof	0.00	0.9857	0.00080	-0.003	0.94	0.00000	-0.00100	1.155	0.92	128.99	0.00013	0.9309	0.312	0.719	0.0665
nedbank equity	0.00	0.9027	0.00109	-0.027	0.68	0.00000	-0.00090	1.232	0.63	18.94	0.00216	0.5923	0.017	0.784	0.0684
ned rain	0.02	0.5527	0.00546	0.086	0.83	0.00000	0.00430	0.903	0.79	41.18	0.00565	0.0099	0.198	0.741	0.2076
oasis cresent	0.02	0.5081	0.00449	0.072	0.68	0.00000	0.00373	0.617	0.61	16.87	0.00459	0.0369	0.190	0.635	0.1798
OM growth	0.00	0.9342	-0.00100	0.013	0.88	0.00000	-0.00252	1.004	0.82	51.73	-0.00046	0.8170	0.101	0.836	0.0222
OM top co	0.00	0.9267	-0.00047	0.015	0.91	0.00000	-0.00210	1.078	0.85	61.97	-0.00009	0.9628	0.137	0.822	0.0351
pru optimiser	0.00	0.9658	0.00216	-0.007	0.95	0.00000	0.00049	1.061	0.92	124.88	0.00146	0.2951	0.324	0.707	0.1041
psg equity	0.00	0.9299	0.00068	0.018	0.91	0.00000	-0.00133	1.330	0.97	361.23	-0.00145	0.1831	0.510	0.562	0.0624
rmb equity	0.00	0.7706	0.00121	-0.042	0.95	0.00000	-0.00038	0.952	0.93	154.84	0.00126	0.2667	0.172	0.840	0.0770
rmb perform	0.01	0.7333	-0.00073	0.045	0.91	0.00000	-0.00193	0.853	0.95	198.38	0.00019	0.8340	0.031	0.952	0.0331
sage	0.04	0.3572	0.00163	0.105	0.78	0.00000	0.00085	0.690	0.75	33.45	0.00281	0.1150	-0.040	0.895	0.1011
sage multi	0.04	0.3228	0.00177	0.122	0.85	0.00000	0.00088	0.784	0.84	56.78	0.00243	0.1206	0.119	0.830	0.1055
sanlam general	0.00	0.965	-0.00040	0.008	0.96	0.00000	-0.00224	1.197	0.94	159.97	-0.00097	0.4816	0.300	0.736	0.0353
sanlam equity mm	0.00	0.7393	0.00048	0.046	0.93	0.00000	-0.00079	0.897	0.91	113.48	0.00079	0.5227	0.164	0.835	0.0644
stanlib index	0.00	0.9692	0.00177	0.007	0.94	0.00000	-0.00012	1.234	0.96	293.42	-0.00010	0.9282	0.494	0.575	0.0923
stanlib equity mm	0.00	0.8513	0.00087	0.031	0.93	0.00000	-0.00074	1.088	0.93	139.88	-0.00040	0.7680	0.436	0.610	0.0715
stanlib properity	0.00	0.9555	0.00116	-0.008	0.96	0.00000	-0.00042	1.004	0.94	174.64	0.00149	0.1894	0.139	0.869	0.0776
stanlib wealthbuilber	0.00	0.798	0.00197	0.038	0.91	0.00000	0.00057	0.964	0.87	72.68	0.00140	0.3952	0.328	0.676	0.1031
tri linear	0.01	0.6403	0.00089	-0.073	0.79	0.00000	-0.00078	0.948	0.78	38.03	0.00155	0.4912	0.028	0.862	0.0653
woolworths	0.00	0.895	0.00127	-0.019	0.99	0.00000	-0.00032	0.993	0.95	207.84	0.00110	0.2774	0.231	0.801	0.0801
OM investors	0.00	0.7489	0.00090	0.050	0.92	0.00000	-0.00054	1.013	0.87	70.67	0.00075	0.6648	0.251	0.740	0.0746

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/2001-31/12/2001

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	0.7742	0.00169	0.046	0.97	0.00000	0.00016	1.093	0.95	223.29	-0.00064	0.7320	0.387	0.636	0.0896
ABSA growth	0.08	0.1447	-0.00065	0.163	0.59	0.00000	-0.00091	0.613	0.69	24.74	-0.00266	0.3861	0.419	0.456	0.0449
AG equity	0.00	0.9453	0.00125	-0.007	0.87	0.00000	0.00022	0.629	0.85	61.94	0.00130	0.5266	0.181	0.769	0.0802
comm growth	0.02	0.4396	-0.00041	0.107	0.96	0.00000	-0.00145	0.955	0.93	146.59	-0.00246	0.2266	0.452	0.561	0.0408
coris cap	0.00	0.8032	-0.00048	0.045	0.96	0.00000	-0.00224	1.241	0.97	361.18	-0.00294	0.0921	0.377	0.655	0.0232
coron equity	0.02	0.5428	0.00072	0.081	0.96	0.00000	-0.00037	0.915	0.96	243.05	-0.00093	0.5383	0.426	0.601	0.0706
fnb growth	0.02	0.4984	0.00243	0.101	0.96	0.00000	0.00126	1.019	0.95	231.88	0.00264	0.1350	0.229	0.782	0.1206
future alb	0.01	0.6556	0.00284	0.047	0.83	0.00000	0.00198	0.674	0.82	49.96	0.00398	0.1128	0.166	0.765	0.1334
future core eq	0.02	0.453	0.00050	0.117	0.95	0.00000	-0.00068	1.064	0.90	101.19	-0.00110	0.6783	0.401	0.596	0.0643
gryphon	0.01	0.6464	-0.00085	0.083	0.98	0.00000	-0.00247	1.252	0.99	759.82	-0.00270	0.0294	0.378	0.661	0.0174
inv equity r	0.02	0.5088	0.00444	0.099	0.96	0.00000	0.00325	1.025	0.95	209.38	0.00179	0.3305	0.535	0.489	0.1825
inv index r	0.00	0.7622	0.00265	0.055	0.96	0.00000	0.00092	1.247	0.99	774.73	-0.00072	0.5402	0.517	0.527	0.1145
metro gen	0.03	0.3621	0.00021	0.176	0.95	0.00000	-0.00112	1.324	0.93	137.78	-0.00142	0.6188	0.370	0.637	0.0550
mcubed	0.01	0.6444	0.00084	0.073	0.98	0.00000	-0.00057	1.089	0.98	481.44	-0.00054	0.6736	0.382	0.654	0.0687
nedbank fof	0.00	0.7495	-0.00008	0.050	0.98	0.00000	-0.00158	1.085	0.96	285.91	-0.00156	0.3465	0.342	0.684	0.0397
nedbank equity	0.00	0.7735	-0.00014	0.046	0.98	0.00000	-0.00170	1.112	0.98	461.68	-0.00140	0.2983	0.347	0.686	0.0368
ned rain	0.01	0.6532	0.00481	0.061	0.82	0.00000	0.00372	0.860	0.81	45.43	0.00337	0.3072	0.376	0.565	0.1919
oasis cresent	0.03	0.3801	0.00643	0.087	0.87	0.00000	0.00579	0.647	0.92	132.09	0.00340	0.0278	0.730	0.268	0.2550
OM growth	0.01	0.6989	-0.00031	0.050	0.90	0.00000	-0.00144	0.857	0.88	78.96	0.00073	0.7679	0.143	0.818	0.0382
OM top co	0.00	0.8766	-0.00002	0.024	0.96	0.00000	-0.00160	1.064	0.92	118.66	-0.00155	0.5319	0.340	0.660	0.0384
pru optimiser	0.00	0.7959	0.00173	0.044	0.97	0.00000	0.00009	1.161	0.96	300.22	-0.00036	0.8320	0.346	0.681	0.0885
psg equity	0.02	0.4836	0.00191	0.129	0.96	0.00000	0.00047	1.269	0.99	1219.21	-0.00273	0.0084	0.574	0.472	0.1011
rmb equity	0.01	0.5498	0.00127	0.095	0.96	0.00000	-0.00003	1.085	0.95	205.03	0.00147	0.4515	0.256	0.755	0.0837
rmb perform	0.05	0.2571	0.00198	0.145	0.93	0.00000	0.00123	0.872	0.89	91.48	0.00040	0.8629	0.465	0.528	0.1165
sage	0.02	0.5285	0.00257	0.081	0.83	0.00000	0.00163	0.816	0.77	36.25	0.00218	0.5176	0.285	0.629	0.1258
sage multi	0.20	0.0191	0.00008	0.278	0.56	0.00001	0.00026	0.653	0.59	15.87	-0.00244	0.5333	0.505	0.300	0.0782
sanlam general	0.01	0.6762	-0.00126	0.065	0.97	0.00000	-0.00268	1.076	0.97	335.10	-0.00267	0.0885	0.350	0.679	0.0091
sanlam equity mm	0.02	0.4896	0.00042	0.073	0.91	0.00000	-0.00038	0.709	0.92	128.92	-0.00003	0.9852	0.287	0.712	0.0652
stanlib index	0.01	0.5624	0.00211	0.105	0.96	0.00000	0.00059	1.249	0.98	702.67	-0.00107	0.3865	0.536	0.507	0.1046
stanlib equity mm	0.01	0.5591	0.00240	0.094	0.96	0.00000	0.00107	1.102	0.98	487.60	-0.00121	0.3563	0.564	0.475	0.1167
stanlib properity	0.01	0.5753	0.00050	0.079	0.98	0.00000	-0.00071	0.979	0.97	343.09	0.00023	0.8641	0.261	0.761	0.0625
stanlib wealthbuilber	0.04	0.3021	0.00141	0.150	0.95	0.00000	0.00048	1.002	0.96	263.44	-0.00143	0.3724	0.535	0.495	0.0971
tri linear	0.01	0.6015	-0.00116	0.077	0.97	0.00000	-0.00243	1.017	0.97	306.71	-0.00194	0.2018	0.332	0.694	0.0149
woolworths	0.01	0.6455	0.00035	0.069	0.99	0.00000	-0.00100	1.046	0.98	566.42	-0.00062	0.5854	0.338	0.697	0.0555
OM investors	0.02	0.5395	0.00164	0.110	0.92	0.00000	0.00022	1.200	0.87	74.61	-0.00066	0.8508	0.414	0.566	0.0915

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

31/12/2001-30/06/2002

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.01	0.6766	-0.00217	-0.063	0.94	0.00000	-0.00086	1.071	0.89	92.20	-0.00121	0.3695	0.448	0.680	-0.0047
ABSA growth	0.00	0.8829	-0.00202	0.019	0.81	0.00000	-0.00101	0.844	0.75	32.53	-0.00094	0.5881	0.336	0.680	-0.0002
AG equity	0.07	0.2024	0.00239	0.160	0.51	0.00004	0.00314	0.671	0.40	7.22	0.00331	0.2251	0.150	0.557	0.1195
comm growth	0.00	0.9039	-0.00203	0.018	0.86	0.00000	-0.00084	0.994	0.77	36.54	-0.00058	0.7580	0.241	0.757	-0.0016
coris cap	0.00	0.8042	-0.00307	-0.044	0.86	0.00000	-0.00158	1.220	0.83	54.59	-0.00139	0.4804	0.349	0.721	-0.0297
coron equity	0.00	0.9937	-0.00183	0.001	0.93	0.00000	-0.00077	0.875	0.84	59.30	-0.00043	0.7392	0.354	0.724	0.0051
fnb growth	0.00	0.9141	-0.00022	-0.018	0.88	0.00000	0.00113	1.120	0.79	40.88	0.00103	0.6151	0.199	0.793	0.0458
future alb	0.01	0.6336	0.00285	0.058	0.62	0.00000	0.00368	0.703	0.45	8.96	0.00326	0.1942	0.409	0.399	0.1344
future core eq	0.00	0.9557	-0.00176	-0.008	0.98	0.00000	-0.00045	1.082	0.88	82.61	-0.00060	0.6814	0.386	0.723	0.0056
gryphon	0.00	0.9359	-0.00298	-0.014	0.89	0.00000	-0.00151	1.208	0.90	95.80	-0.00125	0.4083	0.301	0.792	-0.0272
inv equity r	0.01	0.5717	0.00022	-0.091	0.88	0.00000	0.00158	1.105	0.91	108.21	0.00051	0.7001	0.642	0.503	0.0587
inv index r	0.01	0.6528	-0.00055	-0.081	0.82	0.00000	0.00092	1.196	0.96	234.39	0.00024	0.8112	0.698	0.470	0.0363
metro gen	0.00	0.7971	-0.00338	0.040	0.86	0.00000	-0.00210	1.068	0.87	72.20	-0.00195	0.2056	0.416	0.691	-0.0367
mcubed	0.00	0.9052	-0.00217	-0.017	0.93	0.00000	-0.00095	1.007	0.82	50.86	-0.00128	0.4343	0.414	0.666	-0.0046
nedbank fof	0.00	0.9837	-0.00153	-0.003	0.96	0.00000	-0.00024	1.060	0.84	57.24	-0.00005	0.9735	0.355	0.721	0.0118
nedbank equity	0.00	0.9552	-0.00149	0.008	0.94	0.00000	-0.00022	1.055	0.88	79.31	-0.00055	0.6928	0.469	0.653	0.0126
ned rain	0.00	0.9234	-0.00044	-0.013	0.50	0.00006	0.00039	0.688	0.38	6.66	0.00069	0.7971	0.408	0.330	0.0416
oasis cresent	0.01	0.7165	0.00121	-0.035	0.62	0.00000	0.00190	0.561	0.56	14.19	0.00175	0.3156	0.456	0.449	0.0892
OM growth	0.02	0.5198	-0.00044	0.090	0.75	0.00000	0.00061	0.889	0.61	17.03	0.00141	0.5413	-0.010	0.782	0.0405
OM top co	0.00	0.9266	-0.00148	-0.013	0.93	0.00000	-0.00024	1.017	0.76	35.50	-0.00008	0.9654	0.270	0.735	0.0135
pru optimiser	0.01	0.7047	-0.00129	0.060	0.94	0.00000	0.00004	1.116	0.78	38.24	0.00034	0.8636	0.309	0.717	0.0168
psg equity	0.00	0.8728	-0.00105	0.032	0.85	0.00000	0.00055	1.338	0.80	43.35	0.00068	0.7654	0.606	0.466	0.0205
rmb equity	0.00	0.9786	0.00057	0.004	0.88	0.00000	0.00195	1.140	0.86	67.33	0.00182	0.2910	0.169	0.850	0.0671
rmb perform	0.00	0.9853	-0.00281	0.002	0.87	0.00000	-0.00189	0.760	0.86	69.92	-0.00181	0.1120	0.273	0.791	-0.0196
sage	0.00	0.8155	-0.00132	-0.028	0.76	0.00000	-0.00038	0.770	0.69	24.10	-0.00011	0.9511	0.256	0.697	0.0188
sage multi	0.02	0.5292	-0.00185	0.080	0.70	0.00000	-0.00094	0.779	0.59	15.90	-0.00022	0.9184	0.149	0.700	0.0037
sanlam general	0.00	0.977	-0.00080	-0.005	0.96	0.00000	0.00057	1.137	0.91	111.06	0.00045	0.7265	0.320	0.786	0.0304
sanlam equity mm	0.00	0.9048	-0.00293	0.013	0.91	0.00000	-0.00200	0.768	0.82	51.46	-0.00231	0.0757	0.376	0.696	-0.0227
stanlib index	0.01	0.5754	-0.00141	-0.101	0.85	0.00000	0.00009	1.212	0.94	173.11	-0.00039	0.7363	0.678	0.483	0.0137
stanlib equity mm	0.00	0.9545	-0.00211	-0.009	0.95	0.00000	-0.00070	1.166	0.88	79.20	-0.00089	0.5624	0.405	0.706	-0.0043
stanlib properity	0.00	0.9206	0.00034	0.017	0.95	0.00000	0.00180	1.212	0.80	44.93	0.00144	0.4807	0.428	0.642	0.0605
stanlib wealthbuilber	0.00	0.951	-0.00112	0.010	0.85	0.00000	0.00022	1.108	0.78	38.79	-0.00062	0.7673	0.561	0.502	0.0216
tri linear	0.00	0.9329	-0.00425	-0.013	0.72	0.00000	-0.00309	0.952	0.60	16.56	-0.00305	0.2478	0.296	0.613	-0.0576
woolworths	0.00	0.974	-0.00154	-0.004	0.98	0.00000	-0.00034	0.996	0.86	69.08	-0.00022	0.8735	0.344	0.743	0.0120
OM investors	0.00	0.8708	0.00021	0.025	0.95	0.00000	0.00154	1.110	0.78	39.27	0.00132	0.4999	0.449	0.610	0.0577

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/2002-31/12/2002

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.01	0.5519	-0.00399	0.102	0.97	0.00000	-0.00073	1.110	0.83	54.75	0.00130	0.4971	0.466	0.600	-0.0624
ABSA growth	0.03	0.4317	-0.00105	0.111	0.81	0.00000	0.00114	0.838	0.64	19.50	0.00264	0.2628	0.410	0.525	0.0120
AG equity	0.05	0.2807	0.00308	0.126	0.72	0.00000	0.00449	0.658	0.63	18.35	0.00532	0.0120	0.509	0.415	0.1241
comm growth	0.00	0.8362	-0.00347	0.030	0.84	0.00000	-0.00052	0.874	0.70	25.60	0.00076	0.7258	0.506	0.474	-0.0343
coris cap	0.02	0.5102	-0.00435	0.140	0.91	0.00000	-0.00059	1.328	0.82	49.03	0.00224	0.3698	0.401	0.648	-0.0809
coron equity	0.00	0.8353	-0.00368	0.035	0.92	0.00000	-0.00004	1.074	0.76	34.33	0.00183	0.4253	0.461	0.557	-0.0419
fnb growth	0.08	0.1688	-0.00195	0.194	0.86	0.00000	-0.00028	0.873	0.76	34.44	0.00147	0.4471	0.397	0.615	-0.0280
future alb	0.18	0.0312	0.00214	0.249	0.62	0.00000	0.00249	0.628	0.50	11.17	0.00370	0.1219	0.244	0.564	0.0702
future core eq	0.06	0.2488	-0.00301	0.173	0.97	0.00000	-0.00078	0.979	0.87	74.84	0.00114	0.4436	0.428	0.657	-0.0508
gryphon	0.02	0.5112	-0.00531	0.149	0.90	0.00000	-0.00130	1.415	0.87	75.16	0.00197	0.3782	0.388	0.691	-0.1063
inv equity r	0.05	0.2491	-0.00321	0.176	0.88	0.00000	-0.00112	0.948	0.83	55.48	0.00083	0.6268	0.508	0.562	-0.0565
inv index r	0.01	0.585	-0.00558	0.105	0.83	0.00000	-0.00221	1.148	0.97	410.03	-0.00012	0.8903	0.717	0.426	-0.1023
metro gen	0.01	0.6221	-0.00519	0.100	0.94	0.00000	-0.00125	1.294	0.80	43.00	0.00108	0.6674	0.488	0.557	-0.0931
mcubed	0.01	0.5797	-0.00420	0.094	0.90	0.00000	-0.00107	1.058	0.80	42.93	0.00081	0.6992	0.449	0.593	-0.0658
nedbank fof	0.02	0.5498	-0.00448	0.104	0.98	0.00000	-0.00115	1.135	0.85	61.30	0.00089	0.6305	0.481	0.596	-0.0749
nedbank equity	0.05	0.275	-0.00231	0.168	0.95	0.00000	0.00001	0.998	0.85	61.67	0.00178	0.2869	0.498	0.580	-0.0329
ned rain	0.00	0.8471	0.00139	0.026	0.63	0.00000	0.00376	0.704	0.42	7.86	0.00463	0.1090	0.302	0.450	0.0974
oasis cresent	0.04	0.3339	0.00137	0.101	0.70	0.00000	0.00270	0.580	0.58	15.27	0.00386	0.0465	0.487	0.405	0.0815
OM growth	0.06	0.2199	-0.00034	0.183	0.88	0.00000	0.00162	0.930	0.72	27.84	0.00360	0.1094	0.262	0.694	0.0154
OM top co	0.06	0.2132	-0.00125	0.213	0.91	0.00000	0.00106	1.088	0.81	48.32	0.00351	0.0948	0.349	0.688	-0.0156
pru optimiser	0.01	0.6092	-0.00438	0.087	0.95	0.00000	-0.00110	1.082	0.84	56.42	0.00080	0.6677	0.535	0.537	-0.0689
psg equity	0.01	0.7015	-0.00293	0.070	0.78	0.00000	0.00038	1.058	0.59	15.72	0.00195	0.5424	0.494	0.403	-0.0306
rmb equity	0.04	0.3488	-0.00342	0.144	0.90	0.00000	-0.00102	0.965	0.85	64.37	0.00105	0.5169	0.386	0.682	-0.0555
rmb perform	0.01	0.6746	-0.00456	0.057	0.84	0.00000	-0.00202	0.816	0.73	29.83	-0.00041	0.8329	0.376	0.615	-0.0658
sage	0.07	0.193	-0.00033	0.157	0.81	0.00000	0.00108	0.721	0.64	19.82	0.00236	0.2431	0.417	0.521	0.0226
sage multi	0.00	0.8136	-0.00157	0.036	0.78	0.00000	0.00138	0.887	0.58	14.92	0.00279	0.3076	0.400	0.488	0.0131
sanlam general	0.04	0.3328	-0.00330	0.160	0.93	0.00000	-0.00071	1.053	0.88	82.62	0.00174	0.2673	0.381	0.702	-0.0564
sanlam equity mm	0.01	0.5712	-0.00294	0.059	0.95	0.00000	-0.00095	0.671	0.81	46.96	0.00036	0.7756	0.389	0.654	-0.0247
stanlib index	0.01	0.5804	-0.00599	0.117	0.91	0.00000	-0.00207	1.323	0.86	68.52	0.00023	0.9126	0.552	0.536	-0.1152
stanlib equity mm	0.03	0.4302	-0.00402	0.145	0.95	0.00000	-0.00084	1.179	0.87	75.11	0.00155	0.3906	0.447	0.641	-0.0719
stanlib properity	0.05	0.2964	-0.00181	0.181	0.96	0.00000	0.00088	1.125	0.89	88.55	0.00329	0.0477	0.475	0.627	-0.0238
stanlib wealthbuilber	0.01	0.573	-0.00539	0.099	0.95	0.00000	-0.00207	1.120	0.90	96.66	0.00038	0.8025	0.444	0.659	-0.0957
tri linear	0.02	0.4853	-0.00223	0.139	0.82	0.00000	0.00104	1.194	0.84	59.15	0.00303	0.1635	0.329	0.720	-0.0277
woolworths	0.02	0.501	-0.00295	0.108	0.98	0.00000	0.00003	1.049	0.84	57.24	0.00202	0.2607	0.443	0.624	-0.0374
OM investors	0.05	0.2895	-0.00287	0.180	0.95	0.00000	-0.00027	1.097	0.81	47.38	0.00198	0.3330	0.374	0.666	-0.0498

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

31/12/2002-30/06/2003

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	0.9051	-0.00474	0.019	0.94	0.00000	-0.00010	1.041	0.90	98.89	-0.00045	0.7719	0.329	0.661	-0.0635
ABSA growth	0.03	0.4011	-0.00368	0.123	0.81	0.00000	-0.00014	0.897	0.65	20.00	-0.00049	0.8564	0.179	0.651	-0.0474
AG equity	0.01	0.6605	-0.00364	0.069	0.87	0.00000	0.00056	0.992	0.76	34.49	0.00039	0.8668	0.355	0.557	-0.0415
comm growth	0.01	0.5828	-0.00386	0.072	0.95	0.00000	-0.00026	0.863	0.91	109.87	-0.00066	0.5973	0.116	0.856	-0.0454
coris cap	0.02	0.5411	-0.00702	-0.123	0.92	0.00000	-0.00056	1.312	0.92	128.58	-0.00053	0.7556	0.539	0.469	-0.1076
coron equity	0.01	0.7149	-0.00311	0.052	0.93	0.00000	0.00085	0.924	0.84	59.18	0.00028	0.8731	0.279	0.677	-0.0252
fnb growth	0.01	0.6076	-0.00155	0.073	0.91	0.00000	0.00230	0.919	0.85	59.98	0.00163	0.3642	0.200	0.749	0.0129
future alb	0.00	0.9311	-0.00457	0.012	0.90	0.00000	-0.00051	0.908	0.85	62.36	-0.00080	0.6378	0.561	0.406	-0.0574
future core eq	0.00	0.8624	-0.00499	-0.027	0.98	0.00000	-0.00010	1.054	0.93	142.65	-0.00037	0.7736	0.361	0.646	-0.0647
gryphon	0.02	0.4749	-0.00651	-0.140	0.93	0.00000	-0.00013	1.278	0.92	126.76	-0.00022	0.8972	0.533	0.474	-0.0933
inv equity r	0.06	0.2379	-0.00213	0.148	0.83	0.00000	0.00078	0.780	0.84	59.33	0.00054	0.7303	-0.070	0.976	-0.0093
inv index r	0.00	0.8328	-0.00680	-0.043	0.91	0.00000	-0.00073	1.303	0.97	413.60	-0.00062	0.5330	0.591	0.445	-0.1104
metro gen	0.03	0.4375	-0.00538	-0.129	0.92	0.00000	0.00006	1.083	0.89	90.44	-0.00015	0.9272	0.563	0.427	-0.0647
mcubed	0.01	0.5678	-0.00558	-0.110	0.94	0.00000	0.00061	1.265	0.98	442.06	0.00066	0.4688	0.496	0.541	-0.0739
nedbank fof	0.00	0.9271	-0.00485	0.014	0.97	0.00000	-0.00019	1.044	0.93	137.64	-0.00047	0.7226	0.367	0.639	-0.0657
nedbank equity	0.02	0.4865	-0.00449	0.090	0.95	0.00000	-0.00100	0.854	0.89	89.14	-0.00134	0.3246	0.161	0.808	-0.0626
ned rain	0.14	0.0583	-0.00299	0.219	0.77	0.00000	-0.00069	0.711	0.74	30.52	-0.00139	0.4859	-0.030	0.884	-0.0382
oasis cresent	0.01	0.5933	-0.00493	0.073	0.80	0.00000	-0.00151	0.822	0.77	37.46	-0.00166	0.4128	0.446	0.478	-0.0720
OM growth	0.01	0.6448	-0.00320	0.071	0.94	0.00000	0.00105	1.004	0.89	87.10	0.00038	0.8160	0.064	0.890	-0.0303
OM top co	0.01	0.7031	-0.00422	0.056	0.94	0.00000	-0.00006	0.969	0.89	88.78	-0.00060	0.7001	0.143	0.823	-0.0537
pru optimiser	0.00	0.8148	-0.00490	0.035	0.96	0.00000	-0.00058	0.986	0.89	86.84	-0.00112	0.4811	0.219	0.755	-0.0683
psg equity	0.03	0.4163	-0.00346	0.122	0.82	0.00000	0.00020	0.922	0.69	24.09	-0.00019	0.9413	0.281	0.584	-0.0420
rmb equity	0.01	0.7015	-0.00150	0.054	0.95	0.00000	0.00247	0.927	0.86	66.54	0.00202	0.2313	0.237	0.723	0.0165
rmb perform	0.05	0.2642	-0.00274	0.168	0.79	0.00000	0.00069	0.915	0.66	20.90	0.00054	0.8433	0.183	0.653	-0.0290
sage	0.01	0.6678	-0.00369	0.056	0.86	0.00000	-0.00020	0.822	0.82	48.94	-0.00069	0.6965	0.034	0.876	-0.0393
sage multi	0.05	0.2554	-0.00344	0.152	0.79	0.00000	-0.00040	0.812	0.63	18.90	-0.00074	0.7694	0.196	0.627	-0.0434
sanlam general	0.00	0.9577	-0.00465	-0.009	0.97	0.00000	0.00031	1.087	0.94	173.81	0.00007	0.9571	0.296	0.714	-0.0588
sanlam equity mm	0.00	0.8821	-0.00404	0.017	0.93	0.00000	-0.00082	0.728	0.86	65.17	-0.00105	0.4278	0.273	0.689	-0.0428
stanlib index	0.01	0.6035	-0.00744	-0.115	0.93	0.00000	-0.00042	1.445	0.94	166.77	-0.00042	0.8020	0.560	0.456	-0.1202
stanlib equity mm	0.00	0.8321	-0.00558	-0.039	0.95	0.00000	0.00005	1.208	0.93	138.78	-0.00040	0.7974	0.435	0.575	-0.0801
stanlib properity	0.00	0.7758	-0.00561	-0.046	0.93	0.00000	-0.00061	1.060	0.88	83.58	-0.00099	0.5672	0.252	0.724	-0.0782
stanlib wealthbuilber	0.00	0.963	-0.00434	0.007	0.96	0.00000	0.00023	1.016	0.91	108.47	-0.00012	0.9341	0.249	0.739	-0.0521
tri linear	0.00	0.9042	-0.00520	0.021	0.88	0.00000	-0.00038	1.082	0.92	120.91	-0.00022	0.8828	0.168	0.816	-0.0758
woolworths	0.00	0.8879	-0.00512	0.020	0.98	0.00000	-0.00086	0.958	0.89	91.63	-0.00130	0.3762	0.300	0.685	-0.0716
OM investors	0.00	0.9432	-0.00451	-0.011	0.96	0.00000	0.00011	1.009	0.88	82.79	-0.00042	0.7981	0.250	0.725	-0.0542

NB: Beta's are Highlighted if significant at the p = 0.01 level

HALF YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

30/06/2003-31/12/2003

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	p(correlation)	alpha	beta	R 2	p(correlation)	Alpha	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.07	0.1924	0.00698	-0.169	0.94	0.00000	-0.00010	0.976	0.90	101.82	0.00118	0.3177	0.399	0.641	0.2288
ABSA growth	0.00	0.7727	0.00739	-0.025	0.68	0.00000	0.00376	0.539	0.58	14.90	0.00462	0.0074	0.138	0.661	0.2634
AG equity	0.15	0.0477	0.00883	-0.238	0.73	0.00000	0.00249	0.818	0.72	27.73	0.00410	0.0386	0.468	0.463	0.2798
comm growth	0.04	0.315	0.00674	-0.148	0.84	0.00000	-0.00069	1.041	0.80	44.60	0.00085	0.6522	0.392	0.590	0.2227
coris cap	0.05	0.2732	0.00735	-0.223	0.94	0.00000	-0.00354	1.523	0.93	142.63	-0.00152	0.3365	0.430	0.627	0.2276
coron equity	0.10	0.1256	0.00707	-0.206	0.88	0.00000	-0.00025	0.989	0.88	79.38	0.00085	0.5346	0.227	0.774	0.2265
fnb growth	0.21	0.0179	0.00913	-0.261	0.77	0.00000	0.00297	0.779	0.74	31.23	0.00441	0.0140	0.248	0.678	0.2874
future alb	0.00	0.9444	0.00694	0.009	0.65	0.00000	0.00164	0.815	0.75	32.29	0.00347	0.0781	0.800	0.093	0.2507
future core eq	0.06	0.2191	0.00716	-0.165	0.97	0.00000	-0.00024	1.026	0.94	181.70	0.00133	0.1615	0.455	0.612	0.2348
gryphon	0.03	0.3903	0.00722	-0.172	0.93	0.00000	-0.00320	1.482	0.92	122.49	-0.00122	0.4623	0.489	0.565	0.2303
inv equity r	0.14	0.0555	0.00937	-0.252	0.79	0.00000	0.00226	0.928	0.80	43.12	0.00340	0.0616	0.167	0.775	0.2952
inv index r	0.03	0.4096	0.00731	-0.148	0.91	0.00000	-0.00189	1.311	0.98	465.47	0.00006	0.9344	0.628	0.457	0.2383
metro gen	0.05	0.2704	0.00678	-0.165	0.95	0.00000	-0.00126	1.124	0.91	117.22	0.00022	0.8626	0.420	0.629	0.2217
mcubed	0.07	0.1836	0.00762	-0.208	0.95	0.00000	-0.00101	1.186	0.93	143.91	0.00066	0.5876	0.484	0.576	0.2420
nedbank fof	0.05	0.2571	0.00669	-0.163	0.97	0.00000	-0.00115	1.094	0.95	201.77	0.00028	0.7669	0.385	0.679	0.2193
nedbank equity	0.07	0.1903	0.00614	-0.182	0.91	0.00000	-0.00132	1.025	0.85	63.96	0.00026	0.8670	0.485	0.532	0.2003
ned rain	0.04	0.304	0.00869	-0.098	0.88	0.00000	0.00377	0.690	0.79	41.08	0.00481	0.0008	0.397	0.577	0.2957
oasis cresent	0.01	0.7017	0.00696	-0.045	0.82	0.00000	0.00143	0.815	0.77	36.11	0.00276	0.0992	0.530	0.432	0.2451
OM growth	0.08	0.1649	0.00749	-0.210	0.95	0.00000	-0.00087	1.144	0.94	168.56	0.00029	0.7891	0.330	0.721	0.2382
OM top co	0.06	0.2282	0.00872	-0.169	0.87	0.00000	0.00142	1.009	0.84	57.72	0.00262	0.1147	0.204	0.771	0.2844
pru optimiser	0.10	0.1255	0.00847	-0.181	0.94	0.00000	0.00186	0.896	0.88	83.11	0.00323	0.0110	0.293	0.722	0.2758
psg equity	0.04	0.3421	0.00576	-0.096	0.72	0.00000	0.00105	0.660	0.67	22.67	0.00251	0.1312	0.185	0.688	0.2015
rmb equity	0.20	0.0225	0.00890	-0.255	0.78	0.00000	0.00265	0.796	0.76	35.09	0.00409	0.0183	0.280	0.664	0.2805
rmb perform	0.00	0.8263	0.00535	0.024	0.71	0.00000	0.00082	0.705	0.64	19.34	0.00156	0.4084	0.263	0.602	0.2035
sage	0.00	0.7802	0.00465	-0.033	0.85	0.00000	-0.00099	0.840	0.75	33.20	-0.00013	0.9378	0.309	0.633	0.1744
sage multi	0.02	0.4719	0.00558	0.069	0.62	0.00000	0.00210	0.575	0.51	11.46	0.00291	0.1351	0.263	0.515	0.2172
sanlam general	0.11	0.0978	0.00781	-0.267	0.95	0.00000	-0.00135	1.232	0.95	206.87	-0.00001	0.9958	0.324	0.732	0.2401
sanlam equity mm	0.07	0.1768	0.00613	-0.145	0.94	0.00000	0.00023	0.810	0.92	119.06	0.00149	0.1105	0.511	0.542	0.2063
stanlib index	0.02	0.5333	0.00664	-0.120	0.93	0.00000	-0.00316	1.421	0.95	203.10	-0.00120	0.3392	0.606	0.464	0.2196
stanlib equity mm	0.11	0.0955	0.00839	-0.261	0.97	0.00000	-0.00060	1.209	0.95	197.30	0.00089	0.4042	0.321	0.733	0.2599
stanlib properity	0.03	0.4052	0.00703	-0.137	0.95	0.00000	-0.00162	1.234	0.92	127.34	-0.00007	0.9606	0.409	0.641	0.2320
stanlib wealthbuilber	0.02	0.5453	0.00584	-0.107	0.94	0.00000	-0.00322	1.314	0.91	105.62	-0.00174	0.2670	0.389	0.651	0.1975
tri linear	0.12	0.0769	0.00727	-0.234	0.86	0.00000	0.00000	0.964	0.82	49.39	0.00146	0.3815	0.372	0.617	0.2294
woolworths	0.01	0.5745	0.00616	-0.071	0.91	0.00000	-0.00015	0.918	0.84	56.20	0.00134	0.3600	0.436	0.569	0.2157
OM investors	0.05	0.2582	0.00615	-0.167	0.96	0.00000	-0.00184	1.115	0.92	127.59	-0.00042	0.7258	0.350	0.694	0.2018

NB: Beta's are Highlighted if significant at the p = 0.01 level

YEARLY

Performance Output according to:

1. **Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.**
2. **Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework**
3. **Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework**
4. **Absolute (raw return) performance**

Period

01/01/1998-31/12/1998

	1 Factor				Peer Group				2 factor						Absolute Returns
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Beta Resources	Beta Fin and Ind	
ABSA	0.11	0.00058	0.0161	**0.484**	0.91	0.00384	0.0000	**1.349**	0.85	131.55	0.00223	0.5621	-0.090	**0.946**	-0.027160146
comm growth	0.12	-0.00226	0.0132	**0.392**	0.94	0.00032	0.0000	**1.078**	0.90	214.92	-0.00082	0.7373	-0.070	**0.970**	-0.085
coron equity	0.10	-0.00044	0.0251	0.215	0.87	0.00112	0.0000	**0.624**	0.82	105.83	0.00072	0.7185	0.084	**0.872**	0.101938675
future alb	0.17	-0.00397	0.0026	**0.358**	0.68	-0.00283	0.0000	**0.698**	0.57	31.86	-0.00325	0.3995	0.148	**0.694**	-0.141136878
gryphon	0.03	-0.00542	0.2115	0.193	0.92	-0.00211	0.0000	**1.014**	0.98	1024.36	-0.00243	0.0332	**0.126**	**0.941**	-0.154703759
inv equity r	0.10	-0.00330	0.0217	**0.345**	0.97	-0.00066	0.0000	**1.034**	0.93	309.59	-0.00151	0.4415	0.009	**0.960**	-0.128838197
inv index r	0.02	-0.00441	0.2951	0.142	0.90	-0.00141	0.0000	**0.881**	0.98	1450.20	-0.00128	0.1250	**0.306**	**0.849**	-0.096915017
metro gen	0.06	-0.00025	0.0848	0.293	0.97	0.00317	0.0000	**1.158**	0.94	347.98	0.00248	0.2350	**0.087**	**0.935**	0.022253637
mcubed	0.10	-0.00271	0.0253	**0.379**	0.94	0.00023	0.0000	**1.148**	0.91	256.92	-0.00110	0.6479	**-0.110**	**0.986**	-0.137368472
nedbank equity	0.11	0.00100	0.0173	**0.344**	0.86	0.00323	0.0000	**0.937**	0.78	86.83	0.00272	0.4062	0.139	**0.830**	0.082730197
OM top co	0.08	-0.00449	0.0469	**0.331**	0.97	-0.00134	0.0000	**1.141**	0.94	396.90	-0.00220	0.2543	0.022	**0.964**	-0.169228254
rmb equity	0.07	-0.00525	0.0530	**0.308**	0.97	-0.00221	0.0000	**1.088**	0.96	532.99	-0.00314	0.0530	-0.020	**0.985**	-0.182466667
sage	0.03	-0.00511	0.2299	0.137	0.92	-0.00263	0.0000	**0.750**	0.96	579.07	-0.00294	0.0090	**0.105**	**0.941**	-0.125737851
sanlam general	0.07	-0.00265	0.0546	0.282	0.98	0.00018	0.0000	**1.007**	0.97	674.86	-0.00056	0.6692	0.019	**0.976**	-0.066847863
stanlib index	0.02	-0.00505	0.2829	0.145	0.90	-0.00207	0.0000	**0.878**	0.97	718.67	-0.00207	0.0770	**0.251**	**0.873**	-0.112368857
OM investors	0.06	-0.00264	0.0870	0.295	0.97	0.00083	0.0000	**1.173**	0.93	339.93	-0.00011	0.9602	0.014	**0.962**	-0.10659009

NB: Beta's are Highlighted if significant at the p = 0.01 level

YEARLY

Performance Output according to:

1. **Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.**
2. **Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework**
3. **Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework**
4. **Absolute (raw return) performance**

Period

01/01/1999-31/12/1999

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	-0.00021	0.7212	0.056	0.87	-0.00659	0.0000	**1.293**	0.83	120.83	-0.00475	0.0195	0.019	**0.908**	0.132021795
ABSA growth	0.08	0.00210	0.0388	0.172	0.56	0.00057	0.0000	**0.556**	0.50	24.75	0.00158	0.3890	-0.02	**0.712**	0.365146322
AG equity	0.01	0.01193	0.4851	0.092	0.61	0.00789	0.0000	**0.905**	0.60	37.09	0.00628	0.0168	**0.463**	**0.534**	1.166883613
comm growth	0.00	0.00189	0.8527	0.020	0.81	-0.00241	0.0000	**0.841**	0.76	75.72	-0.00119	0.4601	0.021	**0.865**	0.260130931
coron equity	0.04	0.00363	0.1353	0.157	0.85	0.00037	0.0000	**0.859**	0.79	93.74	0.00082	0.5810	0.155	**0.845**	0.461623303
fnb growth	0.00	0.00642	0.9668	-0.005	0.83	0.00120	0.0000	**0.977**	0.76	77.22	0.00203	0.2719	0.111	**0.842**	0.570247214
future alb	0.00	0.00462	0.9136	-0.013	0.63	0.00022	0.0000	**0.811**	0.58	33.97	-0.00056	0.8072	**0.351**	**0.608**	0.428396498
gryphon	0.00	0.00786	0.7864	-0.037	0.90	0.00145	0.0000	**1.152**	0.95	430.23	0.00062	0.5284	**0.328**	**0.85**	0.66097224
inv equity r	0.00	0.00572	0.9828	0.003	0.94	-0.00054	0.0000	**1.179**	0.91	242.86	0.00003	0.9823	**0.161**	**0.907**	0.509729424
inv index r	0.00	0.00722	0.9360	0.011	0.87	0.00147	0.0000	**1.103**	0.97	742.56	-0.00032	0.6596	**0.467**	**0.775**	0.642389086
metro gen	0.00	0.00322	0.9125	0.015	0.88	-0.00252	0.0000	**1.108**	0.87	166.83	-0.00100	0.4967	0.017	**0.93**	0.338180845
mcubed	0.00	0.00174	0.8492	0.023	0.91	-0.00336	0.0000	**0.999**	0.84	127.44	-0.00271	0.0678	0.146	**0.874**	0.248657117
nedbank equity	0.00	0.00496	0.7008	0.051	0.79	-0.00016	0.0000	**1.046**	0.71	61.19	-0.00004	0.9871	**0.223**	**0.77**	0.486770031
oasis cresent	0.02	0.00771	0.3398	0.072	0.40	0.00607	0.0000	0.423	0.31	11.05	0.00596	0.0032	0.234	**0.46**	0.750432975
OM top co	0.00	0.00552	0.6601	-0.064	0.92	-0.00150	0.0000	**1.226**	0.88	177.03	-0.00009	0.9551	0.059	**0.923**	0.452494588
rmb equity	0.00	0.00526	0.7632	-0.037	0.90	-0.00045	0.0000	**1.021**	0.89	207.21	0.00089	0.4651	0.022	**0.941**	0.458642529
rmb perform	0.01	0.00264	0.5528	0.063	0.88	-0.00145	0.0000	**0.870**	0.89	190.99	-0.00017	0.8764	0	**0.942**	0.334622824
sage	0.01	0.00368	0.5207	0.071	0.81	-0.00038	0.0000	**0.876**	0.76	78.51	0.00056	0.7344	0.071	**0.856**	0.411711944
sanlam general	0.00	0.00449	0.9606	-0.007	0.94	-0.00179	0.0000	**1.176**	0.95	518.27	-0.00147	0.1047	**0.179**	**0.924**	0.414543143
stanlib index	0.00	0.00712	0.9363	-0.010	0.87	0.00147	0.0000	**1.052**	0.97	853.13	-0.00033	0.6164	**0.481**	**0.766**	0.621980301
stanlib equity mm	0.00	0.00736	0.7449	-0.044	0.95	0.00085	0.0000	**1.160**	0.97	686.02	0.00031	0.6893	**0.302**	**0.874**	0.615343633
OM investors	0.01	0.00699	0.4607	-0.114	0.94	-0.00094	0.0000	**1.320**	0.90	220.53	0.00000	0.9995	**0.125**	**0.915**	0.52907354

NB: Beta's are Highlighted if significant at the p = 0.01 level

YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/2000-31/12/2000

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	-0.00475	0.6501	0.063	0.91	-0.00207	0.0000	**1.128**	0.89	202.76	-0.00339	0.0111	**0.336**	**0.746**	-0.157643651
ABSA growth	0.06	-0.00077	0.0684	0.203	0.67	0.00082	0.0000	**0.790**	0.61	38.52	0.00016	0.9354	**0.066**	**0.75**	0.033507146
AG equity	0.08	-0.00006	0.0446	0.184	0.65	0.00119	0.0000	**0.639**	0.59	34.55	0.00058	0.7371	**0.229**	**0.635**	0.079762758
comm growth	0.00	-0.00209	0.9145	0.012	0.91	0.00021	0.0000	**0.936**	0.87	170.43	-0.00052	0.6537	**0.299**	**0.763**	-0.018762612
coron equity	0.00	-0.00283	0.8734	-0.018	0.91	-0.00055	0.0000	**0.909**	0.87	169.22	-0.00107	0.3503	**0.193**	**0.833**	-0.05356572
fnb growth	0.00	-0.00352	0.9971	0.000	0.91	-0.00092	0.0000	**1.048**	0.85	144.36	-0.00157	0.2681	**0.189**	**0.825**	-0.092854371
future alb	0.05	-0.00224	0.0994	0.181	0.69	-0.00062	0.0000	**0.788**	0.66	48.42	-0.00180	0.3329	**0.502**	**0.456**	-0.041877411
future core eq	0.00	-0.00303	0.8426	0.024	0.99	-0.00057	0.0000	**1.014**	0.96	578.53	-0.00125	0.0753	**0.236**	**0.851**	-0.068912538
gryphon	0.01	-0.00253	0.5449	-0.089	0.94	0.00064	0.0000	**1.211**	0.97	875.84	0.00026	0.7134	**0.166**	**0.901**	-0.040232927
inv equity r	0.00	-0.00409	0.8236	0.029	0.93	-0.00145	0.0000	**1.088**	0.92	284.55	-0.00207	0.0576	**0.211**	**0.847**	-0.123057303
inv index r	0.00	-0.00180	0.9293	-0.012	0.93	0.00095	0.0000	**1.104**	0.98	1221.85	0.00004	0.9340	**0.432**	**0.719**	-0.006475244
metro gen	0.03	-0.00066	0.2157	0.155	0.88	0.00154	0.0000	**1.006**	0.84	132.45	0.00070	0.6206	**0.209**	**0.806**	0.040736049
mcubed	0.00	-0.00219	0.9578	0.007	0.95	0.00043	0.0000	**1.062**	0.95	495.32	-0.00045	0.5719	**0.377**	**0.748**	-0.026707295
nedbank fof	0.01	-0.00906	0.5700	0.084	0.96	0.00357	0.0000	**1.198**	0.96	660.46	0.00294	0.0004	**0.255**	**0.841**	0.010545698
nedbank equity	0.01	-0.00906	0.5700	0.084	0.67	-0.00668	0.0000	**1.030**	0.62	40.36	-0.00745	0.0056	0.106	**0.736**	-0.333520669
oasis cresent	0.17	0.00071	0.0025	0.182	0.49	0.00131	0.0000	0.376	0.51	25.29	0.00056	0.6591	**0.504**	**0.327**	0.130206787
OM top co	0.01	-0.00305	0.5332	-0.088	0.92	-0.00001	0.0000	**1.161**	0.91	249.70	-0.00085	0.4812	**0.173**	**0.865**	-0.065496858
pru optimiser	0.00	-0.00179	0.8322	0.029	0.93	0.00097	0.0000	**1.135**	0.89	197.95	-0.00009	0.9434	**0.297**	**0.773**	-0.010789886
rmb equity	0.00	-0.00235	0.7841	-0.033	0.94	0.00020	0.0000	**1.005**	0.90	231.27	-0.00048	0.6585	**0.171**	**0.863**	-0.029797622
rmb perform	0.00	-0.00201	0.6802	0.043	0.92	0.00004	0.0000	**0.862**	0.91	248.94	-0.00045	0.6176	0.061	**0.926**	-0.015652174
sage	0.01	-0.00175	0.5602	0.062	0.88	0.00024	0.0000	**0.849**	0.85	134.15	-0.00060	0.6161	**0.273**	**0.765**	-0.003785425
sanlam general	0.00	-0.00222	0.8752	-0.022	0.97	0.00078	0.0000	**1.196**	0.97	911.21	0.00014	0.8364	**0.24**	**0.856**	-0.029780645
sanlam equity mm	0.00	-0.00404	0.8121	-0.027	0.88	-0.00171	0.0000	**0.923**	0.87	159.71	-0.00227	0.0624	0.069	**0.898**	-0.112123582
stanlib index	0.00	-0.00158	0.8223	-0.030	0.92	0.00117	0.0000	**1.087**	0.98	1191.16	0.00031	0.5648	**0.443**	**0.71**	0.007542828
stanlib equity mm	0.00	-0.00120	0.8761	0.021	0.93	0.00155	0.0000	**1.125**	0.93	323.51	0.00051	0.6256	**0.422**	**0.699**	0.02176781
tri linear	0.01	-0.00431	0.5650	0.079	0.81	-0.00184	0.0000	**1.060**	0.75	74.44	-0.00227	0.2541	0.041	**0.848**	-0.139183202
woolworths	0.00	-0.00319	0.9197	0.012	0.99	-0.00073	0.0000	**1.002**	0.96	529.79	-0.00130	0.0729	**0.21**	**0.866**	-0.075318066
OM investors	0.00	-0.00266	0.6603	-0.061	0.94	0.00028	0.0000	**1.142**	0.93	332.25	-0.00055	0.5958	**0.199**	**0.86**	-0.047190317

NB: Beta's are Highlighted if significant at the p = 0.01 level

YEARLY

Performance Output according to:

1. **Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.**
2. **Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework**
3. **Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework**
4. **Absolute (raw return) performance**

Period

01/01/2001-31/12/2001

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	0.00185	0.6735	0.047	0.97	0.00031	0.0000	**1.090**	0.93	326.86	0.00095	0.4188	**0.353**	**0.668**	0.203226133
ABSA growth	0.05	-0.00132	0.0994	0.137	0.64	-0.00187	0.0000	**0.670**	0.62	40.60	-0.00251	0.2262	**0.447**	**0.393**	0.047743623
AG equity	0.00	0.00337	0.7942	0.019	0.80	0.00243	0.0000	**0.640**	0.79	94.16	0.00395	0.0037	0.114	**0.801**	0.310804095
comm growth	0.01	0.00080	0.4382	0.076	0.94	-0.00042	0.0000	**0.949**	0.90	214.06	-0.00016	0.8973	**0.387**	**0.618**	0.150739477
coris cap	0.00	0.00023	0.7909	0.033	0.96	-0.00156	0.0000	**1.218**	0.96	555.83	-0.00112	0.2786	**0.384**	**0.654**	0.097477421
coron equity	0.01	0.00034	0.5410	0.059	0.96	-0.00092	0.0000	**0.941**	0.93	321.06	-0.00030	0.7681	**0.344**	**0.675**	0.121278563
fnb growth	0.01	0.00199	0.5609	0.060	0.94	0.00065	0.0000	**0.989**	0.92	277.38	0.00254	0.0334	**0.182**	**0.813**	0.218895136
future alb	0.00	0.00608	0.7609	0.024	0.71	0.00514	0.0000	**0.652**	0.69	54.17	0.00653	0.0004	0.132	**0.724**	0.507001297
future core eq	0.01	0.00073	0.4479	0.082	0.96	-0.00062	0.0000	**1.055**	0.91	247.33	0.00018	0.8903	**0.328**	**0.68**	0.144324513
gryphon	0.00	-0.00023	0.6341	0.060	0.98	-0.00195	0.0000	**1.239**	0.98	987.91	-0.00110	0.1634	**0.346**	**0.698**	0.077062485
inv equity r	0.01	0.00317	0.5004	0.073	0.95	0.00179	0.0000	**1.049**	0.94	354.03	0.00156	0.1583	**0.454**	**0.574**	0.296472961
inv index r	0.00	0.00236	0.7282	0.045	0.96	0.00055	0.0000	**1.256**	0.98	1415.42	-0.00020	0.7678	**0.509**	**0.547**	0.226398947
metro gen	0.02	-0.00022	0.2865	0.140	0.94	-0.00171	0.0000	**1.272**	0.92	270.22	-0.00078	0.6092	**0.331**	**0.68**	0.09061499
mcubed	0.01	0.00114	0.6038	0.057	0.97	-0.00035	0.0000	**1.079**	0.97	865.15	-0.00011	0.8761	**0.406**	**0.641**	0.162430939
nedbank fof	0.00	0.00043	0.8415	0.025	0.97	0.00055	0.0000	**1.101**	0.94	421.49	0.00182	0.0853	**0.31**	**0.715**	0.108828889
nedbank equity	0.00	0.00043	0.8415	0.025	0.86	-0.00128	0.0000	**1.146**	0.83	115.90	0.00072	0.7287	0.192	**0.754**	0.107748524
ned rain	0.01	0.00513	0.4793	0.068	0.82	0.00401	0.0000	**0.872**	0.80	95.65	0.00475	0.0084	**0.296**	**0.646**	0.439307445
oasis cresent	0.03	0.00549	0.2404	0.083	0.81	0.00479	0.0000	**0.639**	0.77	83.92	0.00418	0.0031	**0.503**	**0.434**	0.480609297
OM growth	0.00	-0.00065	0.6788	0.040	0.89	-0.00192	0.0000	**0.898**	0.85	144.45	0.00012	0.9340	0.129	**0.822**	0.061227359
OM top co	0.00	-0.00024	0.8436	0.022	0.94	-0.00184	0.0000	**1.068**	0.89	197.47	-0.00042	0.7731	**0.252**	**0.736**	0.074872222
pru optimiser	0.00	0.00192	0.8025	0.029	0.96	0.00025	0.0000	**1.133**	0.94	407.46	0.00128	0.2493	**0.314**	**0.71**	0.201831807
psg equity	0.01	0.00129	0.4608	0.098	0.95	-0.00038	0.0000	**1.286**	0.98	1123.80	-0.00141	0.0724	**0.533**	**0.52**	0.169763596
rmb equity	0.01	0.00120	0.6071	0.055	0.96	-0.00024	0.0000	**1.048**	0.94	383.42	0.00135	0.2009	**0.233**	**0.779**	0.167143653
rmb perform	0.03	0.00065	0.1930	0.117	0.92	-0.00029	0.0000	**0.867**	0.88	181.63	0.00051	0.6833	**0.302**	**0.688**	0.153415783
sage	0.02	0.00212	0.3088	0.088	0.82	0.00122	0.0000	**0.781**	0.75	72.40	0.00266	0.1315	0.169	**0.728**	0.239660432
sage multi	0.14	0.00085	0.0055	0.232	0.63	0.00060	0.0000	**0.690**	0.55	29.96	0.00117	0.6141	0.251	**0.532**	0.191957234
sanlam general	0.00	-0.00086	0.6688	0.048	0.97	-0.00243	0.0000	**1.110**	0.95	478.79	-0.00145	0.1505	**0.318**	**0.711**	0.044784424
sanlam equity mm	0.01	0.00044	0.4152	0.065	0.91	-0.00052	0.0000	**0.762**	0.90	233.13	0.00072	0.4696	**0.217**	**0.776**	0.13372682
stanlib index	0.01	0.00192	0.5450	0.077	0.96	0.00024	0.0000	**1.245**	0.98	1088.36	-0.00062	0.4175	**0.52**	**0.533**	0.20657277
stanlib equity mm	0.01	0.00164	0.4989	0.076	0.95	0.00020	0.0000	**1.098**	0.96	587.70	-0.00047	0.6014	**0.507**	**0.536**	0.196578438
stanlib properity	0.01	0.00079	0.5915	0.054	0.97	-0.00056	0.0000	**0.986**	0.96	549.86	0.00118	0.1584	**0.204**	**0.814**	0.144956315
stanlib wealthbuilber	0.03	0.00164	0.2477	0.118	0.94	0.00051	0.0000	**0.991**	0.92	264.98	0.00046	0.6963	**0.43**	**0.587**	0.210213384
tri linear	0.00	-0.00021	0.7509	0.033	0.92	-0.00166	0.0000	**0.998**	0.90	215.54	0.00001	0.9937	**0.209**	**0.778**	0.081235314
woolworths	0.00	0.00077	0.6763	0.043	0.99	-0.00069	0.0000	**1.031**	0.97	768.43	0.00045	0.5405	**0.292**	**0.743**	0.139974317
OM investors	0.01	0.00126	0.4403	0.093	0.92	-0.00020	0.0000	**1.148**	0.86	151.32	0.00040	0.8242	**0.349**	**0.633**	0.172934319

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YEARLY

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4. Absolute (raw return) performance

Period

01/01/2002-31/12/2002

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	-0.00337	0.8343	0.023	0.96	-0.00082	0.0000	1.091	0.85	140.10	-0.00044	0.6898	0.471	0.627	-0.066761925
ABSA growth	0.01	-0.00172	0.5053	0.061	0.80	0.00006	0.0000	0.837	0.67	48.64	0.00030	0.8276	0.387	0.579	0.011753166
AG equity	0.06	0.00279	0.0878	0.142	0.60	0.00382	0.0000	0.662	0.47	21.66	0.00394	0.0154	0.335	0.478	0.25840433
comm growth	0.00	-0.00276	0.7783	0.028	0.85	-0.00062	0.0000	0.929	0.71	59.67	-0.00032	0.8163	0.387	0.609	-0.035818852
coris cap	0.00	-0.00405	0.7116	0.049	0.89	-0.00115	0.0000	1.276	0.80	95.53	-0.00061	0.6964	0.402	0.651	-0.108210367
coron equity	0.00	-0.00280	0.8172	0.023	0.92	-0.00051	0.0000	0.980	0.74	71.19	-0.00030	0.8213	0.442	0.584	-0.036945776
fnb growth	0.02	-0.00147	0.3862	0.091	0.86	0.00056	0.0000	0.990	0.77	80.38	0.00107	0.4165	0.292	0.717	0.016489522
future alb	0.07	0.00214	0.0608	0.154	0.62	0.00313	0.0000	0.665	0.47	21.37	0.00321	0.0451	0.349	0.463	0.214005818
future core eq	0.01	-0.00272	0.4121	0.084	0.97	-0.00056	0.0000	1.027	0.87	161.40	-0.00015	0.8798	0.427	0.674	-0.045422975
gryphon	0.01	-0.00442	0.5980	0.073	0.89	-0.00152	0.0000	1.319	0.85	135.05	-0.00080	0.5652	0.377	0.702	-0.130587461
inv equity r	0.00	-0.00196	0.8462	0.050	0.87	0.00033	0.0000	1.026	0.87	157.87	0.00067	0.5138	0.579	0.532	-0.001091785
inv index r	0.00	-0.00336	0.8465	0.025	0.83	-0.00060	0.0000	1.177	0.96	634.18	-0.00023	0.7154	0.722	0.435	-0.069729991
metro gen	0.01	-0.00438	0.5427	0.075	0.90	-0.00180	0.0000	1.188	0.79	94.63	-0.00144	0.3222	0.478	0.585	-0.126376692
mcubed	0.00	-0.00337	0.6857	0.043	0.91	-0.00103	0.0000	1.035	0.80	96.77	-0.00069	0.5755	0.45	0.612	-0.07014417
nedbank fof	0.01	-0.00220	0.3900	0.089	0.97	0.00160	0.0000	1.101	0.82	111.54	0.00205	0.0911	0.446	627	-0.064012549
nedbank equity	0.01	-0.00220	0.3900	0.089	0.94	-0.00007	0.0000	1.024	0.86	146.12	0.00027	0.7888	0.5	0.604	-0.020654656
ned rain	0.00	0.00038	0.9937	0.001	0.55	0.00205	0.0000	0.690	0.37	14.27	0.00191	0.3102	0.393	0.331	0.143093801
oasis cresent	0.00	0.00103	0.6538	0.031	0.66	0.00229	0.0000	0.570	0.55	30.40	0.00233	0.0546	0.475	0.413	0.177999172
OM growth	0.04	-0.00057	0.1699	0.135	0.82	0.00109	0.0000	0.909	0.61	37.59	0.00136	0.3992	0.17	0.694	0.056480459
OM top co	0.02	-0.00180	0.3705	0.097	0.92	0.00037	0.0000	1.053	0.76	75.80	0.00074	0.5929	0.338	0.677	-0.002310092
pru optimiser	0.01	-0.00285	0.4626	0.082	0.94	-0.00051	0.0000	1.100	0.78	87.62	-0.00023	0.8624	0.451	0.601	-0.053276985
psg equity	0.00	-0.00204	0.6672	0.056	0.81	0.00061	0.0000	1.188	0.67	49.01	0.00056	0.7742	0.574	0.395	-0.01081171
rmb equity	0.01	-0.00164	0.4437	0.085	0.88	0.00057	0.0000	1.052	0.85	140.31	0.00126	0.2558	0.274	0.778	0.007876245
rmb perform	0.00	-0.00377	0.6861	0.034	0.85	-0.00198	0.0000	0.791	0.77	82.64	-0.00160	0.1289	0.347	0.68	-0.0841205
sage	0.01	-0.00119	0.4735	0.059	0.78	0.00037	0.0000	0.741	0.64	43.01	0.00059	0.6462	0.354	0.587	0.041837256
sage multi	0.01	-0.00163	0.5457	0.058	0.74	0.00016	0.0000	0.832	0.53	27.42	0.00026	0.8758	0.316	0.54	0.016895154
sanlam general	0.01	-0.00234	0.4531	0.083	0.95	-0.00002	0.0000	1.095	0.89	192.93	0.00058	0.5459	0.366	0.734	-0.027672988
sanlam equity mm	0.00	-0.00302	0.6258	0.036	0.92	-0.00143	0.0000	0.714	0.81	101.39	-0.00114	0.1757	0.387	0.67	-0.046753953
stanlib index	0.00	-0.00406	0.8858	0.019	0.88	-0.00104	0.0000	1.276	0.88	185.53	-0.00072	0.5421	0.636	0.482	-0.103060259
stanlib equity mm	0.01	-0.00334	0.5461	0.072	0.95	-0.00078	0.0000	1.173	0.86	153.15	-0.00030	0.7925	0.447	0.655	-0.075980577
stanlib properity	0.02	-0.00102	0.3775	0.104	0.96	0.00139	0.0000	1.167	0.84	125.73	0.00177	0.1534	0.467	0.621	0.035322003
stanlib wealthbuilber	0.01	-0.00337	0.5693	0.066	0.90	-0.00092	0.0000	1.119	0.82	115.49	-0.00058	0.6448	0.518	0.567	-0.076165413
tri linear	0.00	-0.00355	0.6458	0.056	0.77	-0.00117	0.0000	1.073	0.68	51.31	-0.00072	0.6832	0.357	0.612	-0.083700714
woolworths	0.01	-0.00245	0.5901	0.055	0.98	-0.00018	0.0000	1.024	0.82	114.27	0.00014	0.8969	0.422	0.652	-0.025828774
OM investors	0.02	-0.00159	0.3244	0.110	0.95	0.00065	0.0000	1.107	0.78	87.20	0.00094	0.4879	0.437	0.613	0.005057962

NB: Beta's are Highlighted if significant at the p = 0.01 level

YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/2003-31/12/2003

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	0.00074	0.7847	-0.029	0.95	-0.00029	0.0000	**1.016**	0.91	240.13	0.00035	0.6979	**0.371**	**0.637**	0.150789862
ABSA growth	0.02	0.00155	0.3145	0.091	0.77	0.00075	0.0000	**0.790**	0.65	44.51	0.00118	0.4398	0.234	**0.608**	0.203458549
AG equity	0.00	0.00196	0.7958	-0.027	0.84	0.00101	0.0000	**0.940**	0.77	81.89	0.00172	0.2248	**0.425**	**0.507**	0.226660731
comm growth	0.00	0.00099	0.9375	0.008	0.90	0.00004	0.0000	**0.927**	0.85	137.78	0.00050	0.6410	**0.242**	**0.721**	0.167251646
coris cap	0.02	-0.00004	0.3724	-0.127	0.93	-0.00142	0.0000	**1.370**	0.92	301.47	-0.00041	0.7110	**0.461**	**0.56**	0.095568398
coron equity	0.00	0.00145	0.7659	-0.029	0.92	0.00050	0.0000	**0.940**	0.86	154.10	0.00095	0.3606	**0.232**	**0.738**	0.195620183
fnb growth	0.00	0.00310	0.6798	-0.039	0.87	0.00222	0.0000	**0.871**	0.80	101.14	0.00265	0.0274	**0.227**	**0.711**	0.303922584
future alb	0.00	0.00118	0.6732	0.042	0.82	0.00028	0.0000	**0.888**	0.81	104.52	0.00125	0.3059	**0.69**	**0.253**	0.178994987
future core eq	0.01	0.00081	0.6163	-0.053	0.98	-0.00025	0.0000	**1.042**	0.94	375.86	0.00045	0.5450	**0.406**	**0.62**	0.154879705
gryphon	0.01	0.00029	0.3991	-0.117	0.92	-0.00105	0.0000	**1.333**	0.92	278.75	-0.00002	0.9862	**0.492**	**0.526**	0.11553349
inv equity r	0.00	0.00280	0.9072	0.011	0.82	0.00194	0.0000	**0.847**	0.83	119.31	0.00214	0.0557	**0.038**	**0.881**	0.283201078
inv index r	0.00	0.00004	0.7169	-0.049	0.92	-0.00128	0.0000	**1.298**	0.98	994.43	-0.00012	0.8404	**0.373**	**0.652**	0.101500289
metro gen	0.02	0.00063	0.3206	-0.112	0.93	-0.00047	0.0000	**1.089**	0.91	243.51	0.00037	0.7054	**0.482**	**0.531**	0.142607409
mcubed	0.02	0.00082	0.3555	-0.116	0.94	-0.00042	0.0000	**1.223**	0.96	651.16	0.00053	0.4396	**0.503**	**0.539**	0.150240661
nedbank fof	0.00	0.00027	0.9638	0.004	0.97	0.00167	0.0000	**1.050**	0.86	381.87	0.00232	0.0029	**0.316**	**0.662**	0.139254648
nedbank equity	0.00	0.00027	0.9638	0.004	0.93	-0.00066	0.0000	**0.916**	0.86	152.38	-0.00013	0.9005	**0.316**	**0.662**	0.125159775
ned rain	0.04	0.00220	0.1470	0.117	0.82	0.00145	0.0000	**0.734**	0.72	63.36	0.00176	0.1537	**0.157**	**0.722**	0.246201028
oasis cresent	0.01	0.00077	0.5560	0.055	0.82	-0.00008	0.0000	**0.840**	0.79	91.97	0.00060	0.6193	**0.483**	**0.461**	0.15541948
OM growth	0.00	0.00157	0.8636	-0.019	0.94	0.00051	0.0000	**1.044**	0.89	206.55	0.00094	0.3461	**0.179**	**0.8**	0.200656245
OM top co	0.00	0.00179	0.9716	-0.004	0.92	0.00078	0.0000	**0.995**	0.87	170.02	0.00118	0.2631	**0.166**	**0.801**	0.215521904
pru optimiser	0.00	0.00134	0.8395	-0.020	0.95	0.00036	0.0000	**0.969**	0.88	187.76	0.00085	0.3755	**0.257**	**0.728**	0.188730333
psg equity	0.01	0.00070	0.5567	-0.055	0.79	-0.00014	0.0000	**0.829**	0.70	56.51	0.00034	0.8154	**0.272**	**0.607**	0.15105095
rmb equity	0.01	0.00307	0.6062	-0.048	0.89	0.00218	0.0000	**0.878**	0.83	121.12	0.00265	0.0176	**0.268**	**0.689**	0.301641314
rmb perform	0.04	0.00101	0.1729	0.129	0.77	0.00015	0.0000	**0.837**	0.68	51.65	0.00064	0.6757	**0.276**	**0.592**	0.168594657
sage	0.00	0.00030	0.6463	0.041	0.86	-0.00054	0.0000	**0.823**	0.78	87.92	-0.00017	0.8868	**0.185**	**0.734**	0.128321462
sage multi	0.05	0.00090	0.0962	0.141	0.75	0.00014	0.0000	**0.740**	0.63	41.13	0.00060	0.6842	**0.282**	**0.554**	0.164375167
sanlam general	0.01	0.00105	0.4676	-0.084	0.96	-0.00009	0.0000	**1.130**	0.95	421.66	0.00051	0.5093	**0.295**	**0.726**	0.167152598
sanlam equity mm	0.00	0.00071	0.7596	-0.024	0.94	-0.00006	0.0000	**0.766**	0.88	178.18	0.00044	0.5785	**0.377**	**0.616**	0.154713967
stanlib index	0.01	-0.00041	0.5879	-0.080	0.93	-0.00184	0.0000	**1.416**	0.95	435.44	-0.00059	0.5431	**0.587**	**0.445**	0.073039043
stanlib equity mm	0.01	0.00095	0.4393	-0.095	0.96	-0.00027	0.0000	**1.204**	0.94	363.99	0.00048	0.5825	**0.37**	**0.653**	0.158909772
stanlib properity	0.00	0.00053	0.6604	0.051	0.94	-0.00061	0.0000	**1.119**	0.90	215.72	0.00003	0.9760	**0.315**	**0.683**	0.135607795
stanlib wealthbuilber	0.00	0.00051	0.9040	-0.014	0.93	-0.00061	0.0000	**1.104**	0.89	201.26	0.00000	0.9985	**0.297**	**0.696**	0.135068633
tri linear	0.00	0.00051	0.6336	0.053	0.88	-0.00054	0.0000	**1.040**	0.89	191.33	0.00003	0.9762	**0.303**	**0.688**	0.13616137
woolworths	0.00	0.00033	0.9021	0.012	0.96	-0.00063	0.0000	**0.948**	0.88	176.30	-0.00001	0.9883	**0.369**	**0.622**	0.128685884
OM investors	0.00	0.00050	0.6505	-0.048	0.96	-0.00055	0.0000	**1.035**	0.90	218.15	0.00001	0.9924	**0.283**	**0.712**	0.136602847

NB: Beta's are Highlighted if significant at the p = 0.01 level

2 YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/1998-31/12/1999

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.07	-0.00138	0.0061	**0.359**	0.90	-0.00156	0.0000	**1.320**	0.83	245.10	-0.00114	0.5996	-0.07	**0.93**	0.079
comm growth	0.08	-0.00155	0.0035	0.294	0.91	-0.00166	0.0000	**1.027**	0.85	293.32	-0.00143	0.3570	-0.05	**0.937**	0.122
coron equity	0.09	0.00139	0.0024	0.207	0.85	0.00134	0.0000	**0.669**	0.81	209.09	0.00108	0.3713	0.11	**0.859**	0.569
future alb	0.10	-0.00103	0.0011	0.270	0.67	-0.00100	0.0000	**0.725**	0.58	68.48	-0.00165	0.4501	**0.22**	**0.664**	0.213
gryphon	0.02	0.00039	0.1372	0.155	0.91	0.00004	0.0000	**1.047**	0.96	1376.83	-0.00071	0.3617	**0.20**	**0.906**	0.337
inv equity r	0.06	-0.00005	0.0097	0.264	0.96	-0.00023	0.0000	**1.063**	0.92	582.04	-0.00043	0.7066	0.06	**0.939**	0.300
inv index r	0.02	0.00094	0.1693	0.130	0.88	0.00061	0.0000	**0.929**	0.98	2346.54	-0.00064	0.2380	**0.36**	**0.82**	0.430
metro gen	0.04	0.00047	0.0467	0.220	0.95	0.00017	0.0000	**1.139**	0.91	527.79	-0.00002	0.9860	0.06	**0.937**	0.341
mcubed	0.07	-0.00179	0.0083	0.286	0.93	-0.00196	0.0000	**1.112**	0.88	354.49	-0.00175	0.2547	-0.04	**0.947**	0.077
nedbank equity	0.07	0.00191	0.0061	0.268	0.84	0.00180	0.0000	**0.953**	0.77	163.56	0.00126	0.5078	0.16	**0.814**	0.604
OM top co	0.04	-0.00092	0.0325	0.239	0.96	-0.00120	0.0000	**1.158**	0.93	638.35	-0.00132	0.2747	0.04	**0.951**	0.163
rmb equity	0.02	0.00684	0.6003	0.115	0.95	-0.00150	0.0000	**1.078**	0.94	736.44	-0.00146	0.1675	0.00	**0.968**	0.140
sage	0.03	-0.00095	0.0812	0.137	0.89	-0.00117	0.0000	**0.779**	0.91	480.94	-0.00145	0.1320	0.10	**0.917**	0.206
sanlam general	0.04	-0.00013	0.0319	0.215	0.96	-0.00038	0.0000	**1.037**	0.96	1204.27	-0.00062	0.4365	0.07	**0.956**	0.286
stanlib index	0.02	0.00048	0.1723	0.127	0.89	0.00016	0.0000	**0.919**	0.97	1414.17	-0.00097	0.1581	**0.33**	**0.833**	0.367
OM investors	0.03	0.00068	0.0886	0.198	0.96	0.00031	0.0000	**1.199**	0.92	615.66	0.00014	0.9143	0.05	**0.946**	0.350

NB: Beta's are Highlighted if significant at the p = 0.01 level

2 YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period																
01/01/2000-31/12/2001	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.01	-0.00151	0.4727	0.062	0.94	-0.00093	0.0000	**1.111**	0.90	442.66	-0.00106	0.2511	**0.338**	**0.699**	0.014
ABSA growth	0.06	-0.00112	0.0146	0.161	0.65	-0.00064	0.0000	**0.721**	0.59	72.64	-0.00030	0.8363	0.17	**0.646**	0.083
AG equity	0.02	0.00143	0.1273	0.085	0.73	0.00181	0.0000	**0.642**	0.68	109.63	0.00207	0.0520	**0.202**	**0.685**	0.415
comm growth	0.01	-0.00058	0.4453	0.056	0.93	-0.00009	0.0000	**0.942**	0.88	386.89	-0.00015	0.8537	**0.327**	**0.701**	0.129
coron equity	0.00	-0.00117	0.6339	0.034	0.93	-0.00070	0.0000	**0.926**	0.90	458.27	-0.00040	0.5929	**0.253**	**0.770**	0.061
fnb growth	0.00	-0.00072	0.5783	0.044	0.92	-0.00020	0.0000	**1.019**	0.88	373.07	0.00043	0.6410	**0.190**	**0.808**	0.106
future alb	0.02	0.00167	0.1484	0.094	0.69	0.00210	0.0000	**0.724**	0.63	86.84	0.00156	0.2388	**0.384**	**0.496**	0.444
future core eq	0.01	-0.00110	0.4087	0.065	0.97	-0.00055	0.0000	**1.036**	0.93	849.27	-0.00030	0.6726	**0.271**	**0.771**	0.065
gryphon	0.00	-0.00120	0.9428	0.007	0.96	-0.00062	0.0000	**1.222**	0.97	1562.72	0.00000	0.9953	**0.228**	**0.826**	0.034
inv equity r	0.01	-0.00045	0.4255	0.066	0.94	0.00012	0.0000	**1.073**	0.91	500.24	0.00020	0.8078	**0.302**	**0.735**	0.137
inv index r	0.00	0.00032	0.7522	0.029	0.94	0.00091	0.0000	**1.186**	0.98	2561.66	0.00014	0.7506	**0.461**	**0.636**	0.218
metro gen	0.03	-0.00046	0.1030	0.146	0.90	0.00021	0.0000	**1.144**	0.88	380.94	0.00044	0.6664	**0.274**	**0.744**	0.135
mcubed	0.00	-0.00048	0.6032	0.042	0.96	0.00006	0.0000	**1.070**	0.96	1245.90	-0.00022	0.6812	**0.381**	**0.697**	0.131
nedbank fof	0.00	-0.00444	0.5267	0.059	0.96	0.00203	0.0000	**1.142**	0.94	874.86	0.00244	0.0005	**0.255**	**0.793**	0.121
nedbank equity	0.00	-0.00444	0.5267	0.059	0.77	-0.00387	0.0000	**1.102**	0.72	130.66	-0.00321	0.0551	0.17	**0.729**	-0.262
oasis cresent	0.07	0.00295	0.0074	0.127	0.66	0.00331	0.0000	**0.524**	0.67	103.09	0.00242	0.0097	**0.540**	**0.364**	0.673
OM top co	0.00	-0.00153	0.8514	-0.016	0.93	-0.00101	0.0000	**1.107**	0.89	410.67	-0.00029	0.7633	**0.183**	**0.818**	0.004
pru optimiser	0.00	0.00005	0.6963	0.034	0.95	0.00061	0.0000	**1.132**	0.91	543.37	0.00073	0.3925	**0.299**	**0.741**	0.189
rmb equity	0.00	-0.00049	0.7371	0.026	0.95	0.00002	0.0000	**1.027**	0.92	597.46	0.00063	0.3916	**0.201**	**0.822**	0.132
rmb perform	0.02	-0.00061	0.1665	0.093	0.92	-0.00012	0.0000	**0.864**	0.88	377.60	0.00057	0.4632	0.16	**0.835**	0.135
sage	0.02	0.00020	0.2076	0.083	0.84	0.00065	0.0000	**0.814**	0.78	182.12	0.00096	0.3537	**0.223**	**0.728**	0.235
sanlam general	0.00	-0.00146	0.7877	0.023	0.96	-0.00090	0.0000	**1.144**	0.95	1055.45	-0.00044	0.4782	**0.246**	**0.804**	0.014
sanlam equity mm	0.00	-0.00171	0.5871	0.036	0.89	-0.00128	0.0000	**0.838**	0.86	315.80	-0.00042	0.6134	0.11	**0.858**	0.007
stanlib index	0.00	0.00028	0.6470	0.041	0.94	0.00087	0.0000	**1.171**	0.98	2173.73	0.00005	0.9159	**0.469**	**0.626**	0.216
stanlib equity mm	0.00	0.00028	0.4880	0.059	0.94	0.00085	0.0000	**1.108**	0.94	775.83	0.00020	0.7801	**0.439**	**0.632**	0.223
tri linear	0.00	-0.00235	0.4976	0.056	0.86	-0.00181	0.0000	**1.027**	0.82	225.87	-0.00078	0.5092	0.11	**0.834**	-0.069
woolworths	0.00	-0.00119	0.6315	0.037	0.99	-0.00068	0.0000	**1.018**	0.96	1221.80	-0.00027	0.5925	**0.248**	**0.808**	0.054
OM investors	0.00	-0.00053	0.6533	0.040	0.93	0.00005	0.0000	**1.144**	0.88	386.30	0.00042	0.6804	**0.249**	**0.764**	0.118

NB: Beta's are Highlighted if significant at the p = 0.01 level

2 YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/2002-31/12/2003

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	-0.00136	0.9954	0.000	0.95	-0.00062	0.0000	**1.051**	0.88	371.65	0.00001	0.9942	**0.435**	**0.615**	0.074
ABSA growth	0.02	-0.00004	0.1972	0.082	0.79	0.00036	0.0000	**0.812**	0.65	95.49	0.00080	0.4283	**0.331**	**0.569**	0.218
AG equity	0.01	0.00219	0.4698	0.048	0.73	0.00266	0.0000	**0.810**	0.63	86.05	0.00310	0.0049	**0.411**	**0.480**	0.544
comm growth	0.00	-0.00090	0.7488	0.022	0.88	-0.00029	0.0000	**0.930**	0.78	180.68	0.00026	0.7673	**0.350**	**0.632**	0.125
coris cap	0.00	-0.00223	0.6656	-0.042	0.91	-0.00120	0.0000	**1.328**	0.87	330.92	-0.00038	0.6868	**0.433**	**0.609**	-0.023
coron equity	0.00	-0.00072	0.9956	0.000	0.92	-0.00004	0.0000	**0.960**	0.80	203.82	0.00050	0.5481	**0.380**	**0.618**	0.151
fnb growth	0.00	0.00069	0.7066	0.026	0.86	0.00129	0.0000	**0.927**	0.79	185.55	0.00186	0.0337	**0.263**	**0.706**	0.325
future alb	0.02	0.00154	0.1557	0.091	0.72	0.00190	0.0000	**0.783**	0.64	90.51	0.00231	0.0270	**0.503**	**0.396**	0.431
future core eq	0.00	-0.00110	0.8517	0.014	0.98	-0.00039	0.0000	**1.036**	0.91	496.80	0.00023	0.6953	**0.423**	**0.641**	0.102
gryphon	0.00	-0.00226	0.7961	-0.025	0.91	-0.00127	0.0000	**1.328**	0.89	389.35	-0.00043	0.6253	**0.415**	**0.635**	-0.030
inv equity r	0.00	0.00039	0.6188	0.035	0.84	0.00097	0.0000	**0.930**	0.80	206.89	0.00155	0.0670	**0.398**	**0.603**	0.282
inv index r	0.00	-0.00173	0.9036	-0.011	0.88	-0.00083	0.0000	**1.243**	0.97	1576.59	-0.00005	0.9091	**0.674**	**0.424**	0.025
metro gen	0.00	-0.00207	0.8025	-0.021	0.91	-0.00122	0.0000	**1.136**	0.85	292.68	-0.00055	0.5163	**0.473**	**0.563**	-0.002
mcubed	0.00	-0.00144	0.6403	-0.039	0.93	-0.00055	0.0000	**1.142**	0.89	407.81	0.00014	0.8503	**0.483**	**0.575**	0.070
nedbank fof	0.00	-0.00105	0.5075	0.046	0.97	0.00158	0.0000	**1.073**	0.88	378.70	0.00221	0.0020	**0.429**	**0.621**	0.066
nedbank equity	0.00	-0.00105	0.5075	0.046	0.93	-0.00047	0.0000	**0.962**	0.85	295.79	0.00010	0.8890	**0.434**	**0.600**	0.102
ned rain	0.01	0.00142	0.2606	0.067	0.68	0.00179	0.0000	**0.713**	0.52	55.15	0.00212	0.0591	0.36	**0.452**	0.425
oasis cresent	0.01	0.00093	0.4506	0.044	0.74	0.00134	0.0000	**0.716**	0.68	107.20	0.00173	0.0516	**0.508**	**0.419**	0.361
OM growth	0.01	0.00034	0.4611	0.054	0.89	0.00092	0.0000	**0.983**	0.76	156.24	0.00148	0.1274	**0.221**	**0.722**	0.268
OM top co	0.00	-0.00010	0.5304	0.047	0.92	0.00052	0.0000	**1.021**	0.81	221.45	0.00112	0.1922	**0.291**	**0.700**	0.213
pru optimiser	0.00	-0.00086	0.6676	0.032	0.94	-0.00019	0.0000	**1.029**	0.83	242.01	0.00039	0.6332	**0.388**	**0.626**	0.125
psg equity	0.01	-0.00066	0.4459	0.059	0.78	-0.00009	0.0000	**0.985**	0.65	93.85	0.00040	0.7481	**0.479**	**0.426**	0.139
rmb equity	0.00	0.00058	0.7971	0.018	0.88	0.00122	0.0000	**0.959**	0.84	264.24	0.00184	0.0181	**0.253**	**0.745**	0.312
rmb perform	0.02	-0.00126	0.1428	0.093	0.80	-0.00087	0.0000	**0.822**	0.71	126.50	-0.00039	0.6702	**0.315**	**0.621**	0.070
sage	0.01	-0.00046	0.3939	0.051	0.83	-0.00001	0.0000	**0.785**	0.71	123.65	0.00043	0.6213	**0.319**	**0.615**	0.176
sage multi	0.03	-0.00026	0.0877	0.107	0.74	0.00007	0.0000	**0.781**	0.58	69.66	0.00046	0.6776	0.31	**0.540**	0.184
sanlam general	0.00	-0.00082	0.9598	-0.004	0.95	-0.00002	0.0000	**1.114**	0.92	565.21	0.00069	0.2585	**0.351**	**0.709**	0.135
sanlam equity mm	0.00	-0.00121	0.8820	0.008	0.93	-0.00070	0.0000	**0.747**	0.85	276.57	-0.00025	0.6543	**0.388**	**0.637**	0.101
stanlib index	0.00	-0.00233	0.7616	-0.030	0.91	-0.00131	0.0000	**1.352**	0.92	573.30	-0.00051	0.4961	**0.617**	**0.457**	-0.038
stanlib equity mm	0.00	-0.00137	0.8684	-0.014	0.96	-0.00049	0.0000	**1.192**	0.90	470.80	0.00024	0.7376	**0.425**	**0.637**	0.071
stanlib prosperity	0.00	-0.00042	0.7981	0.021	0.94	0.00035	0.0000	**1.135**	0.87	324.70	0.00102	0.2064	**0.422**	**0.618**	0.176
stanlib wealthbuilder	0.00	-0.00151	0.7322	0.028	0.92	-0.00078	0.0000	**1.111**	0.85	297.63	-0.00012	0.8871	**0.447**	**0.589**	0.049
tri linear	0.00	-0.00163	0.9838	0.002	0.83	-0.00088	0.0000	**1.056**	0.78	183.08	-0.00022	0.8247	**0.351**	**0.632**	0.041
woolworths	0.00	-0.00110	0.6119	0.035	0.97	-0.00047	0.0000	**0.980**	0.85	292.77	0.00008	0.9056	**0.403**	**0.628**	0.100
OM investors	0.00	-0.00071	0.7315	0.026	0.95	-0.00001	0.0000	**1.064**	0.84	262.59	0.00059	0.4689	**0.395**	**0.627**	0.142

NB: Beta's are Highlighted if significant at the p = 0.01 level

3 YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/1998-31/12/2000

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.06	-0.00231	0.0031	**0.300**	0.89	-0.00159	0.0000	**1.289**	0.83	249.28	0.00212	0.5373	-0.06	**0.927**	-0.091
comm growth	0.06	-0.00153	0.0027	0.236	0.91	-0.00095	0.0000	**1.011**	0.85	291.92	0.00154	0.2618	-0.04	**0.934**	0.101
coron equity	0.05	0.00012	0.0045	0.163	0.85	0.00052	0.0000	**0.710**	0.81	218.54	0.00117	0.3826	0.111	**0.862**	0.485
future alb	0.09	-0.00138	0.0001	0.252	0.67	-0.00092	0.0000	**0.736**	0.58	70.03	0.00213	0.3887	**0.22**	**0.666**	0.162
gryphon	0.01	-0.00042	0.2066	0.107	0.91	0.00012	0.0000	**1.074**	0.97	1427.75	0.00076	0.4009	0.192	**0.91**	0.283
inv equity r	0.05	-0.00125	0.0074	0.218	0.95	-0.00066	0.0000	**1.068**	0.92	593.80	0.00113	0.5751	0.066	**0.938**	0.140
inv index r	0.01	0.00011	0.1819	0.102	0.89	0.00059	0.0000	**0.958**	0.98	2421.85	0.00053	0.2521	**0.362**	**0.823**	0.421
metro gen	0.04	0.00013	0.0161	0.207	0.94	0.00074	0.0000	**1.116**	0.91	534.70	0.00127	0.8764	0.062	**0.935**	0.396
mcubed	0.05	-0.00172	0.0072	0.229	0.93	-0.00111	0.0000	**1.102**	0.88	361.23	0.00150	0.2478	-0.03	**0.944**	0.049
nedbank equity	0.05	-0.00169	0.0035	0.237	0.79	-0.00113	0.0000	**0.971**	0.77	171.58	0.00185	0.4624	0.153	**0.821**	0.069
OM top co	0.02	-0.00141	0.0518	0.173	0.95	-0.00080	0.0000	**1.158**	0.93	645.40	0.00118	0.1775	0.039	**0.951**	0.087
rmb equity	0.03	-0.00143	0.0298	0.178	0.95	-0.00087	0.0000	**1.065**	0.94	765.07	0.00102	0.1282	0.001	**0.968**	0.106
sage	0.02	-0.00116	0.0528	0.122	0.88	-0.00075	0.0000	**0.790**	0.91	498.66	0.00093	0.1278	0.102	**0.918**	0.202
sanlam general	0.03	-0.00067	0.0398	0.167	0.96	-0.00011	0.0000	**1.063**	0.96	1259.53	0.00077	0.4031	0.071	**0.957**	0.248
stanlib index	0.01	-0.00011	0.2042	0.096	0.89	0.00037	0.0000	**0.946**	0.97	1456.48	0.00066	0.1316	**0.328**	**0.838**	0.378
OM investors	0.02	-0.00027	0.1083	0.147	0.96	0.00035	0.0000	**1.190**	0.92	625.18	0.00124	0.9019	0.052	**0.945**	0.286

NB: Beta's are Highlighted if significant at the p = 0.01 level

3 YEARLY

Performance Output according to:

1. Unit trust risk-adjusted performance against the ALSI (J203) in a single factor CAPM framework.
2. Unit trust risk-adjusted performance against The Financial and Industrial (J000) and Resources index (J250) in an APT 2-Factor framework
3. Unit trust risk-adjusted performance against A peer group benchmark (mean General Equity unit trust) performance using a single factor APT framework
4. Absolute (raw return) performance

Period

01/01/2001-31/12/2003

	1 Factor				Peer Group				2 factor						Absolute Returns
													Beta		
	R 2	alpha	p(correlation)	beta	R 2	Alpha	p(correlation)	Beta	R 2	F	Alpha	p(alpha)	Resources	Fin and Ind	
ABSA	0.00	-0.00023	0.6625	0.027	0.96	-0.00029	0.0000	1.070	0.91	728.78	0.00025	0.0006	0.672	0.632	0.292
ABSA growth	0.03	-0.00040	0.0313	0.107	0.71	-0.00045	0.0000	0.741	0.63	129.63	-0.00011	0.0009	0.9055	0.519	0.276
AG equity	0.00	0.00254	0.4577	0.036	0.74	0.00250	0.0000	0.729	0.67	154.20	0.00291	0.0008	0.0007	0.564	1.023
comm growth	0.01	-0.00026	0.3683	0.050	0.91	-0.00032	0.0000	0.939	0.84	390.20	0.00022	0.0007	0.7481	0.634	0.295
coris cap	0.00	-0.00131	0.9714	0.003	0.93	-0.00138	0.0000	1.275	0.90	713.44	-0.00075	0.0007	0.2957	0.624	0.072
coron equity	0.00	-0.00029	0.5921	0.030	0.93	-0.00034	0.0000	0.950	0.86	468.74	0.00022	0.0006	0.7358	0.646	0.291
fnb growth	0.00	0.00116	0.4421	0.044	0.90	0.00111	0.0000	0.956	0.85	434.55	0.00199	0.0007	0.0038	0.748	0.618
future alb	0.01	0.00296	0.1813	0.065	0.71	0.00292	0.0000	0.724	0.64	136.63	0.00313	0.0009	0.0006	0.469	1.157
future core eq	0.00	-0.00040	0.4177	0.049	0.97	-0.00046	0.0000	1.045	0.91	760.21	0.00013	0.0006	0.8185	0.664	0.262
gryphon	0.00	-0.00147	0.8081	0.018	0.94	-0.00154	0.0000	1.284	0.92	891.78	-0.00081	0.0006	0.2109	0.657	0.045
inv equity r	0.01	0.00137	0.3360	0.057	0.89	0.00130	0.0000	0.988	0.87	505.34	0.00176	0.0007	0.0083	0.6	0.682
inv index r	0.00	-0.00030	0.7750	0.021	0.91	-0.00036	0.0000	1.251	0.97	2780.11	-0.00037	0.0004	0.3246	0.467	0.257
metro gen	0.00	-0.00124	0.4079	0.059	0.92	-0.00132	0.0000	1.201	0.88	579.29	-0.00074	0.0007	0.3174	0.614	0.089
mcubed	0.00	-0.00046	0.8698	0.011	0.95	-0.00052	0.0000	1.112	0.92	940.13	-0.00008	0.0005	0.8855	0.597	0.243
nedbank fof	0.00	-0.00059	0.5492	0.038	0.88	-0.00064	0.0000	1.050	0.83	367.66	0.00005	0.0008	0.9471	0.658	0.182
nedbank equity	0.00	-0.00059	0.5492	0.038	0.88	-0.00064	0.0000	1.050	0.83	367.66	0.00005	0.0008	0.9471	0.658	0.221
ned rain	0.01	0.00266	0.1585	0.073	0.75	0.00261	0.0000	0.792	0.66	145.67	0.00298	0.0009	0.0016	0.533	1.050
oasis cresent	0.02	0.00250	0.1196	0.069	0.76	0.00245	0.0000	0.683	0.72	192.79	0.00246	0.0007	0.0009	0.403	1.015
OM growth	0.00	-0.00001	0.4216	0.046	0.88	-0.00007	0.0000	0.939	0.80	297.73	0.00090	0.0008	0.2545	0.763	0.346
OM top co	0.00	-0.00018	0.5729	0.035	0.93	-0.00024	0.0000	1.041	0.85	435.05	0.00062	0.0007	0.3919	0.723	0.304
pru optimiser	0.00	0.00007	0.5850	0.034	0.95	0.00001	0.0000	1.079	0.89	591.60	0.00066	0.0006	0.3098	0.661	0.353
psg equity	0.01	0.00004	0.2444	0.080	0.86	-0.00004	0.0000	1.129	0.81	329.09	0.00020	0.0009	0.8291	0.498	0.332
rmb equity	0.00	0.00084	0.5341	0.037	0.92	0.00078	0.0000	1.000	0.89	615.06	0.00171	0.0006	0.0052	0.765	0.531
rmb perform	0.03	-0.00059	0.0365	0.107	0.86	-0.00066	0.0000	0.844	0.79	293.69	-0.00009	0.0007	0.9047	0.649	0.234
sage	0.01	0.00045	0.1391	0.072	0.82	0.00039	0.0000	0.784	0.73	202.32	0.00097	0.0008	0.2194	0.642	0.457
sage multi	0.07	0.00027	0.0006	0.168	0.69	0.00020	0.0000	0.738	0.57	99.44	0.00062	0.0010	0.5419	0.528	0.411
sanlam general	0.00	-0.00077	0.7441	0.021	0.96	-0.00083	0.0000	1.110	0.93	1043.55	-0.00001	0.0005	0.986	0.718	0.186
sanlam equity mm	0.00	-0.00059	0.3985	0.038	0.92	-0.00063	0.0000	0.754	0.87	524.11	-0.00011	0.0005	0.8243	0.683	0.248
stanlib index	0.00	-0.00078	0.7234	0.027	0.93	-0.00085	0.0000	1.303	0.94	1236.46	-0.00078	0.0006	0.1705	0.479	0.161
stanlib equity mm	0.00	-0.00025	0.8181	0.033	0.95	-0.00031	0.0000	1.147	0.92	933.37	0.00016	0.0006	0.7791	0.602	0.281
stanlib prosperity	0.00	0.00003	0.5358	0.038	0.95	-0.00003	0.0000	1.062	0.89	633.92	0.00065	0.0006	0.2934	0.676	0.346
stanlib wealthbuilder	0.01	-0.00034	0.2262	0.075	0.92	-0.00041	0.0000	1.055	0.88	544.05	0.00000	0.0007	0.999	0.581	0.269
tri linear	0.00	-0.00112	0.7658	0.019	0.87	-0.00117	0.0000	1.027	0.83	370.13	-0.00041	0.0008	0.6058	0.68	0.126
woolworths	0.00	-0.00046	0.4685	0.042	0.98	-0.00052	0.0000	1.005	0.91	768.04	0.00010	0.0005	0.8511	0.674	0.253
OM investors	0.01	0.00003	0.3493	0.061	0.93	-0.00003	0.0000	1.104	0.85	432.80	0.00058	0.0008	0.4539	0.631	0.340

NB: Beta's are Highlighted if significant at the p = 0.01 level