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The persistence of unit trust performance for the period July 1985–June 1995

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The purpose of this study was to determine whether any persistence of performance existed in the unit trust industry in South Africa over the ten-year period from July 1985 to June 1995. Calculations were done over different time periods (one-, two- and four-year periods) and using different definitions of superior performance (positive Jensen alphas or winner/loser phenomena). Results of nominal returns and risk-adjusted returns were also compared. Results obtained show that persistence in performance does exist, but that it is more of a 'loser' phenomenon than a 'winner' phenomenon.

Introduction

Investors usually judge and select unit trusts on the basis of the unit trusts' performance track record. Although the usefulness of the track-record approach seems obvious to participants, most academics do not believe in this approach. The efficient market hypothesis implies that past performance is no guide to future performance after adjustment for risk or other pricing factors. If the hypothesis is literally true, not only can the average manager not be expected to outperform passive management, but even managers with the best historical record can not be expected to keep up their performances in the future. This study focusses on the second part of the hypothesis, and asks whether persistence in performance does exist, and whether the best-performing funds of the past are likely to be the best-performing funds of the future.

Review of literature

Several mutual fund studies in the USA have looked at predictability of performance as part of a larger study of mutual fund performance. These include the studies by Lehmann & Modest (1987), Grinblatt & Titman (1989a) and Elton, Gruber, Das & Hlavka (1993). Recently, however, there have been several more focussed articles that directly examine persistence in mutual fund performance and claim to have isolated a 'hot hand' phenomenon. These include the articles by Grinblatt & Titman (1992), Shukla & Trzcinka (1992), Hendricks, Patel & Zeckhauser (1993), Goetzman & Ibbotson (1994), Bauman & Miller (1994), Brown & Goetzmann (1995), Malkiel (1995) and Elton, Gruber & Blake (1996).

Grinblatt & Titman (1992), using an eight-portfolio benchmark, concluded that there is a positive persistence in mutual fund performance. Shukla & Trzcinka (1992) examined persistence in the performance of 1387 mutual funds listed on the NASDAQ (a computerized communications network that serves the over-the-counter [OTC] market in the USA) at the end of March 1989. They indicated two problem areas associated with the fact that they found persistent superior performance:

- The data is subject to survivorship bias since it consists only of funds that had survived until 1989; and
- Most mutual funds are owned by investment advisers who manage groups of funds. These advisers may have the incentive to use superior information to build the reputation of the fund group rather than of the individual funds.[1]

Their overall conclusion was that the persistence of performance in all funds arises from a persistence of inferior performance rather than from a persistence of superior performance.

Hendricks, Patel & Zeckhauser (1993) examined the quarterly net returns of 96 no-load growth funds during the period from 1974 to 1987. They found that when performance is measured using the Jensen alpha, mutual funds that have performed well in recent years tend to continue to be superior net performers in the next one to eight quarters. 'Icy hands', the 'evil' counterpart of 'hot hands', also show up in their sample. Goetzmann & Ibbotson (1994) found that past returns and relative rankings are useful in predicting future returns and rankings. They reached this conclusion for nominal returns, Jensen risk-adjusted alpha measures and style-categorized subgroups. Brown & Goetzmann (1995) used a data set that they claim is free of most forms of survivorship bias and found that the persistence is strongest in losing mutual funds.

Malkiel (1995) looked at mutual fund returns during the 1971 to 1991 period and confirmed the persistence phenomenon but noted two caveats. Firstly, the findings are likely to be influenced by survivorship bias. Secondly, the relationship may not be very robust since the strong persistence that characterized the 1970s failed to exist during the 1980s. Elton, Gruber & Blake (1986) also examined persistence in mutual fund performance and concluded that the past carries information about the future and that when performance is evaluated over a one-year evaluation period, the previous year's data conveys much more information about performance than data from the previous three years.

Some degree of persistence in performance has been established, but three issues remain unresolved in the studies, in the USA namely:

- How can one truly eliminate survivorship bias?
- What is the appropriate technique for risk adjustment?
- Does the length of the period (selection period) influence the chance of correctly predicting the following period (evaluation period)?

This study attempts to find an answer for the initial issue of whether there is persistence in performance in the South African unit trust industry. The potential for survivorship bias is a real problem for studies in the USA because of the large number of funds that have closed down. In South Africa, this problem does not exist to a material extent, since only a few of the unit trusts have as yet closed down (in the sample period of July 1985 to June 1995, none closed down). The two remaining issues, namely whether risk-adjustment and time-periods influence results, are addressed in this study. Central to the issue of risk adjustment is how to define excess performance. A common yardstick of risk-adjusted returns, the Jensen measure, was used in this article. Whether or not the security market line represents a legitimate and meaningful benchmark for managers' performance and whether the All Share index (ALSI) is the correct benchmark is not addressed in this study. To determine whether the length of the time periods is important to predict performance, the tests were done over four-year, two-year and one-year intervals.

Sample and measurement of performance

Unit trusts traded in South Africa for the period from July 1985 to June 1995 were used as the sample. By June 1995, there were 84 unit trusts (24 general funds, 38 specialist equity funds, 16 income funds and six gilt funds) in South Africa. However, only thirteen of these funds were in existence for the entire ten-year period. It was decided to use these thirteen funds as well as the 33 funds that were in existence for the five-year period from July 1990 to June 1995 as the sample for the investigation (see Appendix 1).

Repurchase prices and dividend information were obtained from the University of Pretoria. It was argued that for the purposes of this research, the repurchase price is more valid than the selling price, because repurchase returns are compared to indices that do not contain transaction charges. Monthly rates of return were calculated using equation 1 and crediting the dividends in the month of payment.

$$R_{(t)} = \frac{P_{(t)} - P_{(t-1)} + D_{(t)}}{P_{(t-1)}} \qquad (1)$$

where

$R_{(t)}$ = the return on the security in period t,
$P_{(t)}$ = the price of the security at the end of period t, and
$D_{(t)}$ = the total of all the dividends paid during period t.

To adjust returns for risk, the Jensen alpha was calculated for all the funds over the different periods. Using the CAPM as a theoretical framework, Jensen (1968) postulated that the overall performance of a portfolio could be assessed from a regression equation. The Jensen alpha (JA) is defined as the difference between the actual average return by a portfolio and the equilibrium return that should have been earned by the portfolio, given market conditions and the risk of the portfolio. Suppose the portfolio actually earned an average return of R_p, then the Jensen alpha is defined as follows:

$$\alpha = R_p - (R_f + \beta_p (R_m - R_f)) \qquad (2)$$

where

R_p = the individual fund portfolio's return
R_f = the riskless rate (3-month treasury bill)
R_m = the return on market portfolio (All Share index)
β_p = the coefficient of OLS regression of fund return on the market portfolio over the period.

The logical choice for a share index for a South African study is the Johannesburg Stock Exchange All Share index (ALSI) which is the most comprehensive South African index. The ALSI is calculated using the market capitalization weighting method. Monthly rates of return were obtained from I-Net.[2] The methodology used is the same as that used to calculate the performance results published by the Johannesburg Stock Exchange (JSE). Data on the 3-month treasury bill is used to represent the risk-free rate of return in the study.

Initially, to answer the question whether there was persistence in performance on a risk-adjusted basis, data was divided into different overlapping periods. The ten years' worth of data was segmented into seven overlapping four-year periods: July 1985–June 1989, July 1986–June 1990, July 1987–June 1991, July 1988–June 1992, July 1989–June 1993, July 1990–June 1994 and July 1991–June 1995. The five-year period data was divided into four overlapping two-year periods: July 1990–June 1992, July 1991–June 1993, July 1992–June 1994 and July 1993–June 1995. To avoid the problem that overlapping may lead to false conclusions about persistence, the alphas in adjacent period were also examined. The ten-year period was divided into three four-year adjacent periods: July 1985–June 1989 and July 1989–June 1993, July 1986–June 1990 and July 1990–June 1994 and July 1987–June 1991 and July 1991–June 1995. The performances in these three adjacent periods were further categorized according to winner/loser phenomena. Unit trusts were classified as winners if they had positive alphas and categorized as losers if they had negative alphas. Rank order correlations between the adjacent periods were calculated to further determine persistence in performance.

To investigate whether past performance can be used to predict future performance, data was categorized according to winner/loser phenomena based on the work done by Goetzmann & Ibbotson (1994). Unit trusts were classified as winners if their performance was better than the median performance of the funds in total and as losers if their performance was worse than the median performance of the funds in total. A measure of how funds rank *vis à vis* one another was preferred to one that measures performance against some benchmark because of the unresolved issues relating to benchmarks. The data was divided into successive two-year and one-year intervals to establish whether the length in the selection periods influences results in the

Table 1 Jensen's alphas of 13 unit trusts in seven overlapping periods from July 1985 to June 1995

	July 1985–June 1989	July 1986–June 1990	July 1987–June 1991	July 1988–June 1992	July 1989–June 1993	July 1990–June 1994	July 1991–June 1995
GuardBank Growth	0.002480	0.003933	0.005173	0.003938	0.004037	0.002539	0.001534
Old Mutual Investors' Fund	0.005710	0.004743	0.003109	0.003475	0.000973	0.000642	0.000509
Sage Fund	0.000837	0.001940	0.002789	0.003103	0.001884	0.006178	–0.001719
Sanlam Index	0.001338	0.003228	0.004216	0.002749	0.000489	0.001986	–0.002455
Sanlam Prime Growth	0.000948	–0.001041	0.000586	0.002264	0.001869	0.004150	0.001698
Sanlam General	–0.002370	0.000811	0.002364	0.002594	0.001695	–0.000937	–0.002645
Standard Bank Mutual	0.001675	0.003970	0.004394	0.003833	0.003736	0.002430	0.001741
UAL Blue Chip Growth	–0.001746	0.000121	0.002907	0.003710	0.002490	0.000970	0.000475
Sanlam Mining & Resources	**–0.002710**	**–0.003447**	**–0.003279**	**–0.004282**	**–0.006017**	**–0.008002**	**–0.009882**
UAL Mining & Resources	**–0.001020**	**–0.001733**	**–0.001486**	**–0.002999**	**–0.004068**	**–0.004062**	**–0.002864**
Standard Bank Gold	**–0.005592**	**–0.006192**	**–0.001062**	**–0.013763**	**–0.002905**	**–0.005550**	**–0.009003**
Sanlam Industrial	0.000642	0.002340	0.004925	0.005284	0.005107	0.004342	0.002519
Standard Bank Extra Income	0.000514	0.002165	0.001304	0.000375	0.001062	0.000191	–0.000763

evaluation period. This was done for nominal returns and risk-adjusted returns to see if there are differences in results. To establish significance in results, an alternative approach of running regressions of two-year alphas on subsequent two-year alphas was also done. A significant positive t-statistic for the slope coefficient in this regression would reject the null hypothesis that past performance is unrelated to future performance and support the alternative hypothesis that past performance is positively related to future performance.

Results

Tables 1 and 2 illustrate the results of the Jensen alphas in the overlapping periods for the two sample periods.

Of the 13 funds in the *ten-year period*, four funds had positive Jensen alphas for all seven periods, namely: GuardBank Growth fund, Old Mutual Investors Fund, Standard Bank Mutual and Sanlam Industrial. Three funds had negative Jensen alphas in all seven periods, namely: Sanlam Mining & Resources, UAL Mining & Resources and Standard Bank Gold.

For the *five-year period*, 13 funds had positive alphas for all periods, namely: BOE Growth, CU Growth, GuardBank Growth, Investec Equity, RMB Equity, Norwich, Standard Bank Mutual, Syfrets Growth, Old Mutual Industrial, UAL Selected Opportunities, Syfrets Income, Investec Gilt and UAL Gilt. Two funds had negative alphas for all the periods, namely: Sanlam Mining & Resources and UAL Mining and Resources (none of these alpha values were significant at a 5% confidence level).

These results clearly indicate that some funds may have persistent superior performance and that some funds exhibit persistent negative performance. Similar results were obtained for adjacent periods.

Further investigations on the adjacent periods show that the chances of obtaining superior performance, based on the previous four years' results, was 100% for the first period, 77.8% for the second period, 50% for the last period and 73% for the combined periods (see Table 3). The first period, as well as combined results, was significant at a 5% level of confidence. The Spearman rank correlation coefficient ranged between 46.2% and 74.2% (see Table 4). In one of the three time periods (July 1987–June 1991 and July 1991–June 1995) the correlation coefficients were significant at a 5% confidence level. Although the winner/loser phenomena were both present (73% for winning/69% for losing) in the sample period, statistically significant persistence of performance occurred in only one time period.

The results for the nominal returns and risk-adjusted returns over the successive two-year intervals for both sample periods are illustrated in Tables 5 and 6 (categorized according to whether or not the results were above or below the median performance).

The information in Table 5 shows the combined results of all the two-year periods for the 13 funds, indicating that the ratio associated with picking a winner, based upon past winning performance, is about 60/40 (58.3/41.6%). In two periods there was a 66% chance, and in the remaining two periods, a 50% chance of picking a winner. If investors demand higher returns from riskier funds, one may argue that tests using returns uncorrected for risk merely document the differential expected return between high-risk *versus* low-risk funds. In order to investigate the question, the same test was done on average alphas over the two-year period. The repeat winner phenomenon remains visible (see Table 5– second part of table). Two periods still have a 66% chance and two a 50% chance, but in different time periods than for nominal returns. The chance of picking a loser, based on past losing performances, was even better (on nominal returns as well as on risk-adjusted returns), namely a 64% chance. Results from the Goetzman & Ibbotson study (1994) show that the chance of picking a winner improves from 59.1 to 62% with risk adjustment. The chance of picking a loser from losing performances ranges between 59 and 63.6%. The results from this study differed in two respects from the Goetzmann & Ibbotson's results, namely, in that similar results were obtained with nominal and risk-adjusted performance and that there was a bigger difference between repeat winner and repeat losers.

Table 2 Jensen's alphas of 33 unit trusts in four overlapping periods from July 1990 to June 1995

	July 1990–June 1992	July 1991–June 1993	July 1992–June 1994	July 1993–June 1995
BOE Growth	0.006088	0.004329	0.005606	0.006319
CU Growth	0.000018	0.002943	0.001655	0.000878
GuardBank Growth	0.003791	0.002580	0.002090	0.000267
Investec Equity	0.003831	0.002646	0.006537	0.007605
RMB Equity	0.004496	0.000196	0.001916	0.002777
Marriot Equity	0.002518	–0.000109	0.002409	–0.000621
Norwich	0.001197	0.002150	0.009426	0.013214
Old Mutual Investors' Fund	0.003066	–0.002023	–0.002554	0.003039
Sage Fund	0.003649	–0.000722	–0.002046	0.000498
Sanlam Index	0.001503	–0.004084	–0.005331	–0.000930
Sanlam Prime Growth	0.008139	–0.000456	–0.000479	0.003899
Sanlam General	0.003763	–0.003303	–0.005851	–0.001999
Southern Equity	0.005196	0.004698	0.003179	–0.000623
Standard Bank Mutual	0.004273	0.001841	0.001224	0.001441
Syfrets Growth	0.008071	0.004569	0.004412	0.001193
UAL Blue Chip Growth	0.002687	0.001266	–0.000283	–0.002310
GuardBank Resources	–0.005101	0.000307	0.001869	–0.000916
Old Mutual Mining	–0.013880[a]	–0.002072	0.008648	0.006979
Sage Resources	–0.007380	–0.002433	0.004304	0.006526
Sanlam Mining & Resources	**–0.008124**	**–0.008984**	**–0.009206**	**–0.010943**
Southern Mining	–0.008243	–0.005838	0.001104	0.000022
UAL Mining & Resources	**–0.004406**	**–0.004949**	**–0.004394**	**–0.000717**
Old Mutual Gold	–0.024254	0.007642	0.014265	–0.015944
Standard Bank Gold	–0.017102	0.003415	0.004313	–0.021135[a]
Old Mutual Industrial	0.013141	0.000442	0.002631	0.009268
Sanlam Industrial	0.010480	0.000280	–0.001235	0.004437
UAL Selected Opportunities	0.007453	0.002284	0.010346	0.008703
GuardBank Income	0.002238	0.002085	0.000664	–0.000142
Old Mutual Income	0.001242	0.002226	0.000574	–0.000614
Standard Bank Extra Income	0.000923	0.000472	–0.001477	–0.002212
Syfrets Income	0.000351	0.001760	0.001621	0.000355
Investec Gilt	0.001239	0.005120	0.007525	0.004294
UAL Gilt	0.001448	0.004074	0.003722	0.001096

[a] = significant at 0.05 confidence level

For the 33 funds over the five-year period, the repeat winners and repeat losers phenomena only existed for risk-adjusted performances (56.3% and 58.8%), see Table 6. To draw any conclusions from one period of observation may be insufficient.

From the ten-year sample it is clear that, over the two-year period, the repeat loser phenomenon was more persistent than the repeat winner phenomenon. An alternative approach to run regressions to measure the magnitude of the two-year alpha on the subsequent two-year alpha is presented in Table 7. The results appear significant in only one of the four periods, assuming independence of observations.

Next, the results were analyzed assuming that winners and losers are ranked and determined over one-year periods, and then ranked again over the subsequent one-year periods. The results were also categorised into high-variance funds and low-variance funds, to see whether the results are related to fund variance. The variance of the returns of all the funds was measured over the entire period and then ranked. The funds with variance above the median were categorised as high-variance, while median and below were categorised as low-variance funds (see Tables 8 to 11).

The repeat winner phenomenon existed only for low-variance funds, 53.3% on nominal returns and 54.5% on risk-adjusted returns for the ten-year sample period. For the five-year sample period, the winner phenomenon existed for low-variance funds with nominal returns 52.8% and for high-variance funds on a risk-adjusted basis 55.6%.

Table 3 Tests of persistence of unit trust performance over adjacent four-year intervals from July 1985 to June 1995 ranked on risk-adjusted performance

		Next year		
		Winners	Losers	Repeat winners
Initial year				
July 1985–June 1989	Winners	7	0	100%*
	Losers	3	3	50%
July 1986–June 1990	Winners	7	2	77.7%
	Losers	1	3	75%
July 1987–June 1991	Winners	5	5	50%
	Losers	0	3	100%
Combined results	Winners	19	7	73%*
	Losers	4	9	69%

* = significant at 0.05 confidence level. (Binomial probabilities were calculated for samples smaller than 20. For samples larger than 20, the *z*-test for repeat winner was calculated. Let p be the probability that a winner fund continues to be a winner fund in the next period, and assume independence across funds. If there is no persistence, one would expect p to equal 1/2. Therefore, evidence against persistence in winning would be provided if one fails to reject the hypothesis that $p = 1/2$.)

Table 4 Rank correlations among unit trusts for adjacent four-year subperiods

	July 1985–June 1989 & July 1989–June 1993		July 1986–June 1990 & July 1990–June 1994		July 1987–June 1991 & July 1991–June 1995	
	r_s	p	r_s	p	r_s	p
Spearman correlation coefficient	0.46154	0.1124	0.53846	0.0576	0.74176	0.0037*

* = Significant at 0.05 confidence level

The opposite is true for the repeat loser phenomenon. The repeat loser phenomenon existed for funds in total for both sample periods on nominal returns as well as on a risk-adjusted basis and especially for high-variance funds (ranging between 52.9 and 55.5% for total funds and between 58 and 67.6% for high-variance funds). On average it seems that both the repeat winner and repeat loser phenomena existed at much lower percentages over the one-year periods, when compared to the two-year periods.

Conclusion

Like with all performance evaluation studies, a few concerns about the results or the methods used to obtained the results can be raised. We have tried to address some of

Table 5 Tests of persistence of unit trust performance over successive two-year intervals from July 1985 to June 1995 ranked on nominal returns/risk-adjusted performance

		Nominal performance			Risk-adjusted performance		
		Winners	Losers	Repeat Winners/Losers	Winners	Losers	Repeat Winners/Losers
Initial year							
July 1985–June 1987	Winners	3	3	50%	4	2	66.7%
	Losers	3	4	57%	2	5	71%
July 1987–June 1989	Winners	4	2	66.7%	4	2	66.7%
	Losers	2	5	71.4%	2	5	71%
July 1989–June 1991	Winners	3	3	50%	3	3	50%
	Losers	3	4	57%	3	4	57%
July 1991–June 1993	Winners	4	2	66.7%	3	3	50%
	Losers	2	5	71.4%	3	4	57%
Combined results	Winners	14	10	58.3%	14	10	58.3%
	Losers	10	18	64%	10	18	64%

Table 6 Tests of persistence of unit trust performance over successive two-year intervals from July 1990–June 1995 ranked on nominal returns/risk-adjusted performance

		Nominal performance			Risk-adjusted performance		
		Winners	Losers	Repeat Winners/Losers	Winners	Losers	Repeat Winners/Losers
Initial year							
July 1990–June 1992	Winners	6	10	37.5%	9	7	56.3%
	Losers	10	7	41.2%	7	10	58.8%

Table 7 Regression of last two years' alphas on the next two years' alphas

	Intercept	β	T-stat	R^2
July 1987–June 1989 on July 1985–June 1987	–0.002562	0.595422	0.0617	0.2823
July 1989–June 1991 on July 1987–June 1989	0.003722	0.765257	0.0018[a]	0.6019
July 1991–June 1993 on July 1989–June 1991	–0.0013819	0.089799	0.6611	0.0181
July 1993–June 1995 on July 1991–June 1993	–0.002033	0.016117	0.9791	0.0001

[a] = significant at 0.05 confidence level

these concerns, but some remain challenges for future research. Limitations of this research are the following: the small sample size for information currently available in South Africa and the absence of significance in the testing of the results. The Jensen alpha was used in all the tests to adjust for risk, however, not all the precautions for using a Jensen alpha were adhered to, for instance no adjustments were made for problems arising due to the non-stationarity of various distributions. A measure of how funds rank *vis à vis* one another (winner/loser phenomena) was preferred to one that measures performance against some benchmark because of the unresolved issues relating to benchmarks. Despite these limitations, few things can be learned from this study.

Table 8 Tests of persistence of unit trust performance over successive one-year intervals from July 1985 to June 1995 ranked on nominal returns

		High-variance			Low-variance			Total sample		
		Next year Winners	Losers	Repeat Winners/Losers	Next year Winners	Losers	Repeat Winners/Losers	Next year Winners	Losers	Repeat Winners/Losers
Initial year										
July 1986–June 1987	Winners	2	3	40%	0	1	0%	2	4	33.3%
	Losers	1	0	0%	3	3	30%	4	3	42.8%
July 1987–June 1988	Winners	1	2	33%	1	2	33.3%	2	4	33.3%
	Losers	0	3	100%	4	0	0%	4	3	42.8%
July 1988–June 1989	Winners	1	0	100%	1	4	25%	2	4	33.3%
	Losers	4	1	20%	0	2	100%	4	3	42.8%
July 1989–June 1990	Winners	3	2	60%	1	0	100%	4	2	66.7%
	Losers	0	1	100%	2	4	66.6%	2	5	71.4%
July 1990–June 1991	Winners	0	3	0%	3	0	100%	3	3	50%
	Losers	0	3	100%	3	1	25%	3	4	57%
July 1991–June 1992	Winners	0	0	0%	4	2	66.7%	4	2	66.7%
	Losers	2	4	66.6%	0	1	100%	2	5	71.4%
July 1992–June 1993	Winners	1	1	50%	2	2	50%	3	3	50%
	Losers	1	3	75%	2	1	33.3%	3	4	57%
July 1993–June 1994	Winners	1	1	50%	2	2	50%	3	3	50%
	Losers	2	2	50%	1	2	66.6%	3	4	57%
July 1994–June 1995	Winners	1	1	33.3%	2	2	50%	3	3	50%
	Losers	0	3	100%	3	1	25%	3	4	57%
Combined results	Winners	10	14	41.7%	16	14	53.3%	26	28	48.1%
	Losers	10	20	66.6%	18	15	45%	28	35	55.5%

Table 9 Tests of persistence of unit trust performance over successive one-year intervals from July 1985 to June 1995 ranked on risk-adjusted returns

		High-variance			Low-variance			Total sample		
		Next year		Repeat	Next year		Repeat	Next year		Repeat
		Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers
Initial year										
July 1986–June 1987	Winners	1	3	25%	1	1	50%	2	4	33.3%
	Losers	0	2	100%	4	1	20%	4	3	42.8%
July 1987–June 1988	Winners	0	1	0%	4	1	80%	4	2	66.7%
	Losers	2	3	600%	0	2	100%	2	5	71.4%
July 1988–June 1989	Winners	1	1	50%	1	3	25%	2	4	33.3%
	Losers	3	1	25%	1	2	66.6%	4	3	75%
July 1989–June 1990	Winners	2	2	50%	1	1	50%	3	3	50%
	Losers	0	2	100%	3	2	40%	3	4	57%
July 1990–June 1991	Winners	1	1	50%	3	1	75%	4	2	66.7%
	Losers	0	4	100%	2	1	33.3%	2	5	71.4%
July 1991–June 1992	Winners	0	1	0%	3	2	60%	3	3	50%
	Losers	2	3	60%	1	1	50%	3	4	57%
July 1992–June 1993	Winners	1	1	50%	2	2	50%	3	4	50%
	Losers	1	3	75%	2	1	33.3%	3	3	50%
July 1993–June 1994	Winners	1	1	50%	1	3	25%	2	3	40%
	Losers	2	2	50%	2	1	33.3%	4	3	42.8%
July 1994–June 1995	Winners	1	2	33.3%	2	1	66.7%	3	3	50%
	Losers	1	2	66.6%	2	2	50%	3	4	57%
Combined results	Winners	8	13	38.1%	18	18	54.5%	27	28	49.1%
	Losers	11	23	67.6%	17	13	43.3%	28	34	54.8%

The overall conclusion is that results in the South African market are more or less similar to those obtained in a much bigger market, for example, in the USA. Some persistence in performance of unit trusts in the South African environment does exist, although this persistence is not statistically significant. The repeat winner phenomenon exists over two-year periods for nominal returns as well as for risk-adjusted returns. These results are basically identical to results obtained in the USA. The repeat winner phenomenon is much lower over one-year intervals on both total and risk-adjusted returns. The best results for persistence were obtained over four-year periods, when winner performance is defined as positive alphas. This result is different from those of studies in the USA, where it seems that the repeat

Table 10 Tests of persistence of unit trust performance over successive one-year intervals from July 1990 to June 1995 ranked on nominal returns

		High-variance			Low-variance			Total sample		
		Next year		Repeat	Next year		Repeat	Next year		Repeat
		Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers
Initial year										
July 1990–June 1991	Winners	3	2	60%	5	6	45.5%	8	9	47.1%
	Losers	2	9	81.8%	6	0	0%	8	9	52.9%
July 1991–June 1992	Winners	2	3	40%	5	6	45.5%	7	9	43.8%
	Losers	7	4	36.4%	2	4	66.6%	9	8	47.1%
July 1992–June 1993	Winners	5	4	55.6%	5	2	71.4%	10	6	62.5%
	Losers	4	3	42.8%	2	8	80%	6	11	64.7%
July 1993–June 1994	Winners	3	6	33.3%	4	3	57.1%	7	9	43.8%
	Losers	2	5	71.4%	7	3	30%	9	8	47.1%
Combined results	Winners	13	15	46.4%	19	17	52.8%	32	33	49.2%
	Losers	15	21	58%	17	15	46.9%	32	36	52.9%

Table 11 Tests of persistence of unit trust performance over successive one-year intervals from July 1990 to June 1995 ranked on risk-adjusted returns

		High-variance			Low-variance			Total sample		
		Next year		Repeat	Next year		Repeat	Next year		Repeat
		Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers	Winners	Losers	Winners/Losers
Initial year										
July 1990–June 1991	Winners	4	2	66.7%	6	4	60%	10	6	62.5%
	Losers	1	9	90%	5	2	28%	6	11	68.8%
July 1991–June 1992	Winners	2	3	40%	5	6	45.5%	7	9	43.8%
	Losers	6	2	45.5%	3	3	50%	9	8	47.1%
July 1992–June 1993	Winners	4	4	50%	5	3	62.5%	9	7	56.3%
	Losers	4	4	50%	3	6	66.6%	7	10	58.8%
July 1993–June 1994	Winners	5	3	62.5%	2	6	25%	7	9	43.8%
	Losers	4	4	50%	5	4	44.4%	9	8	47.1%
Combined results	Winners	15	12	55.6%	18	19	48.6%	33	31	51.6%
	Losers	15	22	59.5%	16	15	48.4%	31	37	53.4%

winner phenomenon is stronger over shorter periods of evaluation.

The repeat loser phenomenon existed over the one-year, two-year and four-year time periods and at much higher percentages for the one- and two-year periods than for the four-year period. These results showing a stronger loser phenemenon are similar to results obtained in the USA. The results which show that the loser phenomenon is stronger over the shorter evaluation periods and that the winner phenomenon is stronger over the longer evaluation periods is an interesting feature that needs further investigation.

There is very little difference between the results obtained on nominal returns and those obtained on risk-adjusted returns. These results are also similar to results obtained in the USA. Persistence in performance seems to exist and it appears to be a guide to beat the pack in the long run. At this stage, it seems that the longer the evaluation period, the better the results for the winner phenomenon.

Notes

1. The observer may miss this superior performance if only funds are examined. Hence, Shukla & Trzcinka also examined the best fund of the group and the average fund of the group. For both individual funds and fund groups, they found that inferior performance persists but superior performance does not.
2. I-Net is a company situated in Johannesburg which provides graphic and database services.

References

Bauman, W.S. & Miller, R.E. 1994. Can managed portfolio performance be predicted? *The Journal of Portfolio Management*, Summer: 31–39.

Brown, S.J., Goetzmann, W.N., Ibbotson, R.G. & Ross, S.A. 1992. Survivorship bias in performance studies, *Review of Financial Studies*, Dec: 553–580.

Brown, S.J. & Goetzmann, W. 1995. Performance persistence, *Journal of Finance*, 50: 679–698.

Elton, E.M., Gruber, M.J. & Blake, C.R. 1996. The persistence of risk-adjusted mutual fund performance, *Journal of Business*, 69(2): 133–157.

Elton, E.M., Gruber, M.J., Das, S. & Hlavka, M. 1993. Efficiency with costly information: a re-interpretation of evidence for managed portfolios, *The Review of Financial Studies*, 6(1): 1–22.

Garvin, T. 1995. A study of the relative performance of South African unit trust fund managers utilizing the portfolio change measure technique. Unpublished MCom dissertation. Cape Town: University of Cape Town.

Gilbertson, B.P. & Vermaak, C. 1982. The performance of South African mutual funds: 1974–1981, *The Investment Analysts Journal (S.A.)*, (2): 35–45.

Goetzmann, W.N. & Ibbotson, R.G. 1994. Do winners repeat? *The Journal of Portfolio Management*, Winter: 9–18.

Grinblatt, M. & Titman, S. 1988. *The evaluation of mutual fund performance: an analysis of monthly returns*. Working paper. Los Angeles: University of California.

Grinblatt, M. & Titman, S. 1987. The relationship between mean variance efficiency and arbitrage pricing, *Journal of Business*, 60(1): 97–112.

Grinblatt, M. & Titman, S. 1989a. Mutual fund performance: an analysis of quarterly portfolio holdings, *Journal of Business*, 62(3): 393–416.

Grinblatt, M. & Titman, S. 1989b. Portfolio performance evaluation: old issues, new insights, *Review of Financial Studies*, 2(3): 393–421.

Grinblatt, M. & Titman, S. 1992. The persistence of mutual fund performance, *The Journal of Finance*, 47(5): 1977–1984.

Grinblatt, M. & Titman, S. 1993. Performance measurement without benchmarks: an examinationof mutual fund returns, *Journal of Business*, 66(1): 47–68.

Grinblatt, M. & Titman, S. 1994. A study of monthly fund returns and performance evaluation techniques, *Journal of Financial and Quantitative Analysis*, 29(3): 419–444.

Hendricks, D., Patel, J. & Zeckhauser, R. 1993. Hot hands in mutual fund performance: short-run persistence in relative performance, 1974–1988, *Journal of Finance*, March: 93–130.

Ippolito, R.A. 1989. Efficiency with costly information: astudy of mutual fund performance, 1965–1984. *Quarterly Journal of Economics*, 104(1): 1–23.

Ippolito, R.A. 1992. Consumer reaction to measures of poor quality: evidence from the mutual fund industry. *Journal of Law and Economics*, (35): 45–70.

Jensen, M. 1968. The performance of mutual funds in the period 1945–64. *Journal of Finance*, 23(2): 389–416.

Lehmann, B. & Modest, D. 1987. Mutual fund performance evaluation: a comparison of benchmarks and benchmark comparisons. *Journal of Finance*, 42(2): 233–265.

Malkiel, B.G. 1995. Returns from investing in equity mutual funds 1971 to 1991. *Journal of Finance*, (2): 549–572.

Sharpe, W.F. 1966. Mutual fund performance. *Journal of Business*, 39(1): 119–138.

Sharpe, W.F. 1992. Asset allocation: management style and performance measurement. *Journal of Portfolio Management*, 18(1): 719.

Shukla, R. & Trzcinka, C. 1992. Performance measurement of managed portfolios. *Financial Markets, Institutions & Instruments*, 1(4): 159.

Treynor, J.L. 1965. How to rate management of investment funds, *Harvard Business Review*, 43(1): 63–75.

Appendix 1 Unit trusts

Period (July 1985–June 1995)	Period (July 1990–June 1995)
(13) Funds	(33) Funds
General equity funds (8)	**(16)**
GuardBank Growth	BOE Growth
Old Mutual Investors' Fund	CU Growth
Sage Fund	GuardBank Growth
Sanlam Index	Investec Equity
Sanlam Prime Growth	RMB Equity
Sanlam General	Marriott Equity
Standard Bank Mutual	Norwich
UAL Blue Chip Growth	Old Mutual Investors' Fund
	Sage Fund
	Sanlam Index
	Sanlam Prime Growth
	Sanlam General
	Southern Equity
	Standard Bank Mutual
	Syfrets Growth
	UAL Blue Chip Growth
Specialist equity funds (4)	**(11)**
Mining and Resources Funds (2)	*(6)*
Sanlam Mining & Resources	GuardBank Resources
UAL Mining & Resources	Old Mutual Mining
	Sage Resources
	Sanlam Mining & Resources
	Southern Mining
	UAL Mining & Resources
Gold Funds (1)	*(2)*
Standard Bank Gold	Old Mutual Gold
	Standard Bank Gold
Industrial Funds (1)	*(2)*
Sanlam Industrial	Old Mutual Industrial
	Sanlam Industrial
Other Specialist Equity Funds	*(1)*
	UAL Selected Opportunities
High income funds (1)	**(4)**
Standard Bank Extra Income	GuardBank Income
	Old Mutual Income
	Standard Bank Extra Income
	Syfrets Income
Gilt funds	**(2)**
	Investec Gilt
	UAL Gilt