PERSISTENCE IN NEW ZEALAND GROWTH MUTUAL FUNDS RETURNS:
An Examination of New Zealand Mutual Funds from 1997-2003

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Abstract

There has been a lot of research on mutual funds performance, especially about the persistence of excess returns. Regression is the most common method used to research this fund persistence. In this study, authors use the same methodology as Dutta and Su (2008) to analyze New Zealand growth mutual funds. The sample consists of 42 New Zealand growth mutual funds over the period 1996 to 2003. Morgan Stanley Capital International world index (MSCI) was chosen as the study benchmark. The study finds that the sample of funds are likely to beat benchmark when world index get negative return and when MSCI shows positive return, most funds underperform the benchmark.

I. INTRODUCTION

There have been many debates about mutual fund performance – especially about the persistence of excess returns. The debate can be divided into two parts: on one hand, those like Carhart (1997), point out that mutual fund performance does not persist, except in the very short term; on the other hand, those like Gruber (1996) believe that performance does persist such that past performance can be a predictor of future performance.

Dutta & Su (2008) finds that the prior tests on performance of samples of mutual funds typically concentrate on common stock mutual funds. In measuring performance, studies control for the differences in objectives and assets held by the funds with control variables in the model (Gruber (1996), Carhart (1997)).

Thus, research on persistence in performance has examined samples of mutual funds in various ways. Among the studies on performance of mutual funds, most studies

control for differences in objectives by including appropriate control variables in the regression analysis. The tests are made more robust by using conditional performance evaluation and including net cash flow on a sector-wide basis (Ferson and Warther (1996), Gruber (1996) and Tiwari and Vijh (2001)).

Malkiel (1995) says that since persistence of excess returns can only be tested with a sample that includes funds that have existed in both the base and the following period, the sample characteristics must necessarily be influenced by survivorship. Dutta & Su (2008) propose a comparably simpler approach – a direct annual examination of whether a fund beat the market proxy or not.

This simpler method is also used in this study. The performance and the persistence of mutual fund performance are determined by whether a fund outperforms or underperforms a chosen market benchmark on an annual basis. In this study, firms in the sample have their stated investment objective as New Zealand growth mutual funds and the study period is from 1996 to 2003.

The paper is presented as follows: previous studies of performance persistence are reviewed in section II; section III is data and methodology; Section IV presents the results of this study and Section V concludes the paper.

II. PREVIOUS STUDIES OF PERFORMANCE PERSISTENCE

Carhart (1997) determines that the performance of mutual funds does not persist in the long term. His study supports Hendricks, Patel and Zeckhauser's (1993) results of a short-term persistence in stock returns. Carhart also finds persistence in poor performance by the lowest decile of fund performers.

Agarwal & Naik (2000) find only a maximum persistence at a quarterly horizon indicating that persistence among hedge funds is short-term in nature. They also point out that there is no evidence of persistence using yearly returns under the multi-period framework.

Casarin (2002) finds, with multi-periods persistence analysis, (i) absence of long-run excess persistence on total returns and on risk adjusted returns; (ii) evidence of a "hot-hand"(positive performance always followed by positive performance, winning following by winning) effect on risk adjusted returns on four-month intervals (short run persistence).

Otten & Bams (2000) believe that the search for a "hot hands" effect provided only weak evidence of persistence in mutual fund performance, except for UK funds.

Lynch & Musto (2000) find that past returns contain less information useful to the future performance of funds and fund flows are less sensitive to past returns when past returns are lower.

Tiwari and Vijh (2001) analyze the performance of 607 actively managed stock sector funds listed on the CRSP survivor-bias free US mutual fund database during 1990-2000; they did not find evidence of excess persistence in sector fund performance.

Warther (1995) finds that the aggregate security returns are highly correlated only with the unexpected cash flows into mutual funds. The author also finds a positive

relation exists between cash flows and subsequent returns, and a negative relation between returns and subsequent cash flows.

Ferson and Schadt (1996) and Ferson and Warther (1996) incorporate lagged market-indicator variables as explanatory variables to perform conditional performance evaluation. These studies conclude that prior studies may have inferred spurious inferior performance. Modigliani and Modigliani (1997) makes a case for viewing performance on a risk- adjusted basis, a factor also taken into account by Elton, Gruber and Blake (1996).

Kosowski, White and Wermers (2003) believe that there is strong evidence of persistence when they examine the subgroup of aggressive-growth funds.

Gruber (1996) states that, on average, actively managed funds reveal negative performance. The author presents empirical evidence to support persistence in mutual fund performance and that investors chase past performance. Further, the paper also determines that new cash flows underperform. This result may be explained by the existence of two clienteles, only one of which consists of sophisticated, informed investors.

Grinblatt and Titman (1992), Goetzmann and Ibbotson (1994), and Hendricks, Patel, and Zeckhauser (1993), present strong evidence in favor of a "hot hand" phenomenon, that is, mutual funds that achieved above average returns continue to enjoy superior performance.

Malkiel (1995) presents two important findings for a sample of equity mutual funds examined from 1971-1991: in the aggregate, funds underperformed the market, with the S&P 500 as the benchmark and significant survivorship bias exists, which may be leading to erroneous finds of performance persistence. Malkiel (1995) states that no investor is interested in the records of funds that no longer exist. Funds with high returns will tend to persist, since funds whose bets were unsuccessful will tend to drop out of the sample.

Dutta and Su (2008) find that for their sample of U.S. growth mutual funds in years when the market benchmark, with S&P 500 as the benchmark, earns a high return, the losers (underperformers) in that year seem more likely to repeat their poor performance the following year. Also, winners are less likely to repeat their performance in years following high market returns. In this paper, Dutta and Su (2008), the sample period is 1988 to 1996. Firms in the sample have their stated investment objective as growth equity. The author also says that persistence in positive performance outweighs persistence in negative performance.

With regard to all the previous studies, most of them use regression analysis to determine performance and reports on performance persistence offer conflicting findings. Malkiel (1995) argues that the persistence of mutual funds can only be tested with a sample that includes funds that have existed in both the base and the following period, the sample characteristics must necessarily be influenced by survivorship.

III. DATA & METHODOLOGY

The method of this study comes from "Persistence in mutual fund returns revisited: An examination of growth mutual funds from 1988-1996" by Dutta and Su (2008). To examine performance persistence of New Zealand growth mutual funds, the same methodology is utilized and the same kind of data is chosen in this study.

The data used in the study are all available New Zealand growth mutual funds return data from Fund Source (Fund Source is one of the two main research houses in New Zealand, the other being Morning Star) over the period November 1996 to November 2003. Three growth mutual fund sections are chosen: Diversified Growth Unit Trust & Gif's; Diversified Growth Superannuation Funds; and Diversified Growth Ins. Bonds. The details of funds are available on Table 1A, Table 1 B and Table 1C. The sample consists of 42 mutual funds over the 7 years study, there were 25 funds available in 1996, and then the number grew gradually to 42 in 2002. During the 7 years period, none of the initial funds dropped out.

Table 1 A
Diversified Growth unit Trust & Gif's Performance %

	96-97	97-98	98-99	99-2000	2000-01	2001-2002	2002-2003
AMP Dynamic trust	8.39	11.86	13.15	4.36	-7.88	-17.83	2.97
ANZ Long term growth fund						-11.83	2.87
BT NZ - Managed growth		6.48	9.84	7.46	-1.46	-9.09	4.19
Fisher Funds Fledgling Fund					-1.97	-6.04	4.2
Public Trust Capital Growth fund	7.12	7.98	9.45	2.7	-1.93	-6.04	3.94
Public Trust Growth Priority Fund		6.2	11.63	2.53	-2.58	-7.52	4.11
SBS Growth Fund				2.5	1.27	-8.27	3.68
Thoroughbred Growth Trust	4.76	7.95	11.47	5.81	-7.19	-12.57	5.21
Westpac Growth Trust	6.61	8.51	9.43	4.87	-6.45	-16.37	1.72

Table 1 B
Diversified Growth Superannuation Fund Performance %

	1997	1998	1999	2000	2001	2002	2003
AMP Pers Super performance	6.52	7.77	15.05	3.3	-9.33	-14.91	8.19
AMP PRP Dynamic	6.82	11.55	12.8	4.83	-7.72	-17.28	3.03
ANZ Retirement Plan Growth	6.58	6.74	7.97	4.85	-2	-6.38	3.79
ASB Easyplan Growth			16.2	6.21	-9.09	-12.96	4
Asteron Retirement Plus aggressive		18.38	21.12	4.1	-8.37	-4.84	14.69
Asteron RSP Mgd Growth	7.24	8.93	8.7	4.38	-2.53	-5.52	6.78
Asteron SP2000 Dynamic	7	4.54	8.95	2.47	-2.26	-6.61	5.97
Asteron Superplan Aggressive					-3	-4.43	14.89
Asteron Superplan Dynamic	6.31	4.07	8.45	1.84	-3.23	-7.78	5.3
AXA Goldline Invest-Aggressive	6.02	2.71	8.44	4.62	-5.39	-10.03	5.04
AXA Goldline Super-Aggressive	6.02	2.71	8.45	4.61	-5.39	-10.03	5.05
BNZ Future Lifestyle-Dynamic Growth		11.1	13.27	4.88	-3.84	-11.46	2.22
BT Ltp Mgd Growth Fund	5.94	5.22	10.11	7.18	-1.56	-9.34	4.89
Colomial Masterpac-Dynamic Growth		10.07	16.51	6.38	-11.61	-14.27	2.33
Colonial Masterpac-mgd Growth		9.3	7.18	6.09	2.3	-7.99	2.4
Colonial vision Entrepreneurial	6.84	3.42	9.61	6.77	-3.17	-8.85	2.37
Sovereign Super High Growth fund	6.06	7.86	15.89	5.71	-3.78	-9.55	3.73
Sovereign Super Max Growth	7.38	5.34	22.46	4.73	-5.08	-11.9	3.38
Thoroughbred Growth Flexible		12.64	18.15	3.98	-9.5	-9.83	4.1
Thoroughbred Growth Locked-in		11.85	16	3.95	-9.22	-9.63	4.17
Tower Freedomplan Growth fund	8.87	9.38	7.28	4.16	-5.45	-12.18	5.11
Tower Futureplan Growth Fund	8.87	9.38	7.28	4.16	-5.45	-12.18	5.11
Tower IP Growth Fund					-5.45	-12.18	5.11
Westpac Retire Plan Dynamic Fund	6.64	8.28	8.19	7.21	-8.54	-15.34	1.64

Table 1 C
Diversified Growth Ins.Bonds Performance %

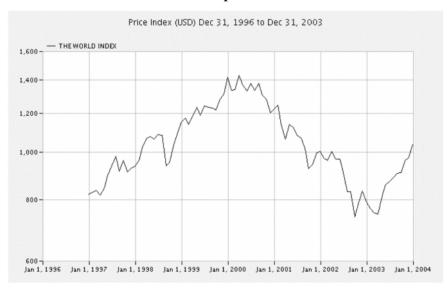|	1997	1998	1999	2000	2001	2002	2003
AMP Dynamic Bond	8.32	12.49	21.23	4.42	-7.77	-17.79	3.09
ANZ Ascent Growth Fund						-12.54	10.83
Asteron Lifeplan/Go Kidz Dynamic	6.31	4.07	17.01	1.84	-3.23	-7.78	3.62
Asteron Saverguard plus Aggressive		18.38	12.89	4.1	-8.37	-4.84	14.69
Asteron Wise Aggressive		22.86	9.5	4.78	-10.5	-5.61	14.05
AXA Zenith Mgd Portfolio	5.21	2.46	21.12	4.83	-5.44	-10.49	5.01
Colonial Stag Fund	3.65	6.05	21.51	6.59	-3.3	-8.86	2.18
Sovereign High Growth Fund	7.02	6.01	8.45	5.29	-3.77	-9.13	3.35
Sovereign Max Groth	5.34	5.8	7.5	5.65	-5.88	-11.93	4.52

Morgan Stanley Capital International World Index (MSCI) simple annual return is chosen as the benchmark, not S&P 500 that was chosen in many prior studies. In the allocation of New Zealand growth mutual funds, international equity gets a heavy weight, about 50% or more. Also, S&P 500 index is comprised of 500 shares of U.S. firms which cannot fully represent the global equity market. For the above reasons, MSCI is the most appropriate benchmark to be chosen in the study. The performance of MSCI is shown in Table 2 and Graph 1.

Table 2

	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
MSCI	12.9 %	18.5 %	19.9 %	- 8.6 %	- 17.1 %	- 16.5 %	15.6 %

MSCI Index performance as of November 2003

Graph 1

The performance of MSCI world index from December 1996 to December 2003. The above date is provided by Morgan Stanley Capital International Ltd.

The returns of New Zealand growth mutual funds are based on their annual performance; each return is calculated with fund prices from November to November each year. To determine performance, a fund is designated as a winner in a year it outperforms and as a loser if it underperforms the benchmark – the MSCI index.

IV. RESULTS

Table 3 presents the annual return and standard deviation statistics for the sample, as well as the number of New Zealand growth mutual funds with data available in each year since November 1996 to November 2003. As Table 3 shows, there was steady growth in the number of funds with return data available. Among the total 42 funds, 25 are initial funds that existed in 1996; the other 17 funds were established between 1997 and 2003. Since the funds were established, none of them dropped out during the 7-year period.

Table 3
Annual Statistics of Growth Funds: Nov.1996- Nov.2003

Year	Mean %	Std. Dev. %	N
1996-97	6.64	1.21	25
1997-98	8.51	4.59	35
1998-99	12.51	4.81	36
1999-00	4.69	1.47	37
2000-01	-5.11	3.19	40
2001-02	-10.24	3.63	42
2002-03	5.18	3.52	42

Given above are the annual mean returns and standard deviations for a sample of 42 New Zealand growth mutual funds during 1996 to 2003.

Table 4 examines performance and compares the mean annual return between the two sub-samples designated as underperformers and outperformers. The MSCI world index is chosen as benchmark to be compared with. During the 7- year period, only in 3 years, both underperforming and outperforming funds exist - 1998, 1999 and 2002. In 1997 and 2003, all the funds were underperformers; while all funds outperformed the market in 2000 and 2001.

Table 4
Annual Statistics for Funds Based on Comparison with Msci World Index

Year	Underperformance			Outperformance		
	Mean	Std Dev	N	Mean	Std Dev	N
1997	6.64	1.21	25			
1998	8.1	3.91	34	22.8		1
1999	11.12	3.39	31	21.49	0.56	5
2000				4.69	1.47	37
2001				-5.11	3.19	40
2002	-17.6	0.31	3	-9.66	3.09	39
2003	5.18	3.52	42			

Given above are statistics for the sample of New Zealand growth mutual funds, based on whether the fund managed to beat the simple annual MSCI Index return.

Compared with prior studies, this sample of New Zealand growth mutual funds appear to present an unique result: when world index- MSCI- performed well (positive return), all or most of funds underperformed, in 1997, 1998, 1999 and 2003; while when MSCI benchmark showed negative return in 2000, 2001 and 2002, 92% to 100% New Zealand funds outperformed the benchmark. The difference between group performances is 14.7% (1998), 10.37% (1999) and 7.94% (2002). In the three years, the difference in mean returns between these two groups is significant, not only from casual observation but also statistically.

Table 5 presents a view of one- year persistence in both underperformance and outperformance from1996 to 2003. In the 7- year term, the percentage of repeat winners and losers are very similar. In the initial year –1997, all the 25 funds underperformed the MSCI. The following year 1998 and final year 2003, all of the losers were losers the previous year (so repeat losers). In 1999, 85% of losers were losers in previous year. In 2000-2001, outperforming funds were the same as previous years (repeat winners); while there was no loser that was from previous year. So in 2000 and 2001, 100% of winners continued the performance from previous year. In 2002, 97% winners were winners in 2001 - the other 3% (1 fund) was new to the market.

When winners appear as a high percentage of performance persistence, the percentage of losers' persistence is Zero; the same situation also happened to winners, when the losers showed a high percentage of performance persistence. In 1998, 1999 and 2003, none of the winners repeats the performance from previous year. During 2000 to 2002, none of the losers is a loser in previous year. Thus, Table 5 demonstrates that neither winners nor losers continue outperforming or underperforming benchmark during the study period.

The other finding from Table 5 is when the global market performs well, for example 1998, 1999 and 2003, New Zealand growth mutual funds persist with a high percentage of loss. In the three well-performing years, MSCI gets individual returns of 18.5%, 19.9% and 15.55%. While from 2000 to 2002, world capital market continues having negative returns as –8.56%, -17.05% and –16.47%, none of the losers repeats their performance from its previous year. The result supports Dutta and Su (2008) that in the year when market benchmark earns a high return, the losers in that year seem more likely to repeat their poor performance the following year; also the winners are less like to repeat their performance in years following high market returns.

The difference between Dutta and Su (2008) and this study is that Dutta and Su (2008) and Malkiel (1995) both believe that "hot hands" (winning following by winning) occur much often than "cold hands" (losing followed by losing) and persistence in positive performance outweighs persistence in negative performance. This research finds that "hot hands" performance has similar percentage to "cold hands" performance during the study period.

In this study, neither winner nor loser continues repeating its performance during the 7-year study period. In other words, the result of the study supports Hendricks, Patel and Zeckhauser (1993), Carhart (1997) and Agarwal & Naik (2000) that the performance of New Zealand mutual funds indicates there is only short-term persistence in stock returns.

Table 5
Persistence of Fund Performance: Nov. 1996- Nov.2003

Year			Repeat		Per cent Repeat	
	Winner	Loser	Winner	Loser	Winner	Loser
1996-97		25				
1997-98	1	34		25		100%
1998-99	5	31		29		85%
1999-00	37		5		100%	
2000-01	40		37		100%	
2001-02	39	3	38	3	97%	
2002-03		42		3		100%

The results can be explained thus: nearly all the losers in really good years are likely to repeat their performance; and the winners in really poor years are likely to continue their winning performance. There is no evidence to indicate that the persistence of New Zealand growth mutual funds performance lasts in long term during the study period. There is similar percentage between persistence of winner and persistence of losers.

Table 6 divides the sample into two sub-samples based on survivorship. Table 6 A presents statistics for the 25 growth mutual funds that existed for the entire 7 years of the study period. Table 6 B presents similar statistics for the other 17 funds that have between one year and six years of data available.

Table 6 A
25 New Zealand Growth Mutual Funds with Return Data for
Each Year, 1996 -2003

Year	Mean	Std Dev.	Min	Max
1997	6.63	1.21	3.65	8.87
1998	6.84	2.87	2.46	12.49
1999	11.99	5.03	7.28	22.46
2000	4.68	1.47	1.84	7.21
2001	-4.94	2.25	-9.33	-1.56
2002	-11.06	3.75	-17.83	-5.52
2003	4.19	1.56	1.64	8.19

Table 6 B
New Zealand Growth Mutual Funds without Return Data for
Each Year, 1996-2003

Year	Number	Mean	Std. Dev.	Min	Max
1997	0	0	0	0	0
1998	10	12.72	5.48	6.2	22.86
1999	11	13.84	4.17	7.18	21.12
2000	12	4.74	1.53	2.5	7.46
2001	15	-5.42	4.42	-11.61	2.3
2002	17	-9.02	3.16	-14.27	-4.43
2003	17	6.62	4.93	2.22	14.89

The difference of means between the two groups is not statistically significant in each year from 1998 to 2003, with the lowest being –0.48% (2001) to the highest being 5.08% (1998). This differs from the findings of Dutta and Su (2008) and Malkiel (1995). Malkiel (1995) states that funds that underperformed frequently were unlikely to survive; hence the surviving firms would show biased performance, as well as persistence. Dutta and Su (2008) find that their sample supports Malkiel (1995), in that the later entrants in the growth fund category as a group seem to have significantly underperformed the survivor group. Taking the assumption of Dutta and Su (2008), all funds in Table 6A exist for the entire study period, and are the survivor base; the rest of funds in Table 6B did not exist in 1997, they have data only available between 1998 and 2003, they are regarded as non-survivor group and should underperform the survivor base – but that is not found to be the case.

In the study period, the number of growth mutual funds increased steadily (Table 3). Since each fund was established, none of them dropped out of the sample. In Table 6 B, none of the 17 non-surviving funds were in existence in 1996. Even though the 25 initial funds survive during the entire 7 years, the other 17 funds have higher returns in 5 of 6 years. Thus, survivorship bias does not help to explain New Zealand growth mutual funds performance during 1996 to 2003.

Table 7

	96-97	97-98	98-99	99-2000	2000-01	2001-02	2002-03
AMP Dynamic trust	8.39	11.86	13.15	4.36	-7.88	-17.83	2.97
Public Trust Capital Growth fund	7.12	7.98	9.45	2.7	-1.93	-6.04	3.94
Thoroughbred Growth Trust	4.76	7.95	11.47	5.81	-7.19	-12.57	5.21
Westpac Growth Trust	6.61	8.51	9.43	4.87	-6.45	-16.37	1.72
AMP Pers Super performance	6.52	7.77	15.05	3.30	-9.33	-14.91	8.19
AMP PRP Dynamic	6.82	11.55	12.8	4.83	-7.72	-17.28	3.03
ANZ Retirement Plan Growth	6.58	6.74	7.97	4.85	-2.00	-6.38	3.79
Asteron RSP Mgd Growth	7.24	8.93	8.7	4.38	-2.53	-5.52	6.78
Asteron SP2000 Dynamic	7.00	4.54	8.95	2.47	-2.26	-6.61	5.97
Asteron Superplan Dynamic	6.31	4.07	8.45	1.84	-3.23	-7.78	5.30
AXA Goldline Invest-Aggressive	6.02	2.71	8.44	4.62	-5.39	-10.03	5.04
AXA Goldline Super-Aggressive	6.02	2.71	8.45	4.61	-5.39	-10.03	5.05
BT Ltp Mgd Growth Fund	5.94	5.22	10.11	7.18	-1.56	-9.34	4.89
Colonial vision Entrepreneurial	6.84	3.42	9.61	6.77	-3.17	-8.85	2.37
Sovereign Super High Growth fund	6.06	7.86	15.89	5.71	-3.78	-9.55	3.73
Sovereign Super Max Growth	7.38	5.34	22.46	4.73	-5.08	-11.9	3.38
Tower Freedomplan Growth fund	8.87	9.38	7.28	4.16	-5.45	-12.18	5.11
Tower Futureplan Growth Fund	8.87	9.38	7.28	4.16	-5.45	-12.18	5.11
Westpac Retire Plan Dynamic Fund	6.64	8.28	8.19	7.21	-8.54	-15.34	1.64
AMP Dynamic Bond	8.32	12.49	21.23	4.42	-7.77	-17.79	3.09
Asteron Lifeplan/Go Kidz Dynamic	6.31	4.07	17.01	1.84	-3.23	-7.78	3.62
AXA Zenith Mgd Portfolio	5.21	2.46	21.12	4.83	-5.44	-10.49	5.01
Colonial Stag Fund	3.65	6.05	21.51	6.59	-3.3	-8.86	2.18
Sovereign High Growth Fund	7.02	6.01	8.45	5.29	-3.77	-9.13	3.35
Sovereign Max Growth	5.34	5.80	7.50	5.65	-5.88	-11.93	4.52
Average	6.63	6.84	11.99	4.68	-4.94	-11.06	4.19

Though most of New Zealand mutual funds have about 50% or more allocation on international equity market, their returns are far from matching the Morgan Stanley Capital International Index returns during the study period. Grinblatt and Titman (1992), Goetzmann and Ibbotson (1994) and Hendricks, Patel, and Zeckhauser (1993) present strong evidence that mutual funds that achieve above average returns continue to enjoy superior performance. To examine the above finding, Table 7 includes all the 25 initial funds that exist during the 7-year study period. Among the 25 funds, none has been either underperforming or outperforming the average return from 1996 to 2003.

Dutta and Su (2008) find that 2.15% of initial funds had managed to achieve 100% winning performance during the study period. In this study, none of the 25 initial mutual funds continues their winning streak or losing streak during 1996 to 2003 comparing with either MSCI or average return. So the percentage of those funds which repeatedly won or lost each year during the study period is zero. This result is less than expected assuming that mutual fund performance is a random occurrence.

V. CONCLUSION

Many earlier studies have analyzed the persistence of mutual funds performance; and much debate has ensued due to the differences in results. Most of these studies control for difference in objectives by including appropriate control variables in the regression analysis. Also, these tests are made more robust by using conditional performance evaluation [Ferson and Warther (1996), Gruber (1996)].

Malkiel (1995) suggests that survivorship bias may help to explain the persistence of mutual fund performance. Dutta and Su (2008) adopt a simpler and more direct methodology to exam the persistence of mutual fund performance. This study examines the returns on a sample of New Zealand growth mutual funds over the period 1996-2003 with the same methodology as Dutta and Su (2008). The sample is examined on an annual basis to identify winners and losers. The determination of winning or losing is based on a fund outperforming/ underperforming a market benchmark. The Morgan Stanley Capital International world index (MSCI) is chosen as the benchmark.

For the sample examined over the period 1996 to 2003, there is steady growth in number of mutual funds with return data available. Since funds were established, none of them dropped out during the study period.

In years 1997 and 2003, all funds underperformed the benchmark- MSCI; while in 2000 and 2001, all funds outperformed MSCI. The sample of funds beats the benchmark when world index shows negative return; and, when MSCI shows positive return, this sample finds that most funds are likely to perform more poorly than benchmark.

During the study period, when the benchmark earns a high return, nearly all losers (underperformers) in that year seem more likely to repeat their poor performance the following year. Also, the winners are less likely to repeat their performance in years following high market returns. Another finding is that there is no evidence to indicate that the persistence of New Zealand growth mutual funds performance lasted for the long term 1996 to 2003. Also in the short-term, the persistence in positive performance has similar percentage to persistence in negative performance.

While survivorship bias is acknowledged, using both MSCI and average return, the 25 initial funds that had existed during the entire 7-year study period, this study finds none achieves either a 100% winning or losing streak. This means that 0 out of 25 funds has winning or losing streak during the continuous 7-year period. The percentage of funds that have continuous winning or losing streak record is less than would be expected assuming that mutual fund performance is a random occurrence.

However, given a change in future market dynamics, an increased number of funds, a different benchmark, or a different study period, the results may change accordingly. Given varying scenarios on the New Zealand mutual fund market, this past study may not carry over into the future.

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