

Persistence in Mutual Fund Returns: Evidence from China

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Abstract

This paper aims to investigate the persistence of Chinese mutual funds performance. A simple approach developed by Dutta and Su (2008) – a direct annual examination of whether a fund beat the market proxy or not – has been used in this study. The sample consists of 42 mutual funds over the period from 2002 to 2009; the Weighted Chinese Shanghai and Shenzhen A-share stock market index has been developed as the benchmark. This study finds winners like to repeat their performance in negative market returns; while losers in really good years, on average, are more likely to repeat their performance. There is no evidence to show any long term persistence existing in Chinese mutual fund market during 2003 to 2009.

Key Words: Chinese mutual funds, performance persistence, winners and losers, outperformance, underperformance

JEL Classification: G1, G15

1. Introduction

The debate of mutual fund performance persistence is ongoing. In general, the debate can be divided into two campaigns: mutual fund performance does persist such that past performance can be indicator of future performance; and there is no mutual fund performance persistence, except for the very short term. Research on mutual fund performance persistence has been examined in different ways. The most popular and common method being used is regression; some studies use conditional performance evaluation and including net cash flow on a sector-wider basis, which may be more robust (Gruber, 1996; Ferson and Warther, 1996).

Mutual fund persistence can only be examined with a sample that includes funds which existed in the base and the following period; the sample characteristics must necessarily be influenced by survivorship (Malkiel, 1995). Dutta and Su (2008) propose a comparably simpler approach – a direct annual examination of whether a fund beat the market proxy or not. The performance persistence of mutual funds is determined by whether a fund outperforms or underperforms a chosen benchmark on an annual basis. In this paper, this method is also used to investigate the persistence of Chinese mutual funds performance; the study period is from 2002 to 2009.

The following part of this paper is organized as follows: the next section presents the previous literature review; section 3 provides the details of data and methodology; section 4 presents the findings and the final section concludes this paper.

2. Literature review

From empirical evidence, many investors try to predict mutual fund future return from current and past historic performance; however, mutual fund return persistence has been debated for many years. Some believe that mutual fund performance does not persist (Agarwal and Naik, 2000; Casarin, 2002; and Carhart, 1997); the others like Gruber (1996), Grinblatt and Titman (1992), Goetzmann and Ibbotson (1994) and Hendricks, Patel and Zeckhauser (1993) believe performance persistence does exist and can be a predictor of future performance.

There is no strong evidence of mutual funds performance in US from 1988 to 1996, only 4 out of 186 mutual funds achieved a nine-year winning performance (Dutta and Su, 2008). Furthermore, Dutta, Su and Xu (2010) did not find evidence to indicate persistence of New Zealand growth mutual funds performance between 1996 and 2003. China has become a fast developing country with its financial market performance being the focus of many domestic and international scholars. However, there are not many articles relevant to Chinese mutual funds performance persistence (Li and Fang, 2005).

Zhou and Shi (2004) studied 16 first open-ended Chinese mutual funds and pointed out there is not performance persistence occurring. Furthermore, Li (2005), Liu and Li (2006), Xiao and Ning (2005) and Li, Wu and Tang (2004) believe there is no persistence in Chinese mutual funds performance. Xiao and Yang (2005) point out there is no strong evidence to show Chinese mutual fund persistence; those funds only repeat winning in short-term. Chinese mutual funds only have short-term persistence in performance (Li, Chen and Mao, 2007; Luo, Wang and Tian, 2003). In contrast, Wu and Fang (2004), Wang and Yuan (2006) believe performance persistence does exist in Chinese mutual funds; investors may make investment decisions based on this phenomenon.

Previous research on persistence in Chinese mutual funds performance has examined samples in the regression analysis only and reports on performance persistence offer conflicting findings. We would like to use the simple method by Dutta and Su (2008) to examine Chinese mutual fund performance between 2002 and 2009.

3. Data and Methodology

The data used in this study are all available Chinese mutual funds return data from GUO TAI JUN AN mutual fund database over the period July 2002 to June 2009. Prior to 2002, there were only a limited number of mutual funds in Chinese markets due to the new developing Chinese emerging market history.

The final sample consists of 42 mutual funds over the seven year study period; all these 42 funds have performance data for at least five years. During the seven year term, there were nine funds available in 2002, and then the number gradually grew to 42 between 2005 and 2008; however, the number declined rapidly in 2009, only 28 funds survived. There are only five funds which existed through the whole seven year study period. The details of selected Chinese mutual funds are available on following tables.

Table 1A Balance fund annual performance %

Name	02-03	03-04	04-05	05-06	06-07	07-08	08-09
Hua An Innovations Fund	-5.25%	3.78%	0.86%	65.54%	137.73%	-11.73%	5.03%
Bosera Value Appreciation Fund		5.89%	-11.86%	57.57%	150.99%	-14.00%	10.95%
DaCheng Value Growth Fund		9.80%	-1.60%	65.70%	136.85%	-10.93%	18.78%
Full Goal TianYi Value			16.59%	85.57%	151.03%	-6.42%	6.56%
Baoying Hongli Income		2.57%	-11.25%	81.01%	126.11%	-11.15%	-7.11%
Gold Eagle Composition Selected Fund		0.79%	-14.59%	42.37%	128.44%	-10.98%	5.81%
Fortis Haitong Best Selection			3.97%	68.76%	139.41%	-15.49%	12.05%
Invesco Great Wall Domestic Demand Gr			3.61%	96.52%	139.35%	-18.71%	21.60%
GF Jufu Fund			13.14%	91.00%	132.43%	-14.10%	9.47%

Table 1B Growth funds annual performance %

Name	02-03	03-04	04-05	05-06	06-07	07-08	08-09
Guotai Jinlong Sector Select			3.37%	63.28%	142.57%	-15.67%	15.47%
Guotai Jinying Growth	-9.83%	12.38%	1.43%	73.37%	118.58%	-9.44%	24.61%
Nzhen Development Bank Co.,Ltd.	-6.28%	7.42%	-6.33%	66.64%	144.77%	0.12%	16.31%
Bosera Thematic Sectors Eq (LOF)				59.24%	169.39%	-3.68%	16.56%
Penghua Sector Growth	-5.18%	-1.47%	-2.81%	72.53%	129.82%	-13.75%	21.39%
E Fund Strategic Growth			16.67%	87.78%	166.30%	-14.70%	18.30%
Rongtong Blue Chip Growth		0.00%	-9.79%	73.82%	83.96%	-13.10%	19.86%
Rongtong Sector Growth		0.00%	-12.97%	65.09%	116.58%	-14.39%	15.82%
CMF Antai-Equity		11.08%	-2.61%	60.09%	125.43%	-84.90%	65.70%
Fortune SGAM Baokang Consumption		90.90%	7.01%	56.08%	-15.15%	-4.26%	23.94%
Invesco Great Wall Selected Equity			8.45%	62.56%	125.73%	-15.83%	6.29%
Invesco Great Wall DingYi (LOF)				74.61%	150.08%	-8.78%	8.86%
GF Small-cap Growth (LOF)				120.97%	108.57%	-15.38%	13.08%
E&P Quantitative Core			15.21%	58.29%	-6.46%	-19.34%	57.80%
Fortune SGAM Multi-Strategy Growth			-7.59%	54.83%	145.23%	3.68%	15.95%
Huatai-pb Prosperous China Equity				56.65%	144.02%	14.16%	14.40%
CSFMC Stable Growth	-2.03%	11.07%	-0.33%	66.73%	124.71%	-14.47%	-0.55%

Table 1C Index funds annual performance %

Name	02-03	03-04	04-05	05-06	06-07	07-08	08-09
Bosera Yufu CSI 300 Index		-14.55%	58.58%	135.66%	-24.80%	13.09%	
E Fund SSE50 Index Enhanced		-9.04%	52.88%	162.82%	18.03%	-21.17%	
Rongtong SSE 100 Index		-16.99%	76.02%	154.05%	-23.66%	19.62%	
Rongtong CNINFO 100 Index (LOF)			59.76%	130.29%	-24.09%	12.67%	
Yinhua Dow Jones China 88 Select Equity			93.95%	138.99%	9.18%	-15.16%	
Wanjia 180 Index Fund	-3.57%	13.24%	58.00%	173.32%	-20.94%	12.24%	
China Vanke Co., Ltd.			74.69%	164.95%	-26.24%	13.77%	
50ETF			49.99%	162.51%	-22.70%	10.73%	

Table 1D Small & Mid Cap funds annual performance %

Name	02-03	03-04	04-05	05-06	06-07	07-08	08-09
Gold Eagle Small & Mid Cap		-16.00%	84.11%	49.25%	-16.54%	38.88%	
MANULIFE TEDA Sector Select		-2.52%	81.07%	139.05%	-8.92%	22.99%	
Morgan Stanley Huaxin Basic Ind		-6.99%	41.14%	109.31%	-2.66%	-37.88%	

Table 1E Selective funds performance %

Name	02-03	03-04	04-05	05-06	06-07	07-08	08-09
MANULIFE TEDA Growth	11.30%	22.70%	70.57%	93.39%	-2.25%	15.18%	
MANULIFE TEDA Cyclical	9.73%	3.66%	74.66%	98.63%	-5.28%	21.09%	
MANULIFE TEDA Stability	50.50%	6.33%	64.24%	103.22%	-15.35%	8.93%	
Bosera Select Equity			-5.13%	59.35%	146.35%	-111.09%	-97.31%
Penghua Putian Income Equity		13.46%	-40.10%	76.15%	21.92%	-15.42%	18.48%

The Weighted Chinese Shanghai and Shenzhen A-share stock market index has been developed as the benchmark for this study. These two Chinese A-share indices together present those Chinese listed companies in the Shanghai Stock-exchange and Shenzhen Stock-exchange. As such, the weighted A-share index will represent fully the whole Chinese market. The performance of the Weighted Chinese stock index is shown in Table 2.

Table 2 The Weighted Chinese Shanghai & Shenzhen A-share Index (WCSSAI)

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
WCSSAI	-16.49%	-9.19%	-18.88%	115.09%	227.19%	-11.04%	37.14%

The returns of Chinese mutual funds are based on their annual performance; each fund return is calculated with the fund price from July to next June. When a fund in any one year outperforms the market benchmark, that is the WCSSAI, it becomes a winner; if it underperforms the benchmark, it becomes a loser.

4. Results

Table 3 presents the number of mutual funds with data available between 2002 and 2009, as well as the annual return and standard deviation statistics for the sample. For example between July 2007 and June 2008, the average return of those 42 funds is -8.45%, with standard deviation of 25.62%.

Table 3 Annual Statistics of Mutual Funds: July 2002 – June 2009

Year	Mean	Std. Dev	Number
2002-2003	4.38%	18.73%	9
2003-2004	6.71%	21.49%	22
2004-2005	23.76%	36.03%	38
2005-2006	89.94%	36.90%	42
2006-2007	76.63%	74.00%	42
2007-2008	-8.45%	25.62%	42
2008-2009	12.79%	26.08%	28

Table 4 examines performance and compares the mean (average annual return) between the two sub-samples designated as underperformers and outperformers. All nine selected funds beat the benchmark in 2003; while all 42 available mutual funds underperformed in 2007. In the other five years, both winners and losers together existed.

Table 4 Annual Statistics for Funds based on Comparison with the WCSSAI

Year	Underperform			Outperform		
	Mean	STD. DEV	N	Mean	STD. DEV	N
2003				4.38%	18.73%	9
2004	-15.85%	1.23%	3	10.27%	20.99%	19
2005	-40.10%	0.00%	1	25.49%	34.89%	37
2006	71.71%	16.49%	32	148.26%	17.48%	10
2007	76.63%	74.00%	42			
2008	-24.16%	25.48%	21	7.27%	13.32%	21
2009	0.0902	0.2295	26	0.6175	0.0558	2

When the market had positive returns, as in 2006 (115%), 2007(227%) and 2009(37%), most mutual funds underperformed. More than 76% funds were losers in 2006, and 93% in 2009; especially 100% in 2007. In contrast, when the whole market was gloomy between 2002 and 2005, winners dominated the market and most funds outperformed. However, when the market in 2008 turned to negative from a positive 2007, the number of winners and losers is equal of 21 each. The minimum difference between winner and loser groups performance is 26.12% in 2004, and the greatest difference is 76.55% in 2006.

Table 5 presents the view of one-year persistence in both winners and losers during the period 2002 to 2009. In 2003, all nine funds beat the benchmark. In 2004, all winners were winners in the previous year (so repeat winners); while 95% of winners in 2005 were repeat winners. There was no repeat loser between 2003 and 2005.

From 2006 to 2009, repeat losers dominated the market. Only 8% funds in 2006 continued their outperformance persistence beating the positive benchmark of market. After that, there were no repeat winners from 2007 to 2009.

In the same time period, the percentage of repeat losers had become 100% in 2006, 2007 and 2009.

Table 5 also shows winners like to repeat their performance in negative market returns such as 2003, 2004 and 2005; losers in really good years, on average, are more likely to repeat their performance.

Table 5: Persistence of Funds Performance : 2002-2009

Year	Winner	Loser	repeat		Percent repeat	
			Winner	Loser	Winner	Loser
2003	9	0				
2004	19	3	9	0	100%	
2005	37	1	18	0	95%	0
2006	10	32	3	1	8%	100%
2007	0	42	0	32	0	100%
2008	21	21	0	21	0	50%
2009	2	26	0	21	0	100%

Table 6 divides the sample into two sub-samples based on survivorship. Table 6A presents statistics for 5 mutual funds which existed for the entire seven-year period of the study. Table 6B presents the similar statistics for 35 other funds that have between five and seven years of data available. Taking the assumption of Malkiel (1995) and Dutta and Su (2008), Table 6A can be called “survivorship group” table, and Table 6B presents “non-survivorship group”. Malkiel (1995) believes only those funds outperformed frequently can survive, which means the survivor group should outperform the non-survivorship group during the study period.

Table 6A: 5 Funds with Return Data for Each Study Year, 2002-2009

Year	Mean	Std.dev	Min	Max
2003	-5.71%	2.80%	-9.83%	-2.03%
2004	6.64%	5.64%	-1.47%	12.38%
2005	-1.44%	3.18%	-6.33%	1.43%
2006	68.96%	3.68%	65.54%	73.37%
2007	131.12%	10.37%	118.58%	144.77%
2008	-9.85%	5.91%	-14.47%	0.12%
2009	13.36%	10.75%	-0.55%	24.61%

Given above are the statistics for the “survivorship bias” group, that is, the funds have lasted over the entire study period.

Table 6 B: Funds without Return Data for Each Year, 2002-2009

Year	Mean	Std.dev	Min	Max
2003	16.99%	23.31%	-35.70%	50.50%
2004	6.37%	24.46%	-16.99%	50.50%
2005	25.78%	37.22%	-40.10%	90.90%
2006	92.78%	38.47%	42.37%	173.32%
2007	69.27%	75.87%	-26.24%	169.39%
2008	-8.26%	27.26%	-111.09%	38.88%
2009	12.67%	28.25%	-97.31%	65.70%

Above table is the statistics for “non-survivorship bias group”, those funds were not in existence for the entire study period.

The number of Chinese mutual funds generally increased during the study period; however, the number dropped rapidly from 2008 when current financial crisis started. The minimum difference of mean between the two groups is 0.27% in 2004; the maximum is 61.85% in 2007. The five seven-year surviving funds in Table 6A beat the other 35 funds in 2004, 2007 and 2009, while they had lower returns in the other four years.

Even though the five funds survived during the entire seven-year period, the other 35 mutual funds have better average returns in four of seven years. Such, survivorship bias does not explain Chinese mutual funds performance during 2003 to 2009.

The Chinese share market comprises of Shanghai Stock Exchange and Shenzhen Stock Exchanges; the Weighted Chinese Shanghai and Shenzhen A-share stock market index can represent fully the whole Chinese market. However, some people such as Grinblatt and Titman (1992) and Goetzmann and Ibbotson (1994) believe a mutual fund which achieves above average returns will continue to enjoy superior performance. Therefore, Table 7 provides returns of the five funds which survive during 7-year study period. However, none of those five survivors has continued beating the average return from 2003 to 2009.

Table 7: Five survivor funds during study period

Year	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Hua An Innovations Fund	-5.25%	3.78%	0.86%	65.54%	137.73%	-11.73%	5.03%
Guotai Jinying Growth	-9.83%	12.38%	1.43%	73.37%	118.58%	-9.44%	24.61%
Nzhen Development Bank Co.,Ltd.	-6.28%	7.42%	-6.33%	66.64%	144.77%	0.12%	16.31%
Penghua Sector Growth	-5.18%	-1.47%	-2.81%	72.53%	129.82%	-13.75%	21.39%
CSFMC Stable Growth	-2.03%	11.07%	-0.33%	66.73%	124.71%	-14.47%	-0.55%
Average	-5.71%	6.64%	-1.44%	68.96%	131.12%	-9.85%	13.36%

When either the Weighted Chinese Shanghai and Shenzhen A-share stock market index or average return was chosen, none of Chinese mutual funds continued its winning streak or losing streak from 2002 to 2009. So the percentage of those funds which repeatedly won or lost each year during the study period is zero.

Assuming an investor has no way to forecast if a fund will win or lose in any given year, the winning or losing probability is 50/50. Thus, a fund has 1.56% probability to achieve six-year winning or losing streak; while 0.78% probability for seven years. Thus, our research result 0% is much less than the expected random occurrence of mutual fund performance 0.78%.

5. Conclusion

Different to previous regression study of Chinese mutual fund performance persistence, we believe this paper is the first one with a sample approach – a direct annual examination of whether a mutual fund beat the market proxy or not. The Weighted Chinese Shanghai and Shenzhen A-share stock market index has been developed as the benchmark for this study. The data consists of 42 mutual funds which are all available Chinese mutual funds return data from the GUO TAI JUN AN mutual fund database over the period July 2002 to June 2009.

Most mutual funds outperformed from 2003 to 2005. However, none beats the market in 2007; while 10 out of 42 funds outperformed in 2006. The number of winners and losers is equal in 2008; losers dominated the market in 2006, 2007 and 2009. In 2003, all nine funds outperformed the benchmark. In 2004, all winners were winners in the previous year (so repeat winners); while 95% of winners in 2005 were repeat winners. There was no repeat loser between 2003 and 2005. From 2006 to 2009, repeat losers dominated the market. Only 8% funds could continue their outperformance persistence beating the market in 2006. There were no repeat winners from 2007 to 2009. The percentage of repeat losers had become 100% in 2006, 2007 and 2009. Winners like to repeat their performance in negative market returns such as 2003, 2004 and 2005; losers in really good years, on average, are more likely to repeat their performance.

While survivorship bias is acknowledged, surviving funds did not outperform those non-survivor funds during 7-year study period. Furthermore, none of surviving funds continues its winning or losing streak comparing with average returns for seven years. Therefore, survivorship bias could not explain Chinese mutual funds performance during 2002 to 2009.

In conclusion, most winners would like to repeat their performance in bad market years while losers like to repeat their poor performance in really good market years. There is no evidence to show any long term persistence existing in Chinese mutual fund market during 2002 to 2009.

This paper may provide some contribution for future studies which is relevant to Chinese mutual fund performance persistence. This study also will help investors to better understand Chinese mutual funds and make wise investment decisions.

Acknowledgement

The authors appreciate the support from National Natural Science Foundation of China (NSFC) under project 70873115.

References

- Agarwal, V. and Naik,N. (2000). Multi-period performance persistence analysis of hedge funds. *Journal of Financial and Quantitative analysis*, Vol. 35.
- Carhart, M. (1997). On persistence in mutual fund performance. *Journal of Finance*, Vol. 52.
- Casarin, R. (2002). Italian equity funds: Efficiency and performance persistence. University of Venice. Working paper.
- Dutta, A. and Su, R. (2008). Persistence in mutual fund returns: An examination of U.S. growth mutual funds from 1988 -1996. *Review of Business Research*, Vol. 8 (3), pp 86-92.
- Dutta, A. Su, R. and Xu, M. (2010). Persistence in New Zealand growth mutual fund returns: An examination of New Zealand Mutual funds from 1997 -2003. *Indian Journal of Economics & Business*, Vol. 9(2), pp 303-314.
- Ferson, W. and Schadt, R. (1996). Measuring fund strategy and performance in changing economic conditions. *Journal of Finance*, Vol. 51, pp 425-461.
- Grinblatt, M. and Titman, S. (1992). The persistence of mutual fund performance. *Journal of Finance*, Vol. 47.
- Goetzmann, W. and Ibbotson, R. (1994). Do winners repeat? Patterns in mutual fund behavior. *Journal of Portfolio Management*, Vol. 20.
- Gruber, M. (1996). Another puzzle: the growth in actively managed mutual funds. *Journal of Finance*, Vol. 51, pp 783-810.
- Hendricks, D., Patel, J. and Zeckhauser, R. (1993). Hot hands in mutual funds: short-run persistence of relative performance 1974-1988. *Journal of Finance*, Vol. 48.
- Li, D. and Fang. Z. (2005).Review of Investment funds performance persistence research. University of Science and Technology of China, Securities Market Herald, Retrieved August 30, 2011, from http://www.chinaamc.com/portal/cn/include/infordetail_pop.jsp?id=m63731&type=CMS.NEWS
- Li, K. (2005). An examination of Chinese closing-end mutual funds performance. *Journal of Commercial Research*, 2005, Vol. 18, pp83-86
- Li, X., Chen, X. and Mao, Y. (2007). Persistence in Chinese mutual funds returns: An examination of Chinese mutual funds from 2005 -2006. *Contemporary Economic Management*, 2007, Vol.6, pp 97-102.
- Li, X., Wu, G. and Tang, Y. (2007). Mutual funds performance persistence: with new model and evidence from China. *Journal of Harbin Institute of Technology*, 2007, Vol.10, pp 1673-1676.
- Liu, J. and Li, C. (2006).Persistence of mutual funds performance: evidence of Chinese opening-end mutual funds. *China economist*, 2006, Vol. 7, pp 95-96
- Luo, H., Wang, H. and Tian, Z. (2003).The analysis of Chinese mutual fund performance with DEA model. *Chinese journal of Management Science*, 2003, Vol. 5, pp 20-25
- Malkiel, B. (1995). Return from investing in equity mutual funds 1971 to 1991. *Journal of Finance*, Vol. 50.
- Wang, X. and Yuan, D. (2006). Persistence in mutual funds returns: Chinese evidence. *Statistic and Strategy*, Vol.1, pp 137-138.
- Wu, Z. and Fang. Z. (2004). The analysis of Chinese mutual fund performance persistence. *Value Engineering*, Vol. 7, pp 64-68
- Xiao, K. and Yang, Y. (2005). Mutual funds performance persistence: evidence from China. *Finance and Trade Research*, Vol. 2, pp 55-59.
- Xiao, Y. and Ning, G. (2005). The persistence of Chinese mutual funds. *Journal of Hunan Financial and Economic College*, 2005, Vol. 4, pp 32-34.
- Zhou, Z. and Shi, B. (2004). Persistence in Chinese opening-end mutual funds studies. *Inquiry Into Economic Issues*, 2004, Vol. 9, pp 58-62.