

**The persistence in Hong Kong equity funds that focus on growth firms’
performance**

by

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Abstract

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This paper tests whether or not the Hong Kong equity growth funds have performance persistence. The research uses a sample of thirty-eight Hong Kong equity funds over the period 2008-2012 for the significance of the persistence in funds' performance.

The result shows that no statistically significant values are achieved out of 38 funds examined even at the 10% significance level, which means there is no performance persistence in Hong Kong equity funds. In contrast, there are four equities confirm performance reversal.

Fund managers may not keep on outperforming the market, but based on the total changes in the funds' NAV, they all outperform the Hong Kong stock market.

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Chapter 1 Introduction

1.1 Background

The persistence of fund performance refers to consistency in the performance of the fund over different periods. That is if a fund performs well and it will continue to perform well in the next period; or the fund performed badly in a given period, it will continue to underperform in the next period. The evaluation of performance persistence does can provide evidence and information on a fund manager's management ability within helps the investors to choose a better fund to invest in.

How can the historical performance influence future performance? Are we be able to use the past performance data to forecast the future? This paper will use Hong Kong equity fund as sample to test whether these funds show persistence in their performance.

Equity fund mainly invests in stocks. The equity fund has several investment styles, for instance, the fund can mainly invest in value stocks or growth stocks, small-cap or large-cap. Furthermore, Funds also focus on one country's stocks or stocks form several countries.

1.2 Purpose of study

Investors commonly believe that the fund managers are very professional, so that they always wonder invest a fund that can outperforms the others and also bring consistent profit so that they can invest reasonably. The purpose of this paper is to test whether or not the Hong Kong equity funds have performance persistence, so that this paper can give investors reasonable suggests choosing the better fund to invest in and avoid the fund which has poor performance.

Hong Kong Securities and Futures Commission (SFC) posted 2011 fund management activities survey in July, 2012, what the survey claimed about is that the fund management business in Hong Kong has maintained an upward trend in recent years. For international investors, Hong Kong stock market remains Asia's preferred investment destination. The survey result shows that although the total assets of the fund management business in Hong Kong last year fell on year-on-year basis, but based on the average gross value in the past three years, the fund management business continued an upward trend. The survey shows that except the real estate investment trusts, more than 60% of the fund management business in Hong Kong's total assets are from overseas investors, this ratio has remained stable over the past five years.

Hong Kong fund market has been developing for over 30 years. In 2010, Hong Kong fund management business (asset under management) is already reached to \$1294

billion. What is more, its developed financial system gives foreign investors guaranty that the market is good to invest.

What this paper focuses on is Hong Kong equity funds that mainly invest in the growth firms. Meanwhile, because the mainland Chinese investors are becoming rational on investing and also their globalizing trend of investment, more and more Chinese investors choose to invest in the global market. Therefore, Hong Kong has been considered to be the best choice of investment based on several reasons such as it is the nearest financial market to mainland China.

In China, most individual investors prefer to high return than high risk, so investing in equity funds can bring higher return than funds such as index fund, mutual fund, et cetera; at the same time, equity funds will be much less risky than investors themselves invest in a couple of stocks not familiar with. As for what equity funds focus on, the reason that why the paper chooses growth companies is that, firstly, investing in growth firms would be more common to have persistency, because growth firms are usually developing fast, which means they are easier to make profit year by year. Secondly, investing in growth firms is more appropriate for mainland Chinese investors who prefer higher return. Moreover, not just for the foreign investors, but also for Hong Kong market itself, to know which fund is better or not can make the fund survival of the fittest and help the whole fund industry's long-term

healthy development. This is the Practical significance of this paper.

1.3 Need for the Study

The persistence of fund performance have been studied by many very famous scholars, however, there is still no quite definite answer of persistence. It includes many reasons, first, the world has many different kinds of financial market, developing or developed. Second, the managers' investing abilities are very different. Third, there are many different types of funds with so specific investing strategies that it is hard to combine or compare with them. When doing the research, the topics on equity fund are not much, so this paper may help investors choose open-ended equity fund which has better longer-term performance.

Chapter 2 Literature Review

2.1 Performance Persistence of Funds

2.1.1 International Scholars

The research on the fund performance persistence is very early. The paper on forecasting the fund performance, which is written by Sharpe in 1966, as we know, is the one of the first paper involved in this field. Sharpe collects 34 open-ended mutual funds over the period 1954-1963 and uses the sample funds' average Sharpe Ratios to compare with the relative benchmark; the funds which have the average Sharpe ratios smaller than the benchmark are actually underperformers. Meanwhile, he also suggests that it is better to invest directly in a good diversified portfolio.

Then, Jensen (1968) uses the CAPM model to evaluate 115 mutual funds' performance over the period of 1945-1964 and find that the average funds' performance could not outperform the market or other strategies such as buy and hold.

In Jensen's research, data was collected on total 56 funds over 20-year time period.

The result shows that more than half of samples have the negative Alpha and are biased. These negatively skewed distributions demonstrate that over half funds underperform.

In 1987, Lehmann and Modest evaluate 130 mutual funds' performance over the period of 1968-1982 and test the sensitivity of Jensen Alpha and Treynor-Black Appraisal ratio. In the research, Lehmann and Modest show that most of Jensen Alpha and Treynor-Black Appraisal ratio are negative no matter other factors or what method would be used.

In 1989, Grinblatt & Titman use Cross-sectional regression method and to forecast the next 5 years fund performance using the past 5 years fund performance. The conclusion is that the historical performance provides related information for individual investors. 1% abnormal returns very past five years can bring 0.28% more expected return in the following five years.

Hendricks, Patel and Zeckhauser (1993) get another positive conclusion, the mutual funds short-term persistence exists. The results show that after one year investment strategy, the past performance can raise over 6% risk-adjusted return. However, they also realize that they didn't include every variable such as tax would cause an obviously change on results.

Blake, Elton and Gruber (1993) evaluate the performance persistence of mutual funds and made a conclusion. Funds which underperform are usually high expenses; however, if we get rid of these parts from the sample, the result can still shows us how the future performance does. They also find that Alpha can transmit the useful

information to the future three years, so the past performance of funds could be a quite good evidence of the future performance and performance persistence should be a common phenomenon.

Goetzmann and Ibbotson (1995) test monthly, yearly and two-year returns with a period of 13 years and R square value is higher than 15%, this means a large part of performance can be explained by the past performance.

In 1995, Brown & Goetzmann use odds ratio and compared with relative standard and absolute standard, then found the fund performance after risk adjustment has persistency in most periods.

Krueger and Callaway (1995) evaluate 3900 mutual fund over the period of 1984-1994. In their summary, they state that, actually, in the mutual fund industry, the persistent performers and inconsistent performers are all distributed in the whole industry regardless the prediction of the risk level, the prior financial measures or the ability of forecasting. Actually, the mutual fund industry seems to be weak form efficient and investors barely use the past performance to select what fund is chosen.

Another research from Brown and Goetzmann (1995) show that no matter winners or losers performance persistence, most of them are as a result of funds lagging passive benchmarks. Besides that, they also have conclusion that the high extent of performance persistence is due to the time period of studying. The influence of time

period needs a condition. When investors believe that today's return is the best forecasting tool to tomorrow's return, not the fundamentals. Therefore, keep purchasing their stock shares or selling their stock shares when stock market go up or go down, these actions have already influenced the market.

In 1997, in Carhart's research, he find that fund performance only has short term persistence, which lasts only one or two years.

Then, based on the result of Brown & Goetzmann's research, he also discovers that the mutual funds' performance persistence on one-year basis is mainly contributed to many other factors, such as stock returns and funds' daily expenses and so on. The persistency is partly because of the momentum effect.

Christopherson, Ferson and Glassman (1998) do the same research. The difference is they prefer to study about pension funds and their regulatory environment is also different. There is one different point of result in the study, it is whether the persistence exists or not. As the research states, the performance persistence of pension fund is harder to maintain than mutual funds. The performance persistence of pension funds does exist, but most of them concentrate in the underperforming part.

Later on, some researches were undertaken in different part, for example, bond funds and equity funds, but there is no significant performance persistence in these types of

funds. In contrast, there is significant performance persistence in the monetary market funds. The limitation in these studies is that they are all located in the U.S. financial market.

Cai, Chan, and Yamada (1997) examine the performance of Japanese open-ended stock mutual funds over the period of 1981-1992. The authors used monthly returns of 800 equity funds to do the test. The results show that most of the stock mutual funds underperform no matter what method or benchmark that used.

Cheng, Pi and Wort (1999) examine mutual fund houses on a relative basis, not the fix benchmark in Hong Kong. Through examining mutual fund houses instead of a solo fund could accomplish the test in a better way so that we can know the impact of correlations between manager's previous performance and present performance. In the almost all previous research, there is no short-term persistence in the Hong Kong fund houses. The total thirty two fund houses only have two that have performance persistence. Moreover, these two funds have such high returns in the past periods. The management strategies and supervision may be the reason which could explain why these two fund houses are not normal.

Ferruz, Vicente and Andreu (2008) examine the performance persistence of Spanish pension funds. They test the Spanish pension funds over the period of 1999-2006.

Manser and Schmid (2009) examine the persistence of raw and risk-adjusted returns for equity hedge funds. In the paper, the authors made conclusions. Firstly, there is only a little funds' return revealed their persistence in Hendrick's approach. However, there are still some better standard to determine which fund outperform, such as Sharpe ratio, market Beta. In fact, Alpha is more useful when testing raw returns to set which are funds that outperform or funds that underperform.

2.1.2 Chinese Scholars

Chinese scholars also did some researches on the persistence topic. Liu (2001) and Ni, Xiao and Wu (2002) use Regression coefficient method to test persistence of fund performance in China stock market, eventually, authors found that Chinese fund is inconsistent.

Du (2002) examines the Chinese equity fund using raw returns. The results show that the persistence of Chinese equity fund is weak. Besides, it is easily influenced by market.

In summary, only a few scholars obtain the positive answers on whether or not the funds have performance persistence and the performance persistence only exists in the short term. Most scholars obtain that no performance persistence showed in the research results.

Name	year	Sample Period	No. of funds	persistence
Shapre	1966	1954-1963	34	No
Jensen	1968	1945-1964	115	No
Lehmann& Modest	1987	1968-1982	130	No
Grinblatt& Titman	1992	1974-1984	157	No
Hendricks, Patel& Zeckhaser	1993	1974-1988	165	Short term
Blake, Elton& Gruber	1993	1965-1984	143	No
Goetzmann& Ibbotson	1994	1976-1988	728	Short term
Krueger& Callaway	1995	1984-1994	3900	No
Brown& Goetzmann	1995	1976-1988	372-829	Short term
Carhart	1997	1962-1993	1892	Short term
Christopherson, Ferson& Glassman	1998	NA	NA	Short term
Cai, Chan& Yamada	1997	1981-1992	800	No
Cheng, Pi& Wort	1999	1986-1995	32	No
Ferruz, Vicente& Andreu	2007	1999-2006	NA	No
Manser& Schmid	2009	1997-2003	1150	No

Table 1: summary of results of papers mentioned in literature review

2.2 Survivorship Bias

Survivorship bias effect is the fund performance of delisting fund may lead to the wrong estimation of the performance of the fund. It can also distort the calculation of

market return or change returns on the companies in an index via including and excluding companies. Survivorship bias is abandoned by Grinblatt and Titman and Ippolito at first time in the research.

The reason why survivorship bias may influence the results is that all samples which cannot keep their operations till the end of the sample period would be excluded. Usually, the samples which are excluded are bad management funds. Therefore, Exclude these funds may cause the average abnormal returns of the sample funds raise.

Chapter 3 Methodology

3.1 Data

3.1.1 Sample Selection

The sample in this paper is gathered from Hong Kong stock market, which contains 38 open-ended equity funds that are mainly investing in growth companies. There are 72 equity funds that mainly invest in growth companies, but because of requirement of sample selection, the sample finally contains 38 funds having operation for over 4 years, from August 2008 to July 2012.

Relatively new equity funds' performance might not have persuasion to the persistence according to the comparison between the funds' ages and the market maturity. In order to conduct reasonable results, the 34 funds should be excluded due to the facts. For instance, these 34 funds have several different problems, such as the termination of the funds, relatively short operation periods, and lack of information. This paper concentrates on the equity funds gathered, more specifically, the investment behavior mainly in the growth firms; therefore, the results will conduct a realistic conclusion with a particular concentration in a certain field of growth companies.

3.1.2 Data Sources

This paper would use monthly net asset value (NAV) of the funds as the bases, and the monthly change of Hang Seng index would be used as the benchmark to compare with the monthly change of NAV. In order to achieve the CAPM model calculation, β values of the funds will also be necessary. Moreover, this paper applies Hong Kong market one year bond rate as the risk free rate. These data are collected from Bloomberg and Yahoo finance.

3.1.3 The calculation of return

The calculation of achieving the monthly returns of the funds for the sample data can be presented as the following formula:

$$R_f = \frac{NAV_t}{NAV_{t-1}} - 1 \quad (1)$$

R_f indicates the monthly return of the fund

NAV_t, NAV_{t-1} implies the net asset value of the fund in the current month and the net asset value of the fund in the previous month

Apparently, the methodology applied to obtain the percentage of the monthly change in Hang Seng Index is similar to the formula listed above.

3.2 Methodology

The application of Jensen's Alpha is a measurement of the quantity that the realized return exceeds the expected return of a certain fund in the market, that is, Jensen's Alpha represents the existence of the abnormal return achieved in reality. Even though the income of the fund can also be used as the indicator, it is relatively naïve compared to Jensen's Alpha; therefore, in order to conduct a comprehensive indicator for an accurate result and conclusion, Jensen's Alpha, as a precise indicator, should be selected.

As the first step, the calculation of the expected returns of the funds by using CAPM Model will be conducted. Expected return is the return of the fund that the investors in the market expect.

CAPM Model:

$$E(R_i)_t = R_{ft} + \beta_{iMt} \times (R_{Mt} - R_{ft}) \quad (2)$$

$E(R_i)_t$ indicates expected return of the fund.

R_{ft} indicates risk free rate.

β_{iMt} indicates the beta of the fund.

R_{Mt} implies the market return.

As the second step, the application of the following formulas shall be conducted in order to calculate Jensen's Alpha.

Jensen's Alpha formula:

$$r_{it} - r_{ft} = \alpha_{it} + \beta_{it}(r_{mt} - r_{ft}) + \varepsilon_{it}$$

The formula can be rewrite as follows:

$$\alpha_{jt} = R_{it} - [R_{ft} + \beta_{iMt} \times (R_{Mt} - R_{ft})] \quad (3)$$

α_{jt} indicates Jensen's Alpha of the fund.

R_{it} indicates the realized return of the fund.

Thirdly, with the comparison of the difference between expected fund return and realized fund return, a positive or negative Jensen's Alpha result may exist. A positive Jensen's Alpha would be set as a winner=W, which implies the existence of an outperformance in the current period accorded to the fund; a negative Jensen's Alpha, in contrast, would be set as a loser=L, which implies the existence of an underperformance in the current period accorded to the fund.

Therefore, according to the statements discussed above, the adjacent periods will have four different circumstances: WW, WL, LW, and LL. The four different circumstances could be defined and explained by following statements:

(1) WW means superior performance in the previous month and in the subsequent month.

(2) WL means superior performance in the previous month but inferior in the subsequent month

(3) LW means inferior performance in the previous month but superior in the subsequent month.

(4) LL means inferior performance in the previous month and inferior in the subsequent month.

Furthermore, after the determination the circumstance, which can be one of WW, LL, WL and LW that the fund is under, the total number of the funds with each circumstance can be calculated, so that a further calculation by using the formula as follows for the test can be achieved. Moreover, the value to compare with the standard normal distribution at 10% significant level can be obtained, in order to observe whether or not the value is statistically significant

The formula is:

$$Z = \frac{\ln\left(\frac{WW \times LL}{WL \times LW}\right)}{\sqrt{\frac{1}{WW} + \frac{1}{LL} + \frac{1}{WL} + \frac{1}{LW}}} \quad (4)$$

At 10% significance level, the value is statistically significant only if the value has a greater Z value in the Z table than the standard corresponding Z value of 0.95; otherwise, the value itself showing no statistically significant sign related to the result and conclusion. Furthermore, the result of the calculation supports the hypothesis of persistence in the equity fund performance in the market, only if the value of the result of the calculation is positive and significant, that is, winners continue to win and losers continue to lose.

Chapter 4 Results and Analysis

4.1 Results

By conducting the calculation of the Z-test, 38 Z-values are obtained; however, the result shows that no statistically significant values are achieved out of 38 Z-values at 10% significance level. Based on the results and literature review in chapter 2, persistence most likely does not exist within Hong Kong equity funds mainly on growth firms.

Table 2 showed the test results of Hong Kong equity funds' performance persistence:

Funds' Name	Z-value
1. BEACHKG HK Equity	0.993540799
2. BOCCOMS HK Equity	1.144694896
3. GJGCHGR HK Equity	1.014610451
4. DRECGTA HK Equity	-0.554822306
5. BOCPECE HK Equity	0.720286274
6. BOCHKEA HK Equity	0.037876904
7. PRIEURB HK Equity	0.065665716
8. PRLSHER HK Equity	1.260415154
9. SCHHKEA HK Equity	0.193265415
10. BEACGCG HK Equity	-0.304575114
11. CITIHKE HK Equity	-1.961599881
12. PRICHIN HK Equity	0.363942517
13. NCBCNRO HK Equity	0.885829029
14. BOGGLEA HK Equity	-0.225965592

15. JFELEME HK Equity	-0.174488068
16. BEACASG HK Equity	-1.071040165
17. PRIHKEQ HK Equity	1.260415154
18. BOCPHKP HK Equity	-0.554822306
19. SCHMSGGA HK Equity	-2.288094003
20. PRLSINE HK Equity	-0.174488068
21. PRLSHEI HK Equity	1.260415154
22. PBIHKQI HK Equity	-0.136553134
23. DRECGTI HK Equity	-1.071040165
24. SCHHKEB HK Equity	0.53682524
25. BEAGLOB HK Equity	-0.434395405
26. BEAGLRS HK Equity	0.291896864
27. SCHMGRA HK Equity	-1.961599881
28. BEACASA HK Equity	-1.142414633
29. BEACGCA HK Equity	-0.412033049
30. CITIGRO HK Equity	-2.656869199
31. BEAMHKG HK Equity	0.037876904
32. BEAHKGA HK Equity	1.472041991
33. BEAJAPN HK Equity	-0.80954509
34. DRECGAA HK Equity	-1.142414633
35. BCOMHKF HK Equity	0.065665716
36. DRECGAB HK Equity	-1.376113351
37. DRECGTB HK Equity	-0.651047204
DRECGTC HK Equity	-1.539526201

* Significant at 10% level

Table 2: test results of Hong Kong equity funds' performance persistence.

4.2 Analysis

The period of 2008 to 2012 the global stock market had been influenced by opposite factors, which had a contribution to drag the market to a downward trend globally.

Based on the NAVs of sample funds, seventeen funds still maintain or appreciate their

net asset values even though the whole stock market is in bearish. Besides that, all funds closed with an outperformance compared with Hang Seng Index, although the results above show that Hong Kong equity funds have no persistence. In literature review, only a few authors could obtain positive answers on the existence of market fund persistence, that is, the results with no significant conclusion of this paper are reasonable.

Table 3 shows the NAV of the first period and the last period in the sample date and the β of the funds:

Funds' Name	NAV:08/7/31	NAV:12/7/31	β
1. BEACHKG HK Equity	186.32	179.67	1.01
2. BOCCOMS HK Equity	9.2633	12.1008	0.93
3. GJGCHGR HK Equity	76.91	61.06	0.96
4. DRECGTA HK Equity	18.82	18.43	0.82
5. BOCPECE HK Equity	6.9832	6.214	1.07
6. BOCHKEA HK Equity	29.7954	28.6064	1.01
7. PRIEURB HK Equity	9.6522	8.1976	0.82
8. PRLSHER HK Equity	19.7532	21.3616	0.97
9. SCHHKEA HK Equity	35.3885	38.0038	0.94
10. BEACGCG HK Equity	133.77	135.78	0.97
11. CITIHKE HK Equity	24.27	22.41	1
12. PRICHIN HK Equity	9.711	9.4881	1.05
13. NCBCNRO HK Equity	6.2673	5.5174	1.08
14. BOGGLEA HK Equity	15.0785	15.1778	0.76
15. JFELEME HK Equity	8.5168	7.48	1.04
16. BEACASG HK Equity	26.17	28.31	1.03
17. PRIHKEQ HK Equity	15.1072	16.5118	0.97
18. BOCPHKP HK Equity	20.894	20.9388	0.99

19. SCHMSGGA HK Equity	14.75	17.17	0.58
20. PRLSINE HK Equity	18.7177	16.6891	0.75
21. PRLSHEI HK Equity	19.5787	21.406	0.97
22. PBIHKQI HK Equity	27.73	24.7	0.98
23. DRECGTI HK Equity	15.39	15.35	0.82
24. SCHHKEB HK Equity	36.5815	40.2793	0.94
25. BEAGLOB HK Equity	8.77	7.99	0.85
26. BEAGLRS HK Equity	1	0.72	0.88
27. SCHMGRA HK Equity	15.58	17.46	0.77
28. BEACASA HK Equity	28.34	32.72	1.03
29. BEACGCA HK Equity	137.46	149.05	0.98
30. CITIGRO HK Equity	17.62	18.09	0.69
31. BEAMHKG HK Equity	15.8223	15.4834	0.98
32. BEAHKGA HK Equity	193.95	199.62	1.01
33. BEAJAPN HK Equity	8.75	6.65	0.62
34. DRECGAA HK Equity	19.46	18.72	0.82
35. BCOMHKF HK Equity	14.3752	15.2551	0.97
36. DRECGAB HK Equity	18.56	17.71	0.82
37. DRECGTB HK Equity	16.82	16.34	0.82
38. DRECGTC HK Equity	16.74	15.72	0.82
Hang Seng Index	28,643.61	19,811.80	1

Table 3: basic information of sample funds

There are several reasons may explain why there is no persistence on these funds.

Firstly, the sample funds are all equity funds, which means they will choose stock as main investment so that these funds would be influenced by the Hang Seng Index of Hong Kong market unavoidably.

Secondly, in Efficient Market Hypothesis (EMH), even though the Hong Kong market should belong to semi strong market at least, investors may still lack of value

investment philosophy, and then higher risk makes the return more volatile, the whole market would not be stable.

Third, the fund managers' abilities are undefined. Furthermore, fund managers may change their positions very frequently, and thus it could cause fund managers' short term speculation behavior.

Fourth, based on chapter 2, we can know that some authors made a conclusion that the funds have persistence in the short term, but have no persistence in the long term. Such as Hendricks, Patel and Zeckhauser (1993) researched 165 funds over the period 1974-1988, Goetzmann and Ibbotson (1994) researched 728 funds over the period 1976-1988, Brown and Goetzmann (1995) examined over 372 funds over period 1976-1988 and Carhart (1997) researched 1892 funds over period 1962-1993. So the length of sample time period would be one of the reasons influences the results.

Fifth, the accuracy of data may be another reason that could has effect on results. The data processing is necessary, and during the process, the accuracy of data may be damaged.

Chapter 5 Conclusions and Recommendations

5.1 Conclusion

In this paper, the results show that the equity funds in Hong Kong do not have performance persistence; however, the equity funds, number 11, 19, 27, and 30 in table 1, these four equities' Z-value is smaller than -1.96, which means at 5% significance level, these four equities have performance reversal. This conclusion states that these funds' performance could have inferior performance in the previous month but superior in the subsequent month or inferior performance in the previous month and inferior in the subsequent month. Though there is no persistence in the research, for investors, they can pay close attention to these four equities that have performance reversal, because of the situation that when these funds underperform the market for a few months, the probability of reversal would become larger, which means it would be a good investing opportunity.

If the performance of funds has significant persistence, the performance persistence can become a reasonable investment strategy to help investors make a wise decision.

In a reality based situation, for the investors, an absolute advantage of funds' performance persistence is meaningless, since that would indicate that every single person can achieve an abnormal return in the market by purchase the fund. In the long

run, this could not happen apparently. What the results show us is that certain funds would always have inferior performance; therefore, the investors could avoid them in order to have a relatively low risk during the investment decision making progress. For funds with performance reversal, investors may find an excellent investing opportunity by investing in an opposite way.

5.2 Recommendations

When it comes to funds, people usually believe that fund managers are professional, so that they should outperform the market; however, not only the results in this paper, but also the results in some famous researches such as what mentioned in literature review, the truth as far as we know is average funds' performance is not definitely superior than the market does. Therefore, practically, investors need to choose funds very carefully. What is more, funds may have short term performance persistence, but what investors really should focus on is the funds are able to outperform the market in the long term. Speculation is not a good choice no matter what kind of investment (stocks or funds) people are going to have.

What is more, the research of this paper definitely has some areas for improvement. For example, firstly, the 4 year period as the sample period might not accurately reflect the true circumstance of the equity funds in Hong Kong market. Secondly, the data processing might make the original information misrepresented.

To sum up all the perspectives discussed above, funds' performance may have more variables to influence the profitability, the results based on the NAV may not conclude the funds' performance completely, but the results can still help investors to abandon the fund which has poor performance.

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