

A STUDY ON PERSISTENCE AND PERFORMANCE OF MUTUAL FUNDS IN THAILAND.

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ABSTRACT

This study investigated portfolio performance and performance persistence of 74 equity funds (EQs) and foreign investment funds (FIFs) in Thailand during 2014-2018. Portfolio performance was evaluated by employing Sharpe, Treynor, Jensen, Information and Tracking error ratios. Portfolio performance persistence was assessed *via* Spearman's Rank correlation coefficient. The study found that, after adjusting for risk and return, the EQs and the FIFs significantly outperformed and underperformed the market, respectively. Regarding performance persistence, Spearman's Rank correlation coefficients indicated that the performance of both equity and foreign investment funds was not persistent. Particularly, during 2015-2016, the performance of FIFs was significantly negatively correlated, implying that the 2015 winner (loser) would turn loser (winner) in 2016. In terms of ability to persistently beat the market, most funds that could beat the market in the previous year were not able to continuously beat the market for more than two consecutive years. In addition, the study found that the number of funds that could continuously beat the market was highest during the period of 2017-2018.

Keywords : information ratio, Jensen's Alpha, mutual fund performance persistence, portfolio performance, Sharpe ratio, Spearman's Rank correlation coefficient, tracking error ratio, Treynor ratio

INTRODUCTION

Investing in mutual funds is another popular investment choice for investors. In Thailand, this phenomenon could be clearly seen from the increasing numbers of asset management companies in Thailand from merely eight companies in 1992 to 24 companies in 2019 [13]. Investing in mutual funds enables small and medium investors to invest in various assets, where the investment portfolio is managed by experienced fund managers. Mutual funds that investing in foreign assets are also popular among investors and the numbers are by far increasing since 2002 with five funds to 668 funds in 2018 [13]. The reason of its popularity is because it is another way for risk diversification. For example, the net asset value (NAV, henceforth) of investing in Foreign Investment Funds (FIFs) has been increasing from 0.39 percent in 2002 to 21.73 percent in August, 2019 [13]. When categorizing the mutual funds based on the investment policy, the equity fund (EQs) is considered as the second largest investment type of the mutual funds with the total asset of 1,464 million THB (as in August, 2019). The popularity came from the high return rate, which is appropriate with investors who are able to accept high risk levels [8].

This research concentrate on two different types of mutual funds, namely, (1) EQs that invest mainly in equities listed in the Thai Stock Exchange markets; and (2) FIFs that invest in equities outside the fund's home country, thus having more diversified portfolios. Different policies and different abilities of the fund managers would lead to the differences in fund performances. This study focuses on the portfolio performance and performance persistence of two types of mutual funds, EQs and FIFs. The findings from the study will benefit investors when making an investment decision.

LITERATURE REVIEW

The study of performance ability of equity funds

Gilbertson and Vermaak[1] studied the performance ability of equity funds in South Africa using monthly data during 1974 – 1981. The findings illustrated that the return rates were between 15.9 – 22.5 percent per year which were lower than the reference benchmark. However, when assessing the performance by risk adjusted returns, the return rates were higher than the benchmark. Davis [2] studied the performance and investment formats of the active and passive fund managers from the equity funds in the United States of America during 1962 – 1998 using Fama and French's three-factor model. The findings revealed that the active funds underperformed the passive funds and the persistency period was rather short. Tan [7] studied the performance of equity funds in South Africa from weekly data during 2009 – 2014 using Sharpe, Treynor, Henriksson and Merton Ratios. The findings showed that fund managers in South Africa were unable to create abnormal return and were lack of market timing and selectivity abilities. Regarding the studies about equity funds in Thailand, Jitjaroenkoon[6] studied the performance of FIFs and the appropriate investment format through equity funds to achieve the retirement goal using monthly data from January 2008 – December 2014 and Sharpe, Treynor and Jensen Ratio. The findings showed that for the short investment in 2009 and 2013 that the FIFs were more efficiency than that of domestically invested equity funds. In terms of long investment, it was found that there was no FIFs that provided higher returns than ones that invested in Thailand during seven previous years due to the very positive situation of equity fund market in the country.

The study of the performance persistence of equity funds

Abdel-Kader, Magdy & Qing [3] studied the performance of risk adjusted equity funds, the asset selection and market timing ability and the performance persistence of the equity funds in Hong Kong using weekly data during 1995 – 2005. Three-Factor Model with Jensen and Treynor ratios was used to evaluate the performance. Treynor and Mazuy measure was used to capture the market timing ability. Jensen and Treynor ratios were employed to analyze the performance persistence in two investment periods. The findings showed that, regarding the selectivity and market-timing abilities, the equity funds in Hong Kong underperformed the market. The actively managed funds were underperformed the market benchmark. In addition, the Hong Kong equity funds had short period performance persistence. Rao, Iqbal and Tuani [9] studied 520 equity fund performance persistence in China *via* data collected from 2004 – 2014 using CAPM and Carhart's Four-Factor Model. The findings illustrated that the equity fund performance in China was better than the market. However, it was not persistent. In other words, the fund performance in the past could not indicate the future fund performance in the future. This study concurred with Gopalakrishnan, Kalpakam and Ramakrishna [11] who conducted their study in India using data from 2007 to 2017. The

findings found both the performances of mutual funds to be either persistent or impersistent. Arifin [12] studied the equity fund performance persistence in Indonesia using data from 2010 to 2016 by lining up the five best equity fund performance persistence and still keeping their persistence in five consecutive years. The study showed that the best performance equity funds were flexible funds, fixed income funds, and the equity capital funds, respectively.

Sukcharoensin and Sukcharoensin [4] employed annual data during 2003 to 2012 to study the equity fund performance persistence in Thailand *via* Sharpe ratio to monitor the performance and Spearman's Rank Correlation to investigate the performance persistence. The results showed that the average return rate of the equity funds was fluctuated due to the situations of the economy and the Stock Exchange of Thailand (SET). Most Thai equity funds, on average, were able to adjust their investment tactics during the downturn rather than the upturn of the market. Wissawapaisal & Parkatt [5] studied the persistency of return from long term active equity funds using yearly data from 2004 to 2013. From the data, equity funds were placed in orders based on their return rate in each year, Non-parametric statistics were used to find the correlation between the orders of equity funds. Spearman's Rank Correlation was used to measure the portfolio performance persistence. Findings showed that LTF funds on average could not keep their consistency in providing stable returns especially when the market faced the rapid changes and the average LTF funds could beat the market only for two consecutive years. Jenwittayaroj [10] studied the performance and persistence of equity funds in Thailand during 1995 – 2014 using Fama-French's Three Factor Model and CAPM with the test methodology devised by Goetzmann and Ibbotson (1994) and Malkiel (1995) to measure the persistence of the equity funds. The findings showed that the total returns from equity funds could not significantly beat the market's return both before and after the risk adjustment.

The above literature mainly employed the net asset values with the study period of one year or more to study the portfolios' performance. Risk-adjusted return was used to fathom the portfolio performance against the benchmark. Regarding the performance persistence, the performances were compared between at least two investment periods. However, there has been no study to investigate and compare the performance persistence of FIFs and the EQs that invest only in Thai equities. This research aims to fill the gap by conducting the study to investigate the risk adjusted return and performance between the FIFs and the EQs.

CONCEPTUAL MODEL AND HYPOTHESES

1. Data

This study analyzed the fund performance and the performance persistence of two mutual funds; the FIFs and the EQs. 74 equity funds were selected under the conditions that they were all open-ended funds with non-dividend paying policy and without tax privilege, were in the market for at least five years and still operating in 2019. Then, the quarterly NAV were collected from 2014-2018 to evaluate the returns of the mutual funds. The SET index was used as the standard benchmark, whereas the Bank of Thailand's policy rate was used as a proxy for the risk-free rate.

2. Methodology

In the first part, the portfolio performance of both types of mutual funds was analyzed by comparing the mutual funds rate of returns. Then, the returns were risk-adjusted to investigate how both funds produced the yield after the relevant risks have been accounted for. Five metrics, namely, Treynor, Sharpe, Jensen, Tracking error and information ratios were used to analyze the

fund performance. Then, the second part was to study the fund performance persistence during two consecutive periods using three criteria namely the total return index (TRI) of SET, median and mean values of the rate of return of the FIFs and the domestically invested EQs. The portfolio performance persistence is the mutual fund that has high (low) performance comparing to the benchmark at a certain period of time in the past and still has high (low) performance comparing to the benchmark. Later the persistency performances of both funds were placed in order relating to their performance level. Spearman Rank Correlation was employed to observe the significance of the fund performance persistence in each period of the study.

RESULTS

1. Findings relating to the portfolio persistency performance of the FIFs and the EQs

Table 1 summarizes the descriptive statistics of the fund rates of return during the study time. The highest average returns of both FIFs and the EQs were observed in 2017. Contrary, the lowest yields of both types of funds occurred in 2018. The EQs provided the higher average return comparing to the market return (SET index) and that of FIFs.

Table 1
The descriptive statistics of annualized returns of FIFs, EQs, and SET
Index from 2014 to 2018

Year	Mean (%)			Median (%)			Maximum (%)			Minimum (%)		
	FIF	EQ	SET	FIF	EQ	SET	FIF	EQ	SET	FIF	EQ	SET
2014	3.61	17.16	15.32	3.87	15.97	6.35	37.00	33.92	7.96	-32.23	1.28	-5.55
2015	-3.01	-9.01	-13.99	-0.90	-8.24	-2.31	21.97	4.71	0.55	-36.57	-24.94	-10.34
2016	3.06	19.00	19.79	2.14	18.65	3.34	54.32	30.32	9.29	-17.22	8.40	2.65
2017	17.97	22.36	13.66	17.09	19.99	3.45	35.29	118.46	6.25	1.64	9.27	-0.02
2018	-13.60	-9.65	-10.82	-13.56	-8.90	-10.96	-5.87	-2.65	10.08	-24.24	-22.85	-10.96
five years avg.	1.61	7.97	4.79	1.14	2.35	2.37	54.32	118.46	10.08	-36.57	-24.94	-10.96

The quarterly risk adjusted returns between 2014 - 2018 were then computed through Sharpe, Treynor and Jensen, Tracking Error and Information ratios. It was found that the EQs had higher return rate and had higher information ratio comparing to that of FIFs. From Table 2, it was also showed that tracking error value of the FIFs was higher than that of the EQs.

Table 2
Sharpe, Treynor, Jensen, Tracking Error and the Average Information Ratio of the
selected foreign investment funds and equity funds

year	Sharpe		Treynor		Jensen		Tracking Error		Information ratio	
	FIFs	EQs	FIFs	EQs	FIFs	EQs	FIFs	EQs	FIFs	EQs
2014	-0.1631	0.354	0.2283	0.0213	-0.0103*	0.0037	0.0942	0.0251	-0.3028	0.1092
2015	-0.2526	-0.8843	-0.0168	-0.0487	0.0451***	0.0027	0.0713	0.031	0.4297	0.4209
2016	-0.1088	0.8686	0.0079	0.046	0.0204**	0.0093**	0.0861	0.0309	-0.4451	-0.0662
2017	0.7517	0.8962	0.568	0.0319	0.0263***	0.0319***	0.044	0.0276	0.2133	0.4419
2018	-0.7751	-0.4342	-0.1948	-0.0394	-0.0393***	-0.0394	0.0889	0.0248	-0.1088	0.1082
five years avg.	-0.1769	0.0117	-0.0374	0.0008	-0.0107***	0.0053***	0.0788	0.0279	-0.0926	0.2051

Remarks: ***, **, * are statistically significant at levels 0.01, 0.05 and 0.10, respectively; calculated from the quarterly yields

2. Findings of the performance persistence of the FIFs and the EQs

Table 3 shows the performance persistence for two consecutive investment periods of FIFs and the EQs from 2014 to 2018 benchmarked by the market rate of return. During 2017 to 2018, both types of funds could keep their performance persistence by continuously beat the market. When looking at the performance persistence using median values as presented in table 4, it was found that during 2014 to 2015 were the time that the FIFs had the highest performance persistence whereas the EQs later gained their highest performance persistence during 2017 to 2018. In addition, when considering the performance persistence using the market return. Between 2017-2018, both FIFs and EQs were able to continuously maintain their performance persistence the most, seven FIFs (15.91 percent) and 15 EQs (50 percent) were able to consecutively outperform the market for two years. Both types of funds continue to perform well when compared to the median return during 2017-2018 as showed in table 5.

Table 3

The performance persistence between the FIFs and the EQs comparing to the market return

Year	Foreign Investment Funds				Domestically Invested Equity Funds			
	Higher		Lower		Higher		Lower	
	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage
2014-2015	1	2.27	6	13.64	11	36.67	3	10
2015-2016	1	2.27	2	4.55	7	23.33	3	10
2016-2017	4	9.09	9	20.45	9	30	4	13.33
2017-2018	7	15.91	7	15.91	15	50	2	6.67

Table 4

The performance persistence of FIFs and the EQs comparing with the median values of the return rates

Year	Foreign Investment Funds				Domestically Invested Equity Funds			
	Higher		Lower		Higher		Lower	
	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage
2014-2015	12	27.27	12	27.27	8	26.67	6	20
2015-2016	9	20.45	9	20.45	7	23.33	7	23.33
2016-2017	9	20.45	9	20.45	9	30	9	30
2017-2018	11	25	10	22.73	9	30	9	30

Table 5

The performance persistence of FIFs and the EQs comparing with the average of the return rates

Year	Foreign Investment Funds				Domestically Invested Equity Funds			
	Higher		Lower		Higher		Lower	
	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage	Numbers of Fund	Percentage
2014-2015	17	38.64	10	22.73	9	30	10	33.33
2015-2016	10	22.73	7	15.91	6	20	7	23.33
2016-2017	6	13.64	9	20.45	7	23.33	5	16.67
2017-2018	7	15.91	9	20.45	12	40	5	16.67

When considering the performance persistence of both types of fund at the study period using Spearman rank correlation, it could not clearly indicate that the majority of both types of funds could maintain the same return rate the year after. It was found that the performance persistence of the FIFs was statistically significant inconsistent during 2015 to 2016.

Table 6
Spearman rank correlation values of the FIFs and the EQs from 2014 to 2018

Year	Spearman rank correlation	
	FIFs	EQs
2014-2015	0.169	-0.079
2015-2016	-0.420**	0.009
2016-2017	0.029	0.0163
2017-2018	-0.213	-0.015

Remarks: ***, **, * are statistically significant at levels 0.01, 0.05 and 0.10, respectively

CONCLUSIONS

After investigating both types of mutual funds, the data portrayed that the average total rate of return of the funds were correlated with the market return rate. In terms of the FIFs, the study was conducted with 44 FIFs during 2014 to 2018. The findings indicated that the average return of FIFs was lower than the market return. 2015 was the year that the FIFs provided the highest average total return rate, whereas 2018 was the year that the FIFs provided the lowest average total return rate. After the risk adjusted using Sharpe and Treynor ratios, the findings showed a similar result, namely, 2017 was the year that the FIFs provided the highest return rate. However, when using Jensen ratio, instead of 2017, it was 2015 that the FIFs provided the highest return rate. In addition, 2018 was the year that the FIFs provided the lowest yield after the risk adjustment, confirmed by Sharpe, Traynor and Jenson Ratios.

Regarding the portfolio performance of 30 EQs, the data showed that these types of funds provided the better average total return rate comparing to the market rate. 2017 was the year that they provided the highest yield, whereas 2018 was the year that they provided the lowest yield. However, the overall average return rate was better than the market rate. After the risk adjusting using Sharpe and Jensen ratio, the results still confirmed that the highest return was observed in 2017. However, the result from Treynor ratio showed that 2016 was the year that the funds provided the highest yield. Sharpe, Treynor and Jenson ratios were all illustrated the similar result that 2015 was the year that the funds provided the lowest yield.

In terms of tracking error and information ratios, the data portrayed that the FIFs had higher tracking error value comparing to the EQs, implying that the returns of FIFs were more volatile around the market return. The findings also showed that during 2014 to 2018, the FIFs had lesser information ratio value comparing to that of EQs, implying that under the similar level of risk, the EQs provided a better yield than the FIFs. When considering the return rate after the risk adjustment for five 5 years from 2014 to 2018 through different ratios, the results were similar as the EQs had better performance comparing to the FIFs. During 2014 to 2019, the FIFs contained higher total risks comparing to that of the EQs. However, the EQs contained more systematic risks comparing to that of FIFs.

The years that EQs and FIFs were able to consistently outperform the benchmarks were during the periods 2014-2015 and 2017-2018. In terms of persistence of beating the market ability, the majority of EQs and FIFs could consistently outperform the SET index for two

consecutive years in 2017-2018. Regarding persistence measure using Spearman rank correlation, there is no evidence that any fund can consistently preserve its rank for two consecutive years. However, between 2015-2016, the results show the negative correlation for FIFs implying that the 2015 winner (loser) would turn loser (winner) in 2016.

Further studies might include a wider spectrum of mutual funds with different investment policies to draw a broader picture of risk-return perspectives. In addition, a longer time horizon might reflect a better picture of fund returns on a longer-term performance persistence.

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