PERFORMANCE EVALUATION OF MUTUAL FUNDS IN INDIA

Dr.S.M.ALAGAPPAN, Ph.D

Associate professor in Commerce, Arumugam Pillai Seethai Ammal College, Tiruppattur, Sivagangai District - 630211

Abstract

It is said that 'necessity is the mother of invention'. Innovation has always been the spirit of human nature. In the financial sector also, several new instruments have been innovated in tune with market needs. The constraints of banks to provide growth with market yields for the investors' section of society has given birth to one more new instrument, the mutual fund. Investing in mutual funds has an inherent risk. Before investing in a particular fund, a comparison of the risks and returns should be made by the investor. Investment performance measurement methods quantify how much return the investment has earned, how was it earned and what were the risks taken. Performance evaluation of mutual funds is conducted using Sharpe's measure, Treynor's measure and Jensen's measure. This paper aims to know how the performance of mutual funds is assessed and ranked after analysing the NAV and their returns. For the purpose of this study, 12 open ended equity based growth mutual funds were selected as the sample. These schemes were analysed over a period of one year i.e., from 1.1.2018 to 31.12.2018. The study produced sufficient information of risk and return associated with fund and their rank depending on their performance. This will ultimately help investors to choose the best mutual fund generating maximum return with minimum risk.

Keywords: Index, Beta, standard deviation, annual returns, market returns, risk free rate.

INTRODUCTION

Development of an economy necessarily depends upon its financial system and the rate of new capital formation, which can be achieved by mobilizing savings and adopting an investment pattern. Savings form an important source of capital formation. Considered as the safest of all options, banks have been the roots of the financial systems in India. Today the interest rate structure is headed southwards, keeping in line with global trends. The inflation is creeping up, which means the value of money saved goes down instead of going up. This effectively mars any chance of gaining from investment in banks. Just like banks, Post-offices offer scope for investment. The investments are safe. They attract the attention of small, retail investors. This option too is likely to loose attraction on account of reduction in the rates offered. Another oft-used route to invest has been the fixed deposit schemes floated by companies. The safer a company is rated, the lesser the return offered. However, there are several potential road blocks. The danger of financial position is not understood by the investors. Liquidity is a major problem. Safety of principal amount has been found lacking. These options are essential for risk-averse people who think of safety. For the brave, stock markets provide an option to invest in a high risk and high return shares. People generally are clueless as to how the stock market functions and in the process can endanger the hard-earned money. For those who are not adept at understanding the stock market, mutual funds come into picture. Investing in mutual fund solves the issue of 'where' to invest. Small investments, over a period of time, result in large wealth and help fulfill our dreams and aspirations. Mutual funds can offer the advantages of diversification and professional management.

REVIEW OF LITERATURE

Dr.Choudhary and Preeti Chawla (2014) [1] in the article, "Performance Evaluation of Mutual Funds: A Study of Selected Diversified Equity Mutual Funds in India" compared the performance of 8 mutual fund schemes comprising of all equity diversified funds over a period of 8 years (2005-2013). According to the study, the performance of mutual fund in terms of average returns, seventy five percent of the diversified fund schemes have shown higher and superior returns.

Tariq Imran, Chaubey and Nawab Ali (2015)[2] in the paper 'An Empirical Study on Indian Mutual Funds Equity Diversified Growth Schemes and their Performance Evaluation' have evaluated thirteen most preferred public and private sector equity diversified growth schemes over a period of 2007-08 based on the ratios namely Sharpe's, Treynor's and Jenson's. In the study, it was found that none of the funds can be straightway declared best or worst performer. The study found very peculiar condition which is due to the fact that the market crashed during the middle of January'2008.

Alka Solanki (2016) [3] in his paper, "A Study of Performance Evaluation of Mutual Fund and Reliance Mutual Fund" evaluated the performance of Reliance open-ended equity schemes with growth option over a period of 2007-16. He concluded that out of the total schemes studied, all schemes showed an average return higher than in comparison to the market return except Reliance Focused Large Cap Fund. His study suggested that a study can also be made for the evaluation of Bank sponsored Mutual fund or Institution along with the comparative study.

Ravichandran and Jeyaraj(2017) [4] conducted a study on performance evaluation of mutual fund schemes in India. This study evaluated the performance of 20 mutual fund schemes over a time period of 2013-2017. The study suggested that the investors who are interested in consistent returns also can invest in reliance diversified power sector fund, among all the other selected mutual funds.

Mamta and Ohja (2017) [5] carried out a study entitled "Performance Evaluation of Mutual Funds: A Study of Selected Equity Diversified Mutual Funds in India". Apart from evaluating the performance of Indian equity diversified mutual funds, this study analysed the relationship between risk and return of these funds, based on total risk and systematic risk. The study concluded that majority of funds selected for study have outperformed under Sharpe's ratio as well as Treynor's ratio.

---

1. Dr.Choudhary and Preeti Chawla, " Performance Evaluation of Mutual Funds: A Study of Selected Diversified Equity Mutual Funds in India", International Conference on Business, Law and Corporate Social Responsibility (ICBLCSR'14), Oct 1-2, 2014, Phuket (Thailand)

2. Tariq Imran, Chaubey, Nawab Ali, "An Empirical Study on Indian Mutual Funds Equity Diversified Growth Schemes and their Performance Evaluation", International Journal of Research in IT, Management and Engineering, Vol 2, Issue 2, ISSN: 2249-1619, July 2015.

3. Alka Solanki, "A Study of Performance Evaluation of Mutual Fund and Reliance Mutual Fund", Abhinav National Monthly Referred Journal of Research in Commerce & Management, ISSN: 2277-1166, Vol.5, Issue 5, May 2016.

4. Ravichandran and Jeyaraj, "A Study on Performance Evaluation of Mutual Fund Schemes in India", International Journal of Advanced Education and Research, ISSN: 2455-5746, Vol 2; Issue 3; May 2017, p 52-55

5. Mamta and Ohja, "Performance Evaluation of Mutual Funds: A Study of Selected Equity Diversified Mutual Funds in India", IMPACT: International Journal of Research in Business Management, Vol, 5, Issue 11, Nov 2017

OBJECTIVES OF THE STUDY

- To gain a knowledge about risk-return analysis
- To know about the mutual funds which performed well in a short-term period of one year.
- To compare the performance of selected mutual funds using traditional investment measures.

RESEARCH METHODOLOGY

Sources of data

All the data required for this study have been obtained mainly from secondary sources. Secondary data have been collected from the websites of Bombay Stock exchange, money control, value research online, National Stock exchange and mutualfunds india. Also, newspapers, magazines, unpublished research reports served as secondary sources.

Sampling

We have taken the population of 42 mutual fund houses in India. Out of 42, 9 fund houses are selected on asset under management basis. 12 funds across 9 fund houses have been selected on the basis of their average annual returns. Table 1 shows the selected fund houses based on AUM in 2018. For the purpose of this study, twelve equity open ended growth schemes under regular plan based on their annual returns in 2018 are selected as the sample as shown in table 2. The study is conducted over a time period of one year (1.1.2018 to 31.12.2018).

Table No. 1

Selected Fund houses based on AUM in 2018

Fund House	AUM (Rs. 'crores)
ICICI Prudential Mutual Fund	3,10,166
HDFC Mutual Fund	3,06,841
Reliance Mutual Fund	2,40,445
UTI Mutual Fund	1,53,183
Axis Mutual Fund	79,201
Sundaram Mutual Fund	32,789
Invesco Mutual Fund	24,919
Mirae Asset Mutual Fund	19,178
Canara Robeco Mutual Fund	13,334

Table No. 2

Selected funds based on annual returns during 2018

Name of the Mutual fund	Annual returns (%)
Axis Bluechip fund - largecap	7.43
UTI Equity fund - multicap	4.37
Canara Robeco Bluechip equity fund – regular - largecap	4.13
Axis Midcap fund	3.81
Sundaram select focus – focused fund	1.85
Canara Robeco Equity Diversified – regular - multicap	1.42
Sundaram large and midcap fund	0.85
HDFC Top 100 fund - largecap	0.75
ICICI Prudential Multicap fund	0.67
Invesco India Growth Opportunities fund – large and midcap	0.49
Reliance largecap fund	0.30
Mirae Asset largecap fund regular growth	0.22

Tools used

S&P BSE-500 has been taken as the benchmark index for the computation of market return. Yield on 10-Year Government bond as on 31.12.2018 is taken as the surrogate for the risk free rate of return i.e., 7.37%.

SHARPE'S PERFORMANCE INDEX

Sharpe Ratio is used to evaluate the risk-adjusted performance of a mutual fund. This ratio tells an investor how much extra return, one will receive on holding a risky asset. Sharpe ratio is based on standard deviation which in turn is a measure of total risk inherent in an investment.

$$Sp = \frac{Rp - Rf}{\sigma p}$$

σp = portfolio's standard deviation

The greater a portfolio's Sharpe ratio, the better its risk adjusted performance. If the analysis results in a negative Sharpe ratio, it either means that the risk free rate is greater than the portfolio's return, or the portfolio's return is expected to be negative.

Sharpe Ratio Grading Thresholds:

- <1: not good
- 1 – 2 : Good
- 2 – 3 : Better

- > 3: Best

TREYNOR'S PERFORMANCE INDEX:

Treynor ratio is a risk-adjusted measure. It measures the excess return per unit of risk in relation to the market. Treynor ratio is a measurement of efficiency utilising the relationship between annualised risk-adjusted return and risk. Treynor ratio utilises 'market' risk (beta) instead of total risk (standard deviation). The premise underlying the treynor ratio is that systematic risk – the kind of risk that is inherent to the entire market, which should be penalised because it cannot be diversified away.

$$Tp = \frac{Rp - Rf}{\beta p}$$

where

Tp = Treynor's performance index

Rp = Portfolio's actual return during a specified time period

Rf = Risk free rate of return during the same period.

βp = beta of the portfolio

$$\beta p = \frac{Cov.(Ra, Rm)}{Var(Rm)}$$

Ra = Returns of the fund

Cov. (Ra,Rm) = Covariance of the returns of the fund and the market

Var(Rm) = Variance of the market returns

Table No. 3

Analysis of Treynor's performance Index

Rp , Rf	βp	Tp	Assessment of portfolio
Rp > Rf	βp > 0	Positive	Better performance
Rp < Rf	βp > 0	Negative	Poor performance
Rp > Rf	βp < 0	Negative	Best performance
Rp < Rf	βp < 0	Positive	Better performance

JENSEN'S ALPHA:

$$\propto p = Rp - [Rf + \beta p(Rm - Rf)]$$

A superior portfolio manager would have positive α value because of the consistent positive residuals. Inferior managers, on the other hand, would have significant negative α value. If the value is positive, the portfolio is earning excess returns. In other words, a positive value for jensen's alpha means a fund manager has beat the market with his stock picking skills.

DATA ANALYSIS AND INTERPRETATION

Table No. 4

Calculation of the Standard deviation of the portfolio

Name of the fund	Quarterly returns				σ
	Q1 (%)	Q2(%)	Q3(%)	Q4(%)	
Axis Bluechip fund - largecap	-1.83	9.84	-2.17	1.96	5.583
UTI Equity fund - multicap	-1.45	7.78	-2.65	0.53	4.673
Canara Robeco Bluechip equity fund – regular - largecap	-2.35	5.09	0.86	0.13	3.093
Axis Midcap fund	-2.85	1.86	1.09	4.09	2.893
Sundaram select focus – focused fund	-2.75	5.32	0.27	-1.32	3.517
Canara Robeco Equity Diversified – regular - multicap	-4.02	4.31	0.08	0.81	3.418

Sundaram large and midcap fund	-4.05	3.15	-1.60	3.24	3.617
HDFC Top 100 fund - largecap	-6.92	1.76	4.96	0.19	5.021
ICICI Prudential Multicap fund	-4.05	1.31	4.03	-0.70	3.404
Invesco India Growth Opportunities fund – large and midcap	-2.67	2.17	-0.49	1.17	2.116
Reliance largecap fund	-6.46	1.55	3.22	1.82	4.390
Mirae Asset largecap fund regular growth	-6.71	3.74	2.16	0.84	4.633

Table No. 5

Sharpe's performance Index

Name of the fund	Rp(%)	Rf(%)	σ	Sp
Axis Bluechip fund - largecap	7.43	7.37	5.583	**0.0107**
UTI Equity fund - multicap	4.37	7.37	4.673	**-0.6420**
Canara Robeco Bluechip equity fund – regular - largecap	4.13	7.37	3.093	**-1.0475**
Axis Midcap fund	3.81	7.37	2.893	**-1.2305**
Sundaram select focus – focused fund	1.85	7.37	3.517	**-1.5695**
Canara Robeco Equity Diversified – regular - multicap	1.42	7.37	3.418	**-1.7408**
Sundaram large and midcap fund	0.85	7.37	3.617	**-1.8026**
HDFC Top 100 fund - largecap	0.75	7.37	5.021	**-1.3185**
ICICI Prudential Multicap fund	0.67	7.37	3.404	**-1.9683**
Invesco India Growth Opportunities fund – large and midcap	0.49	7.37	2.116	**-3.2514**
Reliance largecap fund	0.30	7.37	4.390	**-1.6105**
Mirae Asset largecap fund regular growth	0.22	7.37	4.633	**-1.5432**

Table 5 reveals that, out of the 12 selected funds, the only fund with positive Sharpe ratio (0.0107) is Axis Bluchip large cap fund. But, this fund with sharpe ratio lower than 1 indicates that return on investment is less than the risk taken. A negative Sharp ratio is hard to interpret. In all other 11 funds, as the investment return is lower than the risk-free rate, the Sharpe ratio is negative. For negative returns, Sharpe ratio is not a particularly useful tool of analysis.

Table No. 6

Calculation of Beta of the portfolio

Name of the fund	Quarterly returns				β
	Q1 (%)	Q2(%)	Q3(%)	Q4(%)	
Axis Bluechip fund - largecap	-1.83	9.84	-2.17	1.96	-0.008
UTI Equity fund - multicap	-1.45	7.78	-2.65	0.53	0.014
Canara Robeco Bluechip equity fund – regular - largecap	-2.35	5.09	0.86	0.13	0.107
Axis Midcap fund	-2.85	1.86	1.09	4.09	-0.140
Sundaram select focus – focused fund	-2.75	5.32	0.27	-1.32	0.165
Canara Robeco Equity Diversified – regular - multicap	-4.02	4.31	0.08	0.81	0.033
Sundaram large and midcap fund	-4.05	3.15	-1.60	3.24	-0.166
HDFC Top 100 fund - largecap	-6.92	1.76	4.96	0.19	0.186
ICICI Prudential Multicap fund	-4.05	1.31	4.03	-0.70	0.193
Invesco India Growth Opportunities fund – large and midcap	-2.67	2.17	-0.49	1.17	-0.040
Reliance largecap fund	-6.46	1.55	3.22	1.82	0.041
Mirae Asset largecap fund regular growth	-6.71	3.74	2.16	0.84	0.092
S&P 500 (SPX) Returns	**-1.22**	**2.93**	**7.20**	**-13.97**	

Table No. 7

Treynor's Performance Index

Name of the fund	Rp(%)	Rf(%)	β	Tp	Rp,Rf	β	Tp	Assessment
Axis Bluechip fund - largecap	7.43	7.37	-0.008	**-7.5**	Rp>Rf	β<0	-	outperformed
UTI Equity fund - multicap	4.37	7.37	0.014	**-214.28**	Rp<Rf	β>0	-	Poor performance
Canara Robeco Bluechip equity fund – regular - largecap	4.13	7.37	0.107	**-30.28**	Rp<Rf	β>0	-	Poor performance
Axis Midcap fund	3.81	7.37	-0.140	**48.83**	Rp<Rf	β<0	+	Better performance
Sundaram select focus – focused fund	1.85	7.37	0.165	**-33.45**	Rp<Rf	β>0	-	Poor performance
Canara Robeco Equity Diversified – regular - multicap	1.42	7.37	0.033	**-180.30**	Rp<Rf	β>0	-	Poor performance
Sundaram large and midcap fund	0.85	7.37	-0.166	**39.28**	Rp<Rf	β<0	+	Better performance
HDFC Top 100 fund - largecap	0.75	7.37	0.186	**-35.59**	Rp<Rf	β>0	-	Poor performance
ICICI Prudential Multicap fund	0.67	7.37	0.193	**-34.72**	Rp<Rf	β>0	-	Poor performance
Invesco India Growth Opportunities fund – large and midcap	0.49	7.37	-0.040	**172.00**	Rp<Rf	β<0	+	Better performance
Reliance largecap fund	0.30	7.37	0.041	**-172.43**	Rp<Rf	β>0	-	Poor performance
Mirae Asset largecap fund regular growth	0.22	7.37	0.092	**-77.72**	Rp<Rf	β>0	-	Poor performance

From table no. 7, Invesco India Growth opportunities fund with high positive treynor ratio (172.00) shows that the investment has added value in relation to its risk. On the other hand, Canara Robeco Bluechip fund with high negative treynor ratio (-30.28) has performed worse than a risk free instrument. This fund which has portfolio return less than that of risk-free rate, while the fund's beta remains positive, winds up with negative treynor ratio implying that the fund took on systematic risk but did not exceed the risk free rate. Meanwhile, Axis Bluechip fund with highest negative treynor ratio (-7.5), where the portfolio return exceeds the risk-free rate, but with negative beta implies that the fund outperformed the risk-free rate by betting against the market.

Table No. 8

Jensen's Performance Index

Name of the fund	Rp(%)	Rf(%)	Rm(%)	β	α_p
Axis Bluechip fund - largecap	7.43	7.37	-6.24	-0.008	**-0.050**
UTI Equity fund - multicap	4.37	7.37	-6.24	0.014	**-2.809**
Canara Robeco Bluechip equity fund – regular - largecap	4.13	7.37	-6.24	0.107	**-1.784**
Axis Midcap fund	3.81	7.37	-6.24	-0.140	**-5.465**
Sundaram select focus – focused fund	1.85	7.37	-6.24	0.165	**-3.274**
Canara Robeco Equity Diversified – regular - multicap	1.42	7.37	-6.24	0.033	**-5.501**
Sundaram large and midcap fund	0.85	7.37	-6.24	-0.166	**-8.779**
HDFC Top 100 fund - largecap	0.75	7.37	-6.24	0.186	**-4.088**
ICICI Prudential Multicap fund	0.67	7.37	-6.24	0.193	**-4.073**
Invesco India Growth Opportunities fund – large and midcap	0.49	7.37	-6.24	-0.040	**-7.424**
Reliance largecap fund	0.30	7.37	-6.24	0.041	**-6.512**
Mirae Asset largecap fund regular growth	0.22	7.37	-6.24	0.092	**-5.898**

Table 8 reveals that all the selected fund shows negative alpha. Negative alpha indicates that the portfolio has not earned its required return. Negative alpha indicates that the funds have performed poorly than expected.

Table No. 9
Ranking according to performance Indices

Name of the fund	Ranking		
	Sharpe	Treynor	Jensen
Axis Bluechip fund - largecap	1	1	1
UTI Equity fund - multicap	2	12	3
Canara Robeco Bluechip equity fund – regular - largecap	3	5	2
Axis Midcap fund	4	3	7
Sundaram select focus – focused fund	7	6	4
Canara Robeco Equity Diversified – regular - multicap	9	11	8
Sundaram large and midcap fund	10	4	12
HDFC Top 100 fund - largecap	5	8	6
ICICI Prudential Multicap fund	11	7	5
Invesco India Growth Opportunities fund – large and midcap	12	2	11
Reliance largecap fund	8	10	10
Mirae Asset largecap fund regular growth	6	9	9

Sharpe uses Standard deviation as a measurement of total risk. Treynor uses Beta as a measurement of systematic risk. But for a well-diversified portfolio, the rankings should be same for all performance indices. The only fund that shows similar ranking among the selected funds is Axis Bluechip largecap fund. It ranks high among the selected funds.

FINDINGS

- Axis Bluechip fund has emerged as one of the top performing large-cap funds of 2018. Its outperformance is impressive. Axis Bluechip is expected to provide a solid foundation to a powerful 2019 mutual fund portfolio.

LIMITATIONS OF THE STUDY

Only 12 funds are selected for the study due to time constraints. In addition to equity open ended growth schemes, other schemes may also be considered. Only a simple evaluation was done against the market performance. The time duration of study may be extended to 3 years or 5 years.

CONCLUSION

The year 2018 has been a year of struggle on the performance front. Equity mutual funds have disappointed investors in 2018. The one-year returns were not as impressive, everything except technology funds. Most equity mutual fund categories have given negative returns. High end volatility characterises 2018. Observing annual returns can make us understand risk better and sometimes introduce us a new investment strategy adopted by mutual funds.

REFERENCES

1. Devi V.R and Kumar N.L (2010), "Performance evaluation: A comparative study between Indian and foreign equity mutual funds", Indian Journal of Finance, 4(6), 43-53.
2. Guha S. (2008), "Performance of Indian equity mutual fund and their style benchmarks", The IFCAI Journal of Applied Finance, 14(1), 49-81.

3. Inder S. (2012), "Mutual fund performance: An analysis of Index funds", International Journal of Research in Commerce and Management, 3(9), 143-146.
4. Mannar B.R (2012), "Performance evaluation of some select equity funds floated by private sector banks", International Journal of Research in Commerce and Management, 3(10), 113-117.
5. Ravinderan M and Narayan S (2003), "Performance evaluation of selected Indian mutual funds". Retrieved from http://www.ssrn.com/article no. 107