

Performance Evaluation of Equity Based Mutual Funds in India

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Abstract

The recent financial scandals have made investors wary investing in stock markets. Since then many retail investors are adopting a very cautious approach. Many have become conservative and are using mutual fund route to invest in the market. The Mutual Fund inflows however are beginning to pick up off late with the good performance of Equity Funds. The Balanced Funds are once again increasing their equity proportions anticipating a bull run. The recently introduced benchmarks for Growth Funds have finally provided investors a tool to judge the performance of these flexible funds. Earlier there were benchmarks only for Income Funds. Now SEBI (Securities and Exchange Board of India) along with CRISIL and other research agencies like Value Research have come up with a benchmark specially designed for Growth Funds. These benchmark indices can be used to judge their performance and give the investors accurate data to help them choose the best performing fund to invest their valuable savings in such a volatile stock market scenario prevailing right now in India.

This study provides an insight to investors, as to how to evaluate the performance of Growth Funds in the Indian Mutual Fund industry, and choose the best performing fund. This study has considered top ten mutual funds in India for analyzing the performance. For evaluating their performance market index, Treynor's measure and Sharpe's measure are considered. The selected fund for the study is pure equity fund, so that the data can be analysed completely to get the desired results. The Statistical Tools like Standard Deviation and Beta are used to evaluate the Risk & Return for the individual investors.

Key words – Growth Mutual Funds, Sharpe's measure, Treynor's measure.

1. Introduction

A **Mutual Fund** is a professionally managed type of collective investment scheme that pools money from many investors and invests it in stocks, bonds, short-term money market instruments, and/or other securities. Mutual funds are conceived as institutions for providing small investors with avenues of investments in the capital market. The mutual fund will have a fund manager that trades the pooled money on a regular basis. As of early 2008, the worldwide value of all mutual funds totals more than \$26 trillion.

Small investors generally do not have adequate time, knowledge, experience and resources for directly

accessing the capital market, they have to rely on an intermediary, which undertakes informed investment decisions and provides consequential benefits of professional expertise. Mutual funds have the ability to bring down the transaction costs. The advantages for the investors are reduction in risk, expert professional management, diversified portfolios, and liquidity of investment and tax benefits. By pooling their assets through mutual funds, investors achieve economies of scale. The interests of the investors are protected by the SEBI, which acts as a watchdog. Mutual funds are governed by the SEBI (Mutual Funds) Regulations, 1993.

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The activities of mutual funds have both short-and long-term impact on the savings and capital markets, and the national economy. Mutual funds, thus, assist the process of financial deepening and intermediation. They mobilize funds in the savings market and act as complementary to banking; at the same time they also compete with banks and other financial institutions. In the process stock market activities are also significantly influenced by mutual funds.

2. Literature Review

i. **Carlsen(1970)** evaluated the risk adjusted performance and emphasized that the conclusions drawn from calculations of return depend on the time period, type of fund and the choice of benchmark. Carlsen essentially recalculated the Jensen and Sharpe results using annual data for 82 common stock funds over the 1948-67 periods. He evaluated the predictive value of past results in forecasting future performance. His results contradicted both Sharpe and Jensen.

ii. **Eugene Fama(1972)** developed a methodology for evaluating investment performance of managed portfolios. In this paper he breaks down performance into two dimensions namely 'selectivity' – ability to pick the best stocks of given level of risk and 'timing' – ability to predict general price movement of the market. He uses single period evaluation schemes to work on these new dimensions of performance.

iii. **Amitabh Gupta(2003)**, examines the performance of select mutual funds by using performance measures – rate of return, Sharpe Ratio, Treynor Ratio, Jensen Differential Return Measure and Fama's Components of Investment Performance. The study uses weekly NAV data for 73 mutual fund schemes from April 1, 1994 to March 31, 1999. It is observed that the sample schemes were not adequately diversified. The empirical result indicates a mixed performance of sample schemes. The study found that performance of some private sector funds was superior but there was no conclusive evidence to suggest that performance of

mutual funds was better than the relevant benchmark and the risk and return characteristics of schemes were not in conformity with their stated objectives.

iv. **N P Tripathy(2006)** studied the market timing ability of the mutual fund managers and its impact on the performance of the fund. Her study makes a comprehensive evaluation of equity linked savings schemes. For the purpose the study, equity linked savings schemes have been taken from December, 1995 to January, 2004. A total of 31 schemes over the eight-year period are selected. The following close ended fund from UTI, LIC, Can Bank Mutual Funds have been taken for the study. Her study indicates that Indian Fund managers have not been able to time the market correctly.

v. **Denis O. Boudreaux, S. P. Uma Rao, Lafayette Dan Ward, Suzanne War(2007)** This study examines the annual risk-adjusted returns using Sharpe's Index for ten portfolios of international mutual funds for the period September 2000 through September 2006. The international funds were analyzed by combining the funds into individual portfolios based on sector, geographics and company size. The benchmarks for comparison were the U.S. mutual fund performance reported by MorningStar. The risk-adjusted returns were then determined and compared to each other and to the U.S. market. During this period, nine out of ten of the international mutual fund portfolios outperformed the U.S. market. The portfolio that contained all International Mutual Funds (IMF) significantly outperformed on a risk-adjusted basis the fund that was made up of all of the U.S. stock mutual funds, (All U.S. Stock Funds- USSF). Additionally, the Foreign Small Value (FSV) portfolio, Foreign Small Growth (FSG) portfolio, Emerging Markets (EM) portfolio, Latin America (LA) portfolio, and the Pacific Asia without Japan (PA-J) portfolio all had average annual returns (not adjusted for risk) that exceeded USMF's returns by more than 10 percent.

vii. **Satya Swaroop Debasish(2009)**. He studied open ended equity based mutual funds. The study has considered 23 schemes offered by six private

sector mutual funds and three public sector mutual funds over the time period April 1996 to March 2009 (13 years). The analysis has been made on the basis of mean return, beta risk, coefficient of determination, Sharpe ratio, Treynor ratio and Jensen Alpha. The study concludes that Franklin Templeton and UTI being the best performers and Birla SunLife, HDFC and LIC mutual funds showing poor below-average performance when measured against the risk-return relationship models. The author also feels that further the study should be taken up to compare open ended mutual funds with close ended mutual funds.

3. Objectives of the study

The emerging market scenarios and the affect of the Global Recession have controversial ideas for individual investors seeking good returns for their investments. The Mutual Fund companies have various funds to meet the expectations of the investors. Of all the available funds, Equity funds are known for good returns at an anticipated risk. With the growth of the economy and the capital market in India, the size investor has also increased rapidly. Thus the Government of India introduced economic reforms in the field of trade involvement of mutual funds in the transformation Indian economy has made it urgent to view their services not only as financial intermediary but also as pace setter as they are playing a significant role in spreading equity culture. In this context close monitoring and evaluation of mutual funds has become essential for fund managers to make this instrument as the strongest and most preferred instrument in Indian capital market in the coming years.

In the present volatile and gloomy stock markets, the investors are adopting a "wait-and-watch" policy. By investing in Growth Funds in mutual fund, their proportion of investments in equity is constantly altered to suit the market developments and get the optimum returns.

Several investors have gained as well as lost in the stock market. One way to determine the stock price is fundamental analysis, which in turn

is composed of economy, industry and company. The other way is technical analysis, which says that the past trends will repeat in the future.

The Following have been set out as Objectives of the Study.

- ★ To measure the return earned by the sample mutual funds schemes and compare against the market portfolio returns to distinguish the performers from the laggards.
- ★ To rank the funds according to Sharpe's and Treynor's performance measure.
- ★ To determine whether speculator in India can invest in security by tracing market indices.

4. Research Design and Methodology

Study period is from 1st April 2005 to 31st March 2010. Top ten performing equity based open ended mutual fund are considered for the study. It is a period of five years. The study period starts before the financial markets went into the turmoil and two years after the downturn. The study ranks the mutual fund based on Sharpe's measure and Treynor's measure.

4.1 Data Collection and Sample design

Data collection

The study has used secondary data. This is because the study pertains to historical analysis of reported financial data. The Secondary data is collected from the websites of the organization and from various other websites related to it. The yearly rate of return data of various mutual funds and monthly historical price are collected from www.moneycontrol.com, www.financeyahoo.com, www.amfiindia.com.

Market Index: The yearly BSE sensex data and monthly historical price of sensex are collected from www.moneycontrol.com and www.bseindia.com

Sample design

This study focuses on open ended equity based mutual funds. Their performance is compared with

the benchmark index, in case of this study – BSE Sensex. The top performers ranked by moneycontrol.com website. Top ten performing mutual funds has been taken to evaluate their performance vis-à-vis benchmark index BSE Sensex.

Selected Mutual Funds at a Glance:

1. Prudential ICICI Mutual Fund
2. Kotak Mahindra Mutual Fund
3. Birla Sun Life Mutual Fund
4. HDFC Mutual Fund
5. LIC Mutual Fund
6. Morgan Stanley India Mutual Fund
7. Sahara Mutual Fund
8. Tata Mutual Fund
9. UTI Mutual Fund
10. Franklin Templeton India Mutual Fund

5. Statistical Tools used to Analyse the Data

a. Returns of the Mutual Fund Scheme: The return on an investment consists of two parts, viz.

- ▣ Dividends (Periodic cash receipts)
- ▣ Capital Gain / Loss (Change in the Price of an asset)

Since the dividends paid on the mutual fund have already been adjusted in its NAV's, the monthly returns on the mutual fund can be calculated by finding out the capital gain/loss based on its NAV's. So the returns can be calculated as follows:

$$R_{pt} = \frac{NAV_t}{NAV_{t-1}} - 1$$

Where, R_{pt} : Return on the Mutual Fund scheme (Portfolio) for period't'.

NAV_t : Average Net Asset Value of the month 't'.

NAV_{t-1} : Average Net Asset Value of the previous month.

b. Return on the Benchmark Index: The benchmark index chosen for Balanced Funds is the **S&P CNX Nifty**. This index is a good reference to measure the performance of Balanced Funds in the market as comprises of right mix of equity and debt in its portfolio and is considered a standard against which most Balanced Funds returns are judged.

The return on this benchmark index can be calculated as follows:

$$\frac{I_t}{I_{t-1}} - 1$$

I_t : Average Index value of the month 't'.

I_{t-1} : Average Index value of the previous month.

c. Average Return of the Mutual Fund scheme:

$$AR_p = \frac{\sum_{i=1}^n R_p}{n}$$

R_p : Average return of the Balanced Funds

Where: AR_p : Average return of the Mutual Fund Scheme.

n : number of months.

d. Average Return of the Benchmark Index:

$$AR_m = \frac{\sum_{i=1}^n R_m}{n}$$

Where: R_m : Return on the benchmark index, which is the CRISIL Balanced Fund Index.

Where: AR_m : Average return of the benchmark index.

n : number of months.

e. Standard Deviation (Risk) of the Fund:

$$\sigma_p = \left[\frac{n \sum R_p^2 - (\sum R_p)^2}{n^2} \right]^{1/2}$$

Where: σ_p : Risk of the Fund.

R_p : Return of the fund.

f. Standard Deviation (Risk) of the Benchmark Index:

$$\sigma_m = \left[\frac{n \sum R_m^2 - (\sum R_m)^2}{n^2} \right]^{1/2}$$

Where: σ_m : Risk of the benchmark index.

R_m : Return of the benchmark index.

g. Beta ($\hat{\alpha}$) of the Fund:

$$\beta_p = \frac{\sum_{i=1}^n [(R_p - AR_p)(R_m - AR_m)]}{\sum_{i=1}^n [R_m - AR_m]^2}$$

Where: β_p : Beta of the fund.

R_p : Return of the fund.

AR_p : Average return of the Mutual Fund Scheme.

AR_m : Average return of the benchmark index.

h. The Treynor Measure:

Developed by Jack Treynor, this performance measure evaluates funds on the basis of Treynor's Index. This Index is a ratio of return generated by the fund over and above risk free rate of return

(generally taken to be the return on securities backed by the government, as there is no credit risk associated), during a given period and systematic risk associated with it (beta). Symbolically, it can be represented as:

$$\text{Treynor's Measure (T}_i\text{)} = (R_i - R_f) / \beta_i$$

Where, R_i : represents return on fund,

R_f : risk free rate of return and

β_i : beta of the fund.

All risk-averse investors would like to maximize this value. While a high and positive Treynor's Index shows a superior risk-adjusted performance of a fund, a low and negative Treynor's Index is an indication of unfavorable performance.

i. The Sharpe Measure:

In this model, performance of a fund is evaluated on the basis of Sharpe Ratio, which is a ratio of returns generated by the fund over and above risk free rate of return and the total risk associated with it. According to Sharpe, it is the total risk of the fund that the investors are concerned about. So, the model evaluates funds on the basis of reward per unit of total risk. Symbolically, it can be written as:

$$\text{Sharpe's Measure (S}_i\text{)} = (R_i - R_f) / \sigma_i$$

Where, σ_i is Standard Deviation of the fund.

While a high and positive Sharpe Ratio shows a superior risk-adjusted performance of a fund, a low and negative Sharpe Ratio is an indication of unfavorable performance.

Comparison of Sharpe and Treynor

Sharpe and Treynor measures are similar in a way, since they both divide the risk premium by a numerical risk measure. The total risk is appropriate when we are evaluating the risk return relationship for well-diversified portfolios. On the other hand, the systematic risk is the relevant measure of risk when

we are evaluating less than fully diversified portfolios or individual stocks. For a well-diversified portfolio the total risk is equal to systematic risk. Rankings based on total risk (Sharpe measure) and systematic risk (Treyner measure) should be identical for a well-diversified portfolio, as the total risk is reduced to systematic risk. Therefore, a poorly diversified fund that ranks higher on Treynor measure, compared with another fund that is highly diversified, will rank lower on Sharpe Measure.

6. Results

Market is performing well. It is showing a return of 77.53%. Market has the standard deviation of 49.38%(Table – 1), which can be considered moderate and the investors having low risk appetite may not be interested in investing in equity fund.

ICICI Prudential is ranked number one with both Treynor's measure (97.53) (Table – 4, Graph -2) and Sharpe's measure (1.83) (Table – 3, Graph – 1). ICICI is performing well with its balanced risk and return with 66.42% and 128.9% respectively. The Price volatility may be moderate or high as the beta value is 1.246.

LIC Mutual Fund avenues have high risk 21.38% compared to their returns which is only 1.3%, (Table -1)

Templeton India Mutual fund and HDFC Mutual Fund can also prove to be better performing mutual fund as compared with other Mutual funds with returns 100.4% against 55.67% risk & 101.7% return against 55.93% risk (Table – 1).

High beta values are best to own in a strong bull market, but worst in bear markets. Here ICICI prudential, HDFC and Templeton India are best to be owned in strong bull markets (Table – 1).

The table - 3 shows the ranking of mutual fund companies based on the sharpe's ratio. ICICI Prudential is the best compared to other mutual fund companies and LIC is the least rank and less performance in case of sharpe's measure.

The table - 4 shows the ranking of mutual fund companies based on the Treynor's ratio. ICICI Prudential mutual fund is the best compared to other mutual fund companies and LIC mutual fund is the least rank and less performance in case of Treynor's measure.

7. Suggestion and Conclusion

The Asset Management Companies should reconstruct the portfolios so as to suit the present market condition for those investors seeking maximum regular income. The Portfolios should be regularly inspected and evaluated. Such evaluated portfolio information should be supplied to the investors for their reference and information.

Educating the investors and giving them an opportunity to evaluate the performance of mutual funds holds key to mobilize investment from the small investors. The risk management systems and the benchmarking of indices should be improved by AMFI to give the investors more guidelines and tools to take a good investment decision.

High Returns are always accompanied by high Risk. Hence, the mutual fund companies should clearly indicate the maximum level of risk involved in investments as investors have now become very conservative and choosing risk free investments.

SUMMARY

It is examined that investment performance of Indian Mutual Fund in terms of performance measures, some funds shows conformity with the relationship of return and risk. Some funds do not demonstrate this relationship. Some funds have out performed both in terms of Treynor measure and Sharpe measure.

It becomes increasingly necessary to periodically monitor and evaluate performance as objectively as can. More importantly, such evaluation should provide meaningful feedback for improving the quality of the investment management process on continuing basis. In particular, it should help in articulating the investment objectives with greater clarity, sharpening the investment strategy and refining the methods of security selection. Value of experience that matters.

Annexure – I

Performance Evaluation of Equity Based Mutual Funds in India

Table – 1

Mutual Fund	Returns %	Standard Deviation (σ)%	β
ICIC prudential	128.9	66.42	1.246
Kotak Mahindra	63.5	48	0.945
Birla Sunlife	84.5	55.29	1.105
HDFC	101.7	55.93	1.101
LIC	1.3	21.38	0.286
Morgan Stanley	78	50.83	1.024
Sahara	67.3	44.15	0.882
Tata	86.9	56.51	1.109
UTI	82.9	47.14	0.925
Templeton India	100.4	55.67	1.082
Market Index	77.53	49.38	1

Note: β of Market Index will always be 1

Table – 2

STOCK	TREYNOR	SHARPE
ICICI prudential	97.53	1.83
Kotak Mahindra	59.39	1.17
Birla Sun life	69.79	1.40
HDFC	85.67	1.69
LIC	-21.26	-0.28
Morgan Stanley	68.96	1.39
Sahara	67.94	1.36
Tata	71.70	1.41
UTI	81.64	1.60
Templeton India	85.97	1.67
Market Index	70.15	1.42

Graph 1

Graphical Presentation of Shape's Measure

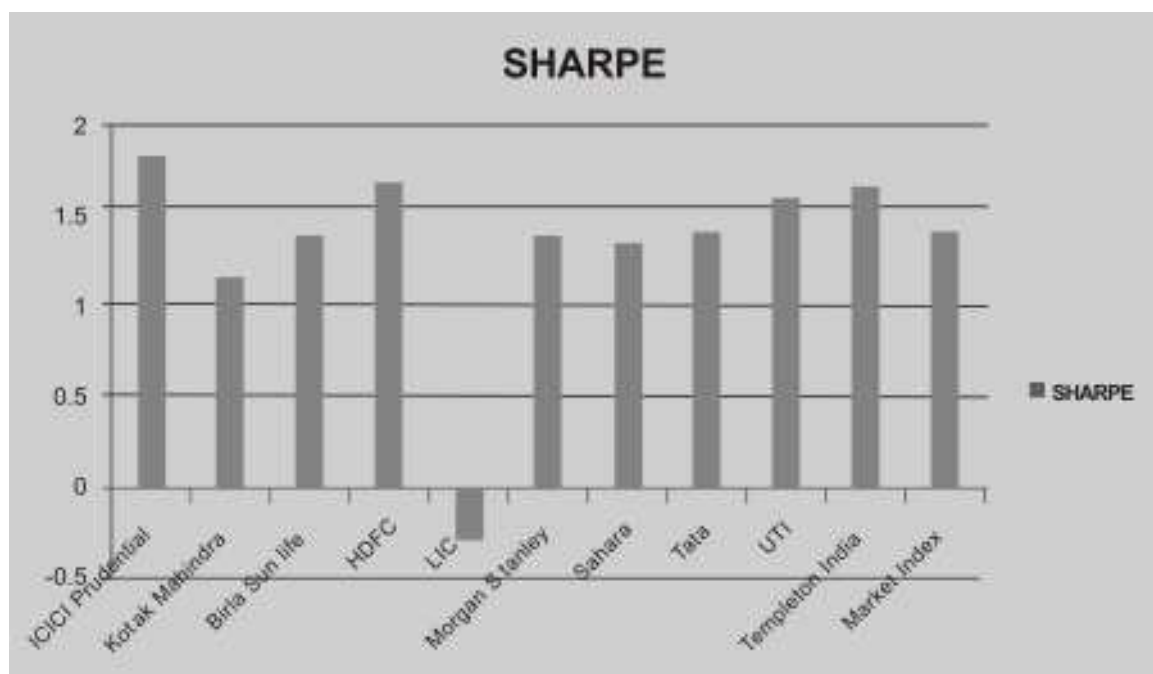


Table – 3

Ranking of the Mutual Funds (Sharpe's Measure)

Mutual Fund	SHARPE	RANK
ICICI prudential	1.44	1
Kotak Mahindra	1.17	10
Birla Sunlife	1.40	7
HDFC	1.69	2
LIC	-0.28	11
Morgan Stanley	1.39	8
Sahara	1.36	9
Tata	1.41	6
UTI	1.60	4
Templeton India	1.67	3
Market Index	1.42	5

Graph – 2
Graphical Presentation of Treynor's Measure

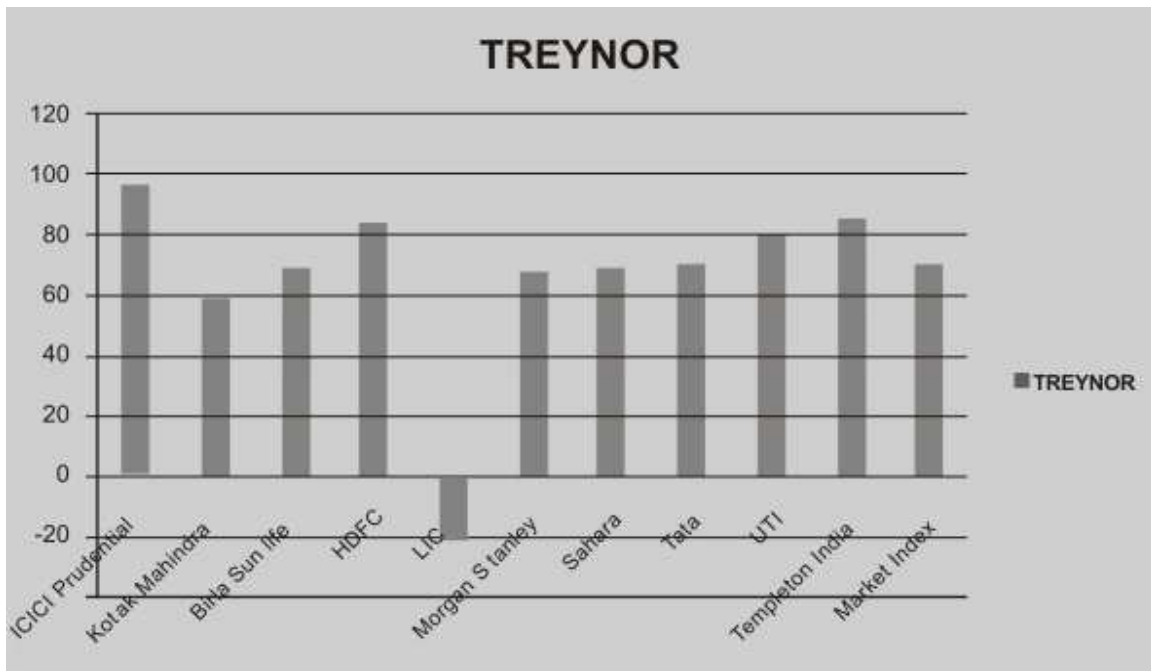


Table – 4

Ranking of the Mutual Funds (Sharpe's Measure)

Mutual Fund	TREYNOR'S	RANK
ICIC prudential	72.05	1
Kotak Mahindra	59.39	10
Birla Sunlife	69.79	7
HDFC	85.67	3
LIC	-21.26	11
Morgan Stanley	68.96	8
Sahara	67.94	9
Tata	71.70	5
UTI	81.64	4
Templeton India	85.97	2
Market Index	70.15	6

REFERENCES

1. Tripathy (2006), "Market Timing Abilities and Mutual Fund Performance – An Empirical Investigation into Equity Linked Savings Schemes", Vilakshan, XIMB Journal of Management, pp127-138
2. Gupta Amitabh(2003), "Investment Performance of Indian Mutual Funds: An Empirical Study", Indian Journal of Finance and Research, vol.13, No.1&2, PP.15-30, Jan&July 2003.
3. Carlson, R., (1970) "Aggregate Performance of Mutual Funds, 1948-1967", Journal of Financial and Quantitative Analysis, 5(1), pp.1-31.
4. Sathya Swaroop Debasish(2009), "Investigating Performance of Equity Based Mutual Funs Schemes in Indian Scenario", KCA Journal of Business Management, vol. 2, No.2, pp.1-15.
5. Denis O. Boudreaux, S. P. Uma Rao, Lafayette Dan Ward, Suzanne Ward(2007), "Empirical Analysis of International Mutual Fund Performance", International Business & Economics Research Journal Vol.6, No.5 19
6. Fama, Eugene F., (1972) "Components of Investment performance," Journal of Finance, Vol.27, No.3, pp.551-67