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A Study on Comparative Analysis of Mutual Fund Scheme

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ABSTRACT: Sharpe Index Model is used to evaluate the performance of the most preferred chosen randomly the public and private sector mutual funds schemes in India. Statistical tools are also used to calculate some measures of interest of the different mutual funds schemes.

KEYWORDS: mutual fund scheme, comparative analysis, statistics, measure

I. INTRODUCTION

1.1 Introduction The mutual fund industry in India started in 1963 with the formation of Unit Trust of India, at the initiative of the Government of India and Reserve Bank of India. The history of mutual funds in India can be broadly divided into four distinct phases 1.2 First Phase - 1964-1987 Unit Trust of India (UTI) was established in 1963 by an Act of Parliament. It was set up by the Reserve Bank of India and functioned under the Regulatory and administrative control of the Reserve Bank of India. In 1978 UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. The first scheme launched by UTI was Unit Scheme 1964. At the end of 1988 UTI had Rs. 6,700 crore of assets under management. 1.3 Second Phase - 1987-1993 (Entry of Public Sector Funds) 1987 marked the entry of non-UTI, public sector mutual funds set up by public sector banks and Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC). SBI Mutual Fund was the first non-UTI Mutual Fund established in June 1987 followed by Can bank Mutual Fund (Dec 87), Punjab National Bank Mutual Fund (Aug 89), Indian Bank Mutual Fund (Nov 89), Bank of India (Jun 90), Bank of Baroda Mutual Fund (Oct 92). LIC established [1,2,3] its mutual fund in June 1989 while GIC had set up its mutual fund in December 1990. At the end of 1993, the mutual fund industry had assets under management of Rs. 47,004 crore. 1.4 Third Phase - 1993-2003 (Entry of Private Sector Funds) With the entry of private sector funds in 1993, a new era started in the Indian mutual fund industry, giving the Indian investors a wider choice of fund families. Also, 1993 was the year in which the first Mutual Fund Regulations came into being, under which all mutual funds, except UTI were to be registered and governed. The erstwhile Kothari Pioneer (now merged with Franklin Templeton) was the first private sector mutual fund registered in July 1993. The 1993 SEBI (Mutual Fund) Regulations were substituted by a more comprehensive and revised Mutual Fund Regulations in 1996. The industry now functions under the SEBI (Mutual Fund) Regulations 1996. The number of mutual fund houses went on increasing, with many foreign mutual funds setting up funds in India and also the industry has witnessed several mergers and acquisitions. At the end of January 2003, there were 33 mutual funds with total assets of Rs. 1, 21,805 crore. The Unit Trust of India with Rs. 44,541 crore of assets under management was way ahead of other mutual funds. 1.5 Fourth Phase - Since February 2003 In February 2003, following the repeal of the Unit Trust of India Act 1963 UTI was bifurcated into two separate entities. One is the Specified Undertaking of the Unit Trust of India with assets under management of Rs. 29,835 crore as at the end of January 2003, representing broadly, the assets of US 64 scheme, assured return and certain other schemes. The Specified Undertaking of Unit Trust of India, functioning under an administrator and under the rules framed by Government of India and does not come under the purview of the Mutual Fund Regulations. The second is the UTI Mutual Fund, sponsored by SBI, PNB, BOB and LIC. It is registered with SEBI and functions under the Mutual Fund Regulations. With the bifurcation of the erstwhile UTI which had in March 2000 more than Rs. 76,000 crore of assets under management and with the setting up of a UTI Mutual Fund, conforming to the SEBI Mutual Fund Regulations, and with recent mergers taking place among different private sector funds, the mutual fund industry has entered its current phase of consolidation and growth.

II. DISCUSSION

“Standard Deviation is a measure of overall risk of the fund returns. It shows the volatility of returns. Investors ideally prefer lower volatility of returns i.e. lower standard deviation”. Standard Deviation of the Nippon India fund is 24.95 & that for benchmark is 13.48. So overall risk for Nippon India Tax saver fund is much higher compared to the benchmark index i.e. S&P BSE 100. “Correlation coefficient signifies the magnitude & direction of the relationship between two variables”. The value of 0.9194 indicates that there exists a very high positive [4,5,6] correlation between



the fund returns & the benchmark returns. Hence in case of positive returns from the benchmark, the fund also is likely to give positive returns & vice versa. So it's a positive sign for Nippon India Tax saver fund. In investing, R-squared value is an indicator of how much percentage of the variation in fund's returns is explained by the variation in benchmark index return. So in this case, 84.54% of the variation in funds returns is explained by the variation in benchmark index returns. That means, this fund closely tracks the benchmark index S&P BSE 100. It has least standard deviation i.e. overall risk which is a good sign for investors, highest value of coefficient of correlation & Rsquared signifying its close tracking of the benchmark index which again is a good sign. Also it has least value of Beta i.e. systematic risk which is again a good sign. It signifies that this fund is least volatile with respect to fluctuations in major parameters of the economy i.e. interest rates, unemployment level, inflation etc. Hence, from the investors' point of view, LIC MF Tax saver plan is the best bet amongst the select mutual fund schemes in tax saver category. HSBC Tax saver equity fund has second best value of average return, std. deviation, co-variance, Karl Pearson's coefficient of correlation, R-squared & Beta value. Hence after LIC MF Tax saver fund, the investors should prefer investing in HSBC Tax saver equity fund. Nippon India tax saver fund has lot of scope for improvement. It has given least average return & highest value for standard deviation i.e. overall risk for investors. Which is worst case. Coefficient of correlation is least amongst select three funds so also R-squared value. Beta value for this fund is maximum amongst select funds i.e. 1.57 which signifies maximum systematic risk. This is again a bad sign from investors' point of view. So the investors should avoid investing in this fund.

III. RESULTS

Mutual fund industry in India has revealed a significant growth since its inception in the year 1963 even then it is far behind the developed as well as most of the emerging markets operating globally. One of the most important functions of the mutual fund industry is to mobilize the savings of the households and park their small savings in capital assets with the aim to provide them better risk adjusted return. The present study has tried to compare the return, net flow and expenses ratio of the broadly classified mutual funds i.e. large cap, mid cap and small cap. Data on the selected variables have been taken for the period of 11 years from 2011 to 2021 and analyzed using one way anova. Outcomes of the study revealed that the mean return of small cap funds is highest followed by mid cap and large cap. On the basis of the outcomes this study concluded that in present there is no significant difference among the return of large cap, mid cap and small cap funds. For the variable net flow this study revealed that the average net flow of large cap funds is highest followed by small cap and mid cap funds. On the basis of the outcomes this study concluded that there is a significant difference among the net flow of large cap, mid cap and small cap funds. Average expenses of large cap funds are found lowest followed [7,8,9] by small cap and mid cap funds. On the basis of the outcomes this study concluded that there is a significant difference among the expenses ratio of large cap, mid cap and small cap funds.

Mutual fund history in India started in the year 1963 with the formation of company named Union Trust of India (UTI). This was a joint initiative between the Government of India and Reserve bank of India. The objective behind the formation of the company was to guide the small investors who aimed to buy shares, debentures and other financial products in large companies. The first ever Mutual fund Scheme launched by UTI in the country was in 1964 known as the Unit Scheme 1964 [1].

Impact of Covid -19 on Mutual Fund Industry

The extra-ordinary progress of Indian mutual fund industry can be seen in the growth of its Asset under Management (AUM) from Rs.25 crores in 1964 to Rs.22.26 lakh crores in March 2020. But the outbreak of the pandemic COVID-19 has affected the mutual fund industry.

It was observed that the New Fund offers (NFO) has decreased insignificantly after the outbreak. The number of NFOs was six in February 2020, which further dropped to just one in March 2020 and nil in April 2020. This decline was due to weak market sentiments and declining investor confidence.

The overall industry AUM has decreased by 6.91% in April 2020 compared to April 2019 and Individual investors hold 52.1% of industry assets in April 2020 compared to 54.7% in April 2019. The value of assets held by individual [10,11,12] investors has decreased by 11.35% in April 2020 compared to April 2019. Much of the damage was because of outflows in the debt segment that saw the highest outflows in the Indian Debt Mutual Fund segment in a single financial year. Equity investment base managed by Mutual Funds also got cut by a quarter. Nevertheless, the Indian mutual fund industry has the spirit to overcome the situation [2].

Mutual Fund

Mutual Fund is a trust that collects money from a number of investors who share a common investment objective and then this gathered money is invested by the fund manager into specific securities i.e., stocks or bonds or any other

financial instrument. A professional fund manager, who is not only responsible for implementing a fund's investing strategy but also managing its portfolio trading activities, manages the fund thus pooled. Each investor in the mutual fund participates in the gain or loss of the fund based upon the number of shares owned by him [3].

Mutual fund schemes provide excellent opportunities to people to invest a small amount, which will ultimately grow like anything in the period of 15 to 20 years of their investments. The value of a share of the mutual fund is known as the net asset value per share (NAV) which is calculated daily based on the total value of the fund [13,14,15] divided by the number of shares currently issued and outstanding by the company [4].

Types of Mutual Fund

Equity funds: Also Known as Growth funds, these funds allow the investor to participate in stock markets. The primary objective of this fund is wealth creation or capital appreciation. They have the potential to generate higher return and are best for long term investments.

Debt Funds: These invest in Fixed Income Securities, like Government Securities or Bonds, Commercial Papers and Debentures, Bank Certificates of Deposits and Money Market instruments like Treasury Bills, Commercial Paper, etc. Debt funds are relatively safer investments and are suitable for Income Generation.

Hybrid Funds: These invest in both Equities and Fixed Income, thus offering the best of both, Growth Potential as well as Income Generation [5].

Quantitative Measures Used To Evaluate Mutual Funds

Net Asset Value: NAV refers to the actual value of a unit in a mutual fund scheme on a particular day. NAV of a scheme tells how much each unit is worth. It is considered as the simplest measure of performance of a mutual fund. It is calculated as;

Risk Free Rate of Return (Rf): It represents those securities which provide a minimum guaranteed return with no risk. [16,17]

Market Index: Market index is considered as the benchmark of any mutual fund scheme. If the market index of a scheme is less than the NAV, then it is said that the scheme is selling at a discount whereas if the market index is more than the NAV, scheme is said to be selling at a premium.

Standard Deviation: Standard deviation of a mutual fund scheme explains the deviation of Actual return from expected return. It measures the overall risk associated with the schemes.

NAV = (Assets - Liabilities) / Total number of outstanding shares

The higher the standard deviation the more risk the fund holds and it explains the historic volatility of the scheme. It is calculated

$$\sigma = \sqrt{\frac{\sum (x_i - \mu)^2}{N}}$$

Beta: Beta represents the price changes of a fund in comparison with its benchmark. It explains the fund's volatility to its benchmark. The beta measure assumes that the fund will move as its benchmark.

R-Squared: R-Squared or Ex-Mark indicates the extent to which the return of a mutual fund can be explained by the benchmark. The acceptable range of R-squared of equity mutual fund scheme lies between 80-90 percent. If the R-squared lies below 80% it indicates that the benchmark to which beta is compared is less reliable, Sharpe Ratio: Sharpe ratio, also known as Reward to Variability ratio, measures the risk premium of a mutual fund scheme to the total amount of risk of the scheme. It helps in summarizing the risk return of the scheme in a single measure that compares the performance of different mutual fund schemes. It is calculated as;

Sharpe Ratio = (Rm - Rf) / StdDev

Treynor Ratio: Treynor ratio, also known as Reward to Volatility Ratio, measures the risk premium of a mutual fund scheme to the amount of systematic risk present in the index. It is calculated as;

$$T = \frac{r_p - r_f}{\beta_p}$$

Anuja Magdum, CA. Girish A. Samant (2019)

In this paper the researcher made an attempt to analyse twentyone equity mutual fund schemes of both public and private banks for the period of five years from 2013 to 2018. To analyse these schemes, capital asset pricing model was used and the results indicated that private sector banks are better performing, that is, more rewarding and moderately risky than public sector banks [6].

R. Kumar Gandhi Dr.R. Peruma (2015)[18,19]

This study aimed to compare financial performance of equity diversified schemes and equity mid-cap schemes among four selected banks. The researcher used statistical tools like Standard Deviation, Beta, Sharpe Ratio, Treynor Ratio, Jensen Ratio, and Information Ratio. The results of the study revealed that among the selected mutual fund schemes Canara Robeco Equity Diversified growth scheme is most suited in equity diversified mutual fund scheme and HDFC Capital Builder growth scheme in equity mid-cap mutual fund scheme [7].

Pradeep K. Gupta and M. S. Annapoorna (2013)

The main objective of the paper was to compare financial performance of mutual fund schemes ranked by CRISIL with SBI domestic term deposit rates for the period 2008 to 2013. The tools used included average and return rates, the results revealed that most of the selected mutual fund provided less return than SBI domestic term deposits.

Conceptual Framework

This study has taken one mutual fund scheme of four different banks (Axis Small Cap fund direct Growth option, Kotak Small Cap Fund Direct Growth Option, ICICI Prudential Small Cap Fund Direct Growth option and HDFC Small Cap fund Direct Growth Option) as sample. The aim of the paper is to evaluate, analyze, compare and rank the scheme on basis of their financial performance. All the data has been collected from secondary sources like fact sheets of the company, journals, research papers, published sources. The data used for analysis has been taken for period of 3 years (1st April 2019- 31st March 2022). For the purpose of this study the daily NAVs of the mutual funds has been taken and Sharpe's Ratio and Treynor's Ratio are used to rank and analyse the mean returns of the company. For the value of risk-free rate of return the study has taken three-year 91 days treasury bills issued by the government of India and the beta measure assumes that the fund will move as its benchmark and thus it is taken as;

In this study, NIFTY SMALL CAP 100 TR has been considered benchmark for all four selected small cap mutual fund schemes.[20]

Data Analysis and Interpretation (Table 1)

Schemes	Mean NAV	Rf	Standard Deviation	Sharpe Ratio	Rank	Treynor Ratio	Rank
Kotak Mahindra	77.29126	6.19	5.466112	13.00765	III	71.10126	I
Axis Bank	28.25591	6.19	0.991625	22.25228	I	22.06591	III
HDFC	46.18668	6.19	2.104656	19.0039	II	39.99668	II
ICICI Prudential	25.43996	6.19	2.191344	8.784547	IV	19.24996	IV

Table 1. Analysis of Data for the Year 2019-2020.

From Table 1 it can interpret that by comparing the selected different small cap direct growth schemes, it can be stated that in the financial year 2019-20, in terms of NAV with 77.29125911 and with Treynor Ratio of 71.10125911. Kotak Mahindra was the best performing mutual fund amongst the selected schemes, whereas from the view point of Sharpe ratio i.e., on analysing the return along with the total risk the performance of Axis Bank was leading, followed by HDFC, Kotak Mahindra and ICICI prudential (Tables 2 and 3).

Schemes	Mean NAV	Rf	Standard Deviation	Sharpe Ratio	Rank	Treynor Ratio	Rank
Kotak	76.38392	4.36	6.192544	11.63075	I	72.02392	I
Mahindra							
Axis Bank	32.13029	4.36	2.813177	9.871503	III	27.77029	III
HDFC	42.1748	4.36	3.885416	9.732497	IV	37.8148	II
ICICI Prudential	25.92069	4.36	2.003384	10.76214	II	21.56069	IV

Table 2. Analysis of Data for Year 2020-21.

Schemes	Mean NAV	Rf	Standard Deviation	Sharpe Ratio	Rank	Treynor Ratio	Rank
Kotak Mahindra	90.71185	3.18	22.67564	3.860172	IV	87.53185	I
Axis Bank	36.67823	3.18	6.604417	5.072094	I	33.49823	III
HDFC	42.53575	3.18	9.037174	4.354874	II	39.35575	II
ICICI Prudential	28.1104	3.18	6.420344	3.883033	III	24.9304	IV

Table 3. Analysis of Data for Year 2021-22.

From Table 3, of comparison among the selected different small cap direct growth scheme it can be stated that in the financial year 2019-20, in terms of NAV with 90.711852 and with Treynor Ratio of 87.531852, Kotak Mahindra was the best performing mutual fund amongst the selected schemes, whereas from the view point of Sharpe ratio performance of Kotak Mahindra was the least and Axis Bank was leading, followed by HDFC, and ICICI prudential.

1. For the period from 2019-20 to 2021-22, all the four small cap direct growth mutual fund schemes have shown a positive return and at a growth rate except HDFC small cap direct growth mutual fund scheme which has shown a decreasing trend in between 2019-20 and 2020- 21.

2. Axis bank small fund direct growth scheme is the most well performed scheme based on risk-return measure in threeyear period.

3. Although Kotak Mahindra small cap mutual fund has shown the highest mean return and Treynor Ratio, but the standard deviation of this scheme is very high in all three years, representing the volatility of the scheme, so only risk taker investors are suggested to invest in this scheme.

4. ICICI prudential small cap direct growth scheme has been ranked last in all three years based on Treynor Ratio but this scheme has shown a slow but consistent growth over the period.

Mutual fund provides a wide variety of schemes among different categories, depending upon the risk-return portfolio. The four selected schemes in small cap category were ranked among top schemes by CSRIL rating. The entire selected scheme has a positive and growing trend over the period. On evaluating their performance, it was revealed that Kotak Mahindra small cap direct option growth plan was found to be top ranker in Treynor Ratio, while the ranking of Sharpe ratio kept on changing year by year the major reason between the rank of these two ratios were due to the consideration of standard deviation, which explains the deviation of daily return from the mean return. This study has used various methods and techniques to evaluate the performance as well as risk and return of selected schemes that will help the investors to invest their capital in a rational way and gain effectively. Further, this study will also attract other researchers to work in this area of study with other schemes and plans of mutual fund companies.

IV. CONCLUSION

The study aims to evaluate the performance of these mutual fund schemes and compare their risk and return components. Data for the analysis was collected from secondary sources, including historical Net Asset Values (NAV) and Factsheets provided by Asset Management Companies (AMCs). Various statistical tools such as Rate of Return



(RoR), Alpha, Beta, Standard Deviation, Sharpe ratio, Jensen's Ratio, and Treynor's Ratio were utilized to assess the performance and risk-adjusted returns of the selected mutual fund schemes. The findings indicate that the ICICI Prudential Equity & Debt Fund outperformed among aggressive hybrid funds, showed the highest annual returns and superior risk-adjusted performance. On the other hand, for conservative hybrid funds, the Kotak Debt Hybrid Fund - Direct Plan exhibited the highest annual returns, while the ICICI Prudential Regular Savings Fund - Direct Plan demonstrated strong returns and risk-adjusted performance. The above study highlights the importance of considering risk tolerance and investment objectives before making investment decision and selecting mutual fund schemes. Investors should carefully understand the both historical performance and risk metrics to make well informed investment decisions in consideration with their financial objectives and risk preferences.[20]

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