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COMPARITIVE STUDY OF SELECTED EQUITY-DIVERSIFIED MUTUAL FUND SCHEMES

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Abstract

With the plethora of schemes available in the Indian markets, an investors needs to evaluate and consider various factors before making an investment decision. The present investigation is aimed to examine the performance of safest investment instrument in the security market in the eyes of investors i.e., mutual funds by specially focusing on equity-diversified schemes. Eight mutual fund schemes have been selected for this purpose. The examination is achieved by assessing various financial tests like Sharpe Ratio, Standard Deviation, Alpha, Beta (β) and Coefficient of Determination (R^2). Furthermore, in-depth analysis also has been done by considering return over the period of last five years on various basis, expenses ratio, corpus-size etc. the data has been taken from various websites of mutual fund schemes and from www.amfiindia.com. Calculated results are in the favor of Reliance Regular Savings Equity in terms of returns over the last five years and Birla Sun Life Dividend Yield Plus in terms of maximum returns by taking minimum risks. The study will be helpful for the researchers and financial analysts to analyze various securities or funds while selecting the best investment alternative out of the galaxy of investment alternatives.

Key words: *Alpha, Beta, Standard Deviation, Sharpe's Index, Coefficient of Determination, Corpus Size*

INTRODUCTION

Mutual Funds over the years have gained immensely in their popularity. Apart from the many advantages that investing in mutual funds provide like diversification, professional management, the ease of investment process has proved to be a major enabling factor. However, with the introduction of innovative products, the world of mutual funds nowadays has a lot to offer to its investors. A Mutual Fund is a pure intermediary that performs a basic function of buying and selling securities on behalf of its unit holders. Mutual Fund is a body corporate which pools up the money from different types of investors and invests those funds on behalf of the investors in diversified securities. In other words, a mutual fund allows an investor to take a position indirectly in a basket of assets. A majority of investors are quite content in simply analyzing the appreciation in the net asset value (NAV) of their investment. They are not much more concerned about the risk associated with the investment alternative. Risk measure mostly deal with the character of a fund's returns and the manner in which these returns have been achieved. The present research will explore the measures of risk and return for the selected mutual fund schemes.

ASSETS UNDER MANAGEMENT

Assets under Management and folios under that are stated as under (as on March 31, 2010):

- Performance of Magnum Express is poor on the basis of all these three measures. However, Magnum Express is well diversified and has reduced it's unique risk where as Master gain did not. These two funds are found to be poor in earning better returns either adopting marketing or in selecting under priced securities.
- Blake David and Timmermann Allan (2003) in their assessment "Performance Persistence in Mutual Funds: An Independent Assessment of the Studies Prepared by Charles River Associates for the Investment Management Association" believed that there is a reasonable case for arguing that risk-adjusted past-performance data should be included in the FSA's Comparative Tables. They argued that this is not because of the traditional argument over whether superior performance might or might not persist, which we regard as inconclusive, but rather because of the evidence that inferior performance seems to persist. They considered that it is important for investors to have easy access to reliable information on underperforming funds so they can modify their investment strategies accordingly.
- Haslem, Baker, Smith (2007) in their study "S&P 500 Index Mutual Funds (S&P 500 Index Funds: Diverse Expenses and Performance Characteristics)" found that the high expense ratios for S&P 500 index funds find more bad news. The Sharpe ratio, Jensen's alpha, annualized total return, Morningstar Star ratings, and

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average net assets are all statistically negatively or related with index funds with statistically high expense ratios.

Sr.No.	Name of the AMC	Income/ Debt Oriented Schemes	Growth/ Equity Oriented Schemes	Balanced Schemes	Exchange Traded Funds	Fund of Funds investing overseas	Grand Total
1	AIG Global AMC (India) Pvt. Ltd.	925	105,246	-	-	44,794	**150,965**
2	Axis Asset Management Company Ltd.	1,291	150,724	-	-	-	**152,015**
3	Baroda Pioneer Asset Management Co. Ltd.	1,105	27,573	185	-	-	**28,863**
4	Benchmark Asset Management Co. Pvt. Ltd.	-	4,123	-	94,773	-	**98,896**
5	Bharti AXA Investment Managers Private Ltd.	6,021	43,667	-	-	-	**49,688**
6	Birla Sun Life Asset Management Co. Ltd.	186,377	2,235,419	36,957	-	-	**2,458,753**
7	Canara Robeco Asset Management Co. Ltd.	16,310	277,700	64,216	-	-	**358,226**
8	Deutsche Asset Management (India) Pvt. Ltd.	15,060	86,707	-	-	3,588	**105,355**
9	DSP BlackRock Investment Managers Pvt.Ltd.	38,036	1,340,969	28,913	-	140,271	**1,548,189**
10	Edelweiss Asset Management Limited	374	1,329	-	-	-	**1,703**
11	Escorts Asset Management Ltd.	1,298	10,725	15,843	-	-	**27,866**
12	FIL Fund Management Private Ltd.	7,724	1,015,764	-	-	3,617	**1,027,105**
13	Fortis Investment Management (India) Pvt. Ltd.	8,267	107,175	-	-	-	**115,442**
14	Franklin Templeton Asset Management (India) Pvt.	174,569	2,119,264	22,165	-	51	**2,316,049**
15	HDFC Asset Management Co. Ltd.	285,976	3,295,753	320,621	-	-	**3,902,350**
16	HSBC Asset Management (India) Private Ltd.	22,781	486,215	-	-	13,338	**522,334**
17	ICICI Prudential Asset Management Co. Ltd.	319,806	2,645,034	16,070	1,311	-	**2,982,221**
18	IDFC Asset Management Company Pvt.Ltd.	28,624	446,943	-	-	-	**475,567**
19	ING Investment Management (India) Pvt. Ltd.	7,332	103,329	2,253	-	30,289	**143,203**
20	J.M. Financial Asset Management Private Ltd.	11,655	514,675	3,918	-	-	**530,248**
21	JPMorgan Asset Management (India) Pvt. Ltd.	1,431	142,394	-	-	1,430	**145,255**
22	Kotak Mahindra Asset Management Co. Ltd.	31,038	1,009,570	8,993	8	-	**1,049,609**
23	L&T Investment Management Limited	7,347	104,750	-	-	-	**112,097**
24	LIC Mutual Fund Asset Management Co. Ltd.	51,982	357,083	65,563	-	-	**474,628**
25	Mirae Asset Global Investments (India) Pvt. Ltd.	955	42,914	-	-	2,962	**46,831**
26	Morgan Stanley Investment Management Pvt. Ltd.	863	476,239	-	-	-	**477,102**
27	Peerless Funds Management Co. Ltd.	87	-	-	-	-	**87**
28	Principal Pnb Asset Management Co.Pvt. Ltd	22,794	951,912	12,908	-	8,395	**996,009**
29	Quantum Asset Management Co. Private Ltd.	294	2,813	-	3,834	-	**6,941**
30	Reliance Capital Asset Management Ltd.	222,657	6,177,665	1,032,152	45,094	-	**7,477,568**
31	Religare Asset Management Company Pvt. Ltd.	3,334	228,855	-	4,908	-	**237,097**
32	Sahara Asset Management Co. Private Ltd.	970	42,845	-	-	-	**43,815**
33	SBI Funds Management Private Ltd.	100,122	5,735,418	73,144	19,603	-	**5,928,287**
34	Shinsei Asset Management (India) Pvt. Ltd.	94	2,168	-	-	-	**2,262**
35	Sundaram BNP Paribas Asset Management Co. Lt	28,216	2,262,134	10,737	-	36,702	**2,337,789**
36	Tata Asset Management Ltd.	40,762	1,528,149	93,843	-	-	**1,662,754**
37	Taurus Asset Management Co. Ltd.	917	173,458	-	-	-	**174,375**
38	UTI Asset Management Company Ltd	2,091,448	6,862,084	1,019,831	34,013	-	**10,007,376**
	TOTAL	**3,738,842**	**41,118,785**	**2,828,312**	**203,544**	**285,437**	**48,174,920**

Table 1: AMC wise Data on Folios as on 31-March, 2010

Source: www.amfiindia.com

- Timotej Jagric and Boris Podobnik (2007) in their research "Risk-Adjusted Performance of Mutual Funds: Some Tests" studied the mutual fund industry and applied various tests to evaluate the performance capacity of mutual funds. They found that the rankings obtained by performing both the Sharpe and Treynor rules to be almost the same, implying that funds are well diversified. The rankings reveal that all analyzed funds outperformed the market on a risk-adjusted basis.

OBJECTIVES OF THE STUDY

The present study aims to achieve the following objectives by considering the main objective as to select the best Equity-Diversified Mutual fund among selected eight funds during the period of study:

(a) To compare and analyze the Equity-Diversified Mutual Fund schemes of select mutual fund players.
(b) To compare the growth in Equity-Diversified Mutual Fund schemes with Industry average.

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(c) To find out the best Equity-Diversified Mutual Fund scheme in terms of return over the selected period of study.
(d) To suggest the means to improve return by investment in mutual funds.

RESEARCH METHODOLOGY

To carry out the research following methodology is adopted:-

- **Data Collection**

The present research is a study of examining and analyzing selected mutual fund schemes by using different financial and statistical tools. The schemes taken for this purpose are Equity-Diversified Mutual Fund Schemes. This study compares 8 equity-diversified funds launched by public sector, private sector, and foreign mutual fund players in India. The schemes have been selected using deliberate sampling method subject to the criteria mentioned as under:

a) Corpus size > 500 crores.
b) Returns of 5 years.
c) Top 8 schemes ranked on the basis of 5 years compounded annualized returns.

Closing Net Asset Values of the selected schemes are taken on Monthly basis for calculating the desirable results. The study is exclusively based on secondary data, which has been collected from various websites, journals and fact sheets of various mutual fund schemes published by them time to time.

- **Tools And Techniques**

The collected data have been analysed on basis of returns of last one month, six months, one year, three years, and five years from September 2010. Various statistical and financial techniques namely, Standard Deviation and Sharpe ratio have been used to measure volatility of returns, and returns per unit of risk respectively. Furthermore, Coefficient of determination (R^2), Expenses ratio and Corpus size of funds have also been evaluated. In addition to these tools, various tables and graphs has also been used to make the data presentable and easy to understand.

(i) *Sharpe's Ratio*

Sharpe ratio reflects the additional return over the Risk-Free return per unit of its variability. It is basically return per unit of risk. The rule states that higher the Sharpe ratio, the better the fund's performance is in relation to the amount of fluctuation. It can be explained through the formula:

$$\mathbf{S = R_P - R_f / \sigma p}$$

Where,
S = Sharpe's Index;
r_p = average monthly return of fund;
r_f = risk free return *.

**** Risk free return (r_f) is taken as 3.40% per annum***

(ii) *Standard Deviation*

It is possibly one of the most common risk measure used in assessment of portfolios- be it of mutual funds or any other investment product. It is used to measure the variation in the individual return from the average expected return over a certain period. Standard deviation is used in the concept of risk of a portfolio of investment. Higher the Standard Deviation means a greater fluctuation in expected return.

$$\boldsymbol{\sigma = \sqrt{\frac{(Y - \overline{Y})}{N}}}$$

Where, Y = fund return

(iii) *Beta (β)*

Beta Measure reflects the systematic risk assigned to each of the schemes, Beta of the Index is always being 1 (with itself). Beta of a risk-free investment is zero. More the Beta value, the higher the degree of correlation with the market index and the fund will be.

$$\boldsymbol{\beta = n \sum XY - (\sum x \ \sum y) / n \sum x - (\sum x)^2}$$

Where,
X =Index return
Y = fund return

(iv) *Jensen's Alpha (Differential Return)*

Jensen's Alpha reflects the return that is expected for the scheme given the risk exposure of the scheme and compares that with the return actually realized over the period under study. If the actual return of the fund is more than the return as predicted by its Beta, then it has a positive alpha, and if it returns less than the amount predicted by Beta, the fund has a negative alpha. A fund's return and its risk both contribute to its

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Table: 2 Calculated Periodic Returns and Ranks on the basis of them

S.No.	Fund Name	1-Month	Rank	6-Month	Rank	1-Year	Rank	3-Year	Rank	5-Year	Rank
1	Birla Sun Life Dividend Yield Plus	7.06	4	25.53	2	42.28	1	21.03	1	21.18	8
2	DSPBR Equity	6.99	5	21.55	5	33.57	6	14.36	7	25.98	5
3	HDFC Equity	8.76	2	26.09	1	42.25	2	17.73	5	26.42	3
4	HDFC Top 200	9.95	1	23.27	3	32.64	7	17.30	6	26.67	2
5	ICICI Prudential Discovery	6.92	7	19.76	7	41.59	3	20.07	2	21.59	7
6	Reliance Regular Savings Equity	6.98	6	17.53	8	31.44	8	19.44	3	27.53	1
7	Sundaram BNP Paribas Selected Midcap Reg	6.38	8	22.64	4	37.02	4	13.09	8	26.36	4
8	UTI Dividend Yield	8.48	3	20.53	6	36.93	5	17.91	4	23.66	6

Source: *Compiled by Author*

Alpha value. The higher a funds' risk level, the greater the returns. It must generate in order to produce a high Alpha which becomes more volatile. Systematic risk can be reduced through proper diversification of the portfolio of the fund.

$$\alpha = \overline{Y} - \beta\overline{X}$$

Where,
X =Index return;
Y = fund return

(v) *R-Squared*

R-Squared measures the co-relation between returns generated by a fund and its benchmark index. This is indispensable in ascertaining the reliability of the beta of a fund. It is a statistical measure that represents the percentage of a fund or security's movements that can be explained by movements in a benchmark index. R-squared values range from 0 to 100. An R-squared of 100 means, that all the movements of a fund are completely explained by movements in the index. A high R-squared (between 85 and 100) indicates the fund's performance patterns have been in line with the index. A fund with a low R-squared (70 or less) doesn't act much like the index.

UNIVERSE OF THE STUDY

It covers all Equity-Diversified Mutual Fund Schemes launched by a variety of mutual fund players. The mutual fund industry has **38 AMCs** in total as on March, 2010.

SAMPLE SELECTION

The present study compares and examines 08 Equity-diversified Mutual Fund Schemes, launched by public sector, private sector and foreign mutual fund players in India.

ANALYSIS AND INTERPRETATION

The data collected of selected Equity-Diversified mutual fund schemes have been analyzed into two parts:

A) Analysis on the basis of returns over the period of time

- *Returns of Last One Month, Six Months, One Year, Three Years and Five Years.*

B) Performance evaluation of Selected Funds

(i) Beta
(ii) Alpha
(iii) Standard Deviation
(iv) R-Squared
(v) Corpus Size
(vi) *Expenses Ratio*

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A) ANALYSIS ON THE BASIS OF RETURNS OVER THE PERIOD OF TIME

Returns are calculated periodically on the basis of various time periods like monthly, six months, one year, three years and six years. After that rankings have also been provided to these selected equity-diversified mutual fund schemes. These are stated below:

1. Birla Sun Life Dividend Yield Plus.
2. DSPBR Equity
3. HDFC Equity.
4. HDFC Top 200.
5. ICICI Prudential Discovery.
6. Sundaram BNP Paribas Selected Midcap Reg.
7. UTI Dividend Yield.
8. Reliance Regular Savings Equity.

Table 2 explores the returns of selected funds over a period of time for different periods. In terms of last one month returns i.e. from September, 2010 to October, 2010; HDFC Top 200 stood at number one with the maximum returns of 9.95% during the selected period. It is followed by HDFC Equity and UTI Dividend Yield fund with the returns of 8.76% and 8.48% respectively. Sundaram BNP Paribas Selected Midcap has given least returns (6.38%) over that period. HDFC Equity positioned at number one on the basis of last six months returns as it provides the returns of 26.09% over this period, which was maximum among the selected schemes. Birla Sun Life Dividend Yield Plus and HDFC Top 200 chased these returns by giving 25.53% and 23.27% respectively.

In terms of returns for last one year, Birla Sun Life Dividend Yield Plus topped among the selected equity-diversified mutual funds i.e. 42.28%. This fund may be ranked number one again, in terms of returns of last three years. This year ICICI Prudential have done well with by improving its returns and positioned at number two. It supported the view of real investor and analyst that if an investor wishes to play safe in (terms of investment), he has to make a long term perspective first-of-all. Reliance Regular Savings Equity fund which stood at number 6,8,8,3 in terms of last one month, six months, one year and three years returns placed itself at number one in terms of last five years returns.

B) PERFORMANCE EVALUATION OF SELECTED FUNDS

Performance Evaluation has been done on the basis of risk and return evaluation. For this purpose Standard Deviation, Beta Alpha, Sharpe-Ratio and R-Squared are calculated, which are tabulated below after the detailed calculations:

Table: 3

Performance Evaluation of Selected funds in terms of risk-return and other factors

	Fund Name	Corpus Size (in ☐ Crores)	Expenses Ratio	Standard Deviation	Beta	Alpha	Sharpe Ratio	R-Squared
1	Birla Sun Life Dividend Yield Plus	528.52	2.32	32.70	0.82	13.48	0.61	0.79
2	DSPBR Equity	2,248.49	1.90	33.03	0.89	7.17	0.43	0.91
3	HDFC Equity	7,450.56	1.81	36.18	0.99	10.30	0.50	0.94
4	HDFC Top 200	8,610.71	1.80	33.08	0.92	9.41	0.50	0.96
5	ICICI Prudential Discovery	1,408.98	1.96	39.01	1.00	13.20	0.54	0.82
6	Reliance Regular Savings Equity	3,111.97	1.90	41.00	1.07	12.95	0.52	0.86
7	Sundaram BNP Paribas Selected Midcap Reg	2,325.33	1.91	44.92	1.16	7.90	0.38	0.84
8	UTI Dividend Yield	2,522.67	1.92	30.38	0.82	10.28	0.55	0.92

Source: Calculated and Compiled by Author

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Fig. 1: Graph showing the status of Corpus

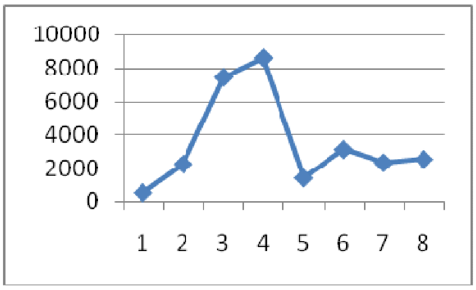


Fig. 2: Graph showing the status of Expenses Ratio

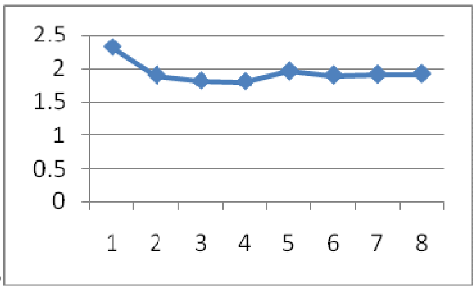


Table 3 reveals the corpus size, expenses ratio and other financial & statistical measures to check the performance of selected funds for the selected time period, i.e., last five years (August 2005-September 2010). In terms of corpus size, the HDFC Top 200 fund is having largest corpus size (☐ 8,610.71 crores). As far as the operational efficiency is concerned, HDFC Top 200 topped all the selected equity-diversified schemes with the lowest expenses ratio of 1.80.

Fig. 3: Graph showing the status of Std. Deviation

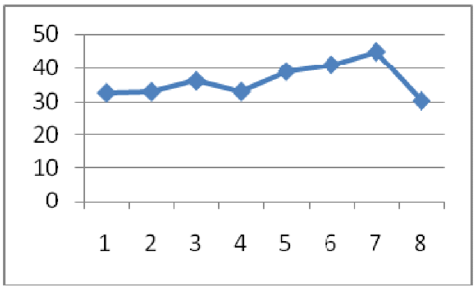
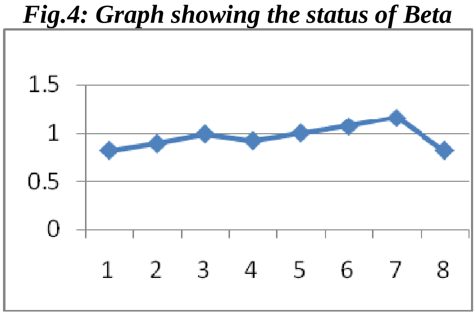


Fig.4: Graph showing the status of Beta



The most volatile fund is Sundaram BNP Paribas Selected Midcap Reg as it is having the standard deviation of 44.92, which is followed by Reliance Regular Savings Equity (41.00) and ICICI Prudential Discovery (39.01). It indicates that out of the selected schemes the most risky fund is of Sundaram. The statement regarding risk is supported by the calculation of beta. Again Sundaram BNP Paribas Selected Midcap Reg, Reliance Regular Savings Equity and ICICI Prudential Discovery proved the most risky schemes as they are having maximum of beta (1.16, 1.07 and 1.00 respectively). Least risky scheme is Birla Sun Life Dividend Yield Plus in terms of Standard Deviation and Beta.

Fig. 5: Graph showing the status of Sharpe Ratio

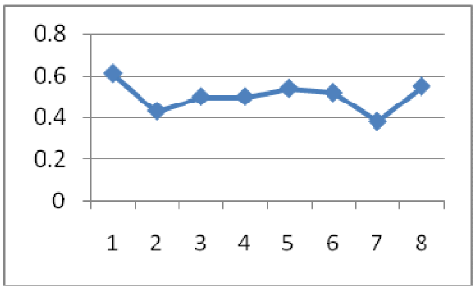
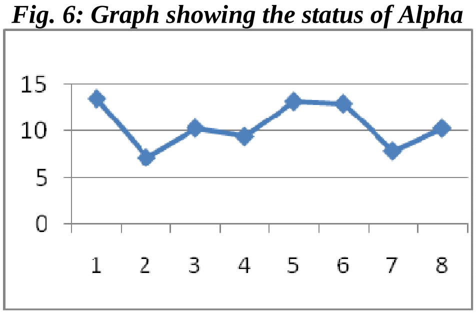


Fig. 6: Graph showing the status of Alpha



In terms of returns, the same scheme i.e., Birla Sun Life Dividend Yield Plus is having maximum returns per unit of risk (0.61). Least return provider is the fund which was having the maximum risk in terms of std. deviation and beta, i.e. Sundaram BNP Paribas Selected Midcap Reg (0.38). It may be further stated by investigating the values of alpha that Birla Sun Life Dividend Yield Plus outperformed the market index which is having the positive alpha (13.48) and that is the highest amongst the selected eight equity-diversified mutual fund schemes. Movements of HDFC Top 200 are very well explained by the

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movements in the index (S&P-500). In this category HDFC Equity and DSPBR Equity stood at number two and three.

CONCLUSION

Observation of the results found on the basis of several calculations indicates that out of the eight selected equity-diversified mutual fund schemes, in short-run HDFC manages to be at number one in terms of returns over the period of last one month and six months as HDFC Top 200 and HDFC Equity remained at number one in these periods respectively. But in long run, Reliance Regular Savings Equity ranked at number one position in terms of the returns of last five years. As far as the financial risk & return parameters are concerned Birla Sun Life Dividend Yield Plus was found least risky in terms of the results of Beta (0.82) & Standard Deviation (32.70) and in terms of returns it manages to earn the maximum returns per unit of risk, i.e., Sharpe ratio (0.61).

SUGGESTIONS

The main objective of investment is to get return from investment from the mutual funds. An investor should take following points into consideration to earn good returns:

- An investor should assess his risk profile before investing in any fund.
- To select a fund with good past records of returns. Usually an investor should select a fund, which is less volatile.
- An investor should select a portfolio of three to five funds which are less volatile in nature, and a good track record of consistent returns.
- For selection of a good fund, investor can compare the return of the fund with the industry average and benchmark indices. The fund which outperforms the both, can be selected for investment.
- Investors should review their portfolio of mutual funds from time to time. Investors should try to keep their investment for a longer period of time so as to ensure that they can beat market volatility.
- Last but not the least; investor can withdraw funds according to his needs and purpose.
- The fund house should be professional, with efficient management and administration.

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