ISBN: "978-93-87901-17-9" 10th, 11th, 12th December, 2020

STUDY OF COMPARATIVE ANALYSIS ON THE PERFORMANCE OF SECTORIAL, MULTI SECTORIAL AND EQUITY DIVERSIFIED MUTUAL FUNDS

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ABSTRACT
As time passing by industry of mutual fund in India is having extreme upraise that was and still seems to be streamed by modernly developed India in aspects of infrastructure in addition to high amount of saving and also is the reason of high foreign investment in India. Throughout the time raising financial gaining and awareness helped to increase capacity to take risk for investors and mutual fund became number one priority to invest and low risk taking investment option till the date. When alleviation and aggregation of economy of India along with market, it witnessed an immense popularity towards the choice of investment in mutual funds however investment during an explicit funds desires a great deal of detail specifications like Investor's purpose to invest, amount of money willing to invest, as well availability of funds, risk & gain factors investors are expecting and so on, therefore invite fundamental study for higher future returns and growth. This study aims to calculate how the performance of mutual funds is assessed and graded when analyzing and assessing the Net Asset Value also their individual return on live investment avenues. For the aim twelve mutual funds schemes with are taken from four sectors that's Pharmaceuticals, Technical, Banking and monetary services, FMCG industries from equity varied mutual funds over an amount of 3 year that is to say August 2017 to August 2020 and Yield on thirteen week treasury bills has been taken because of calculation for the risk free rate of return. The study consists of secondary data assessment and their analysis. It's a descriptive study indicating/concluding the ranking & analysis of funds supported 3 ratios called as, Jenson's, Treynor's & Sharpe's. The study states an additional information about risk and gains related to fund and their rank based on their performance which can ultimately facilitate investors to settle on the mutual fund giving highest returns with minimum possible risk.
The secondary goals of this study is to distinguish market return in accordance with Secure returns with fund return for the study period to study whether mutual fund schemes are really worth investing or not.
Another objective is to recognize which company is performing admirably well for investment in specific sectoral funds among selected funds so that it would be beneficial for initial investor to refer to quantitative data and make firm decisions.
Descriptive study is used as research method.
This study can also be used to know whether the mutual funds are worthy to provide designated reward and if so then up to what extent. At the end of study we will be able to take firm decision about where to invest in and how much risk free return will we be able to get.

INTRODUCTION
India is blessed with variety of security market advance alternatives in accordance to individuals which are willing to invest also to guide them to invest certain amount into various advance options and to gain fixed return. Alongside with this there are different range of financial items as well as open-end fund which ensures the best returns and minimum dangers to the financial specialists. Improvisation in various open-end fund schemes within the New Delhi market has find

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oneself being among the few of the most active options to produce remarkable predicted asset developement .The Asset managing Organizations which executes the assets are performing important part in relation to finance amples and they provide advance level practices among the investors in past days. In total there are forty four Asset Management Companies (AMCs) which contain the mutual fund industry within themselves. One of the important goals of the open-end fund industry is to draw in and mobilize major portion of the House Hold Savings (HHS) so as to enable the tiny savers to benefit from the economic process by facilitating them to park their savings into the assets which yield better risk-adjusted returns. The present study naming Study of comparative analysis on the performance of sectoral, multi sectorial and equity diversified mutual fund will try to look for the answers. Though, the open-end fund industry has recorded significant progress on all fronts yet it's not been ready to utilize its potential fully. On almost on all parameters it's far behind the developed economics and even most of the emerging economics of the planet.

This open-end fund industry have noticed extra ordinary raised interest in recent few years. This research is planned for assessment of mutual funds schemes. The most important objective of this investigation work is to analyze for long period of time on cost effective implementation of predetermined open-end fund schemes through the pre decided standard parameters, for instance, (Beta, variance, treynor's measure, Sharpe ratio). The final result of research will be useful to investors for his or her investment preferences in upcoming days.

OBJECTIVES OF STUDY

This research focuses on the performance evaluation of selected equity mutual fund schemes of various mutual funds functioning in the India.

Primary and Secondary objectives

Primary study Objectives

- To assess the performance of mutual funds with reference to Sharpe ratio, Treynor's ratio, Jenson's alpha ratio.

Secondary Objectives of the study

- To distinguish security market return with fund return for the study period.
- To recognize which company is performing admirably for investment in specific sectoral funds.
- To know whether the mutual funds are able to provide reward and up to what extent

LITERATURE REVIEW

1. The researcher inspected the exhibition of selected mutual fund schemes that the hazard profile of the total mutual fund universe can be precisely thought about by a basic market index that offers comparative month to month liquidity, returns, systematic and unsystematic hazard and complete fund investigation by utilizing the unique reference of Sharpe and Treynor's proportion. (Bansal, 2012)
2. In the study, researcher examined fund's fluctuation according to market in term of Beta and result shows that the risk and amount return of mutual funds schemes were not guaranteed or as forecasted with their previously mentioned investment objectives and next sample schemes were not found to be completely diversified. (Patel, 2011)
3. Researcher concentrated on specific the ramifications of policy responses. He has recognized two significant issues: I) under estimation of the development in credit risk arising from fast credit development, ii) Risk of a sharp slowdown or inversion in bank-intermediated capital streams. (Mihaljek, 2008)

4. The Performance of mutual funds in Malaysia from specific time period was analyzed by researcher and in that he found mutual funds schemes gives higher annual returns than government schemes. (Lau, 2006)
5. Researcher study brought out that equities had a decent possibility of gratefulness in future. The specialist was of the view that, investors ought to effectively pass judgment on their investment objective and risk appetite picking plans, diversified equity funds were commonly more secure than others and index funds were the best when market movements were not sure. The researcher proposed Systematic Withdrawal Plan (SWP) with development alternative was progressively appropriate for financial specialists needing customary cash inflows. (Jayam, 2002)
6. Research worker in study evaluated portfolio performance and calculated the potency of mutual funds of unit trust of india (UTI) through jensen, Treynor and Sharpe's methodology and extensively utilized granger relation and Cointegration tests. More the study gave results showing market index and mutual funds were inter related in long term plans (Amanulla, 2001)
7. Researcher evaluated execution of eighty fund plans for more than four years (1992-96). The examination tried the recommendation identifying with fund diverseness, continuous execution, tools of execution and risk return relationship. The investigation observed the presence of deficient portfolio expansion and consistency in execution among the sample schemes. (Sehgal, 1998)

METHODS OF RESEARCH

Study assembles a complete and detailed estimation of Equity Diversified –Growth Schemes of 12 funds for a period of 3 years (2017-2020). The designated data has been collected from the www.amfiindia.com and calculated risk using thirteen week treasury bills. Further, BSE200 has been taken for historical data and is used for computation market return.

The various components of this research are as laid below;

- The Research design we are doing in this project is descriptive in nature.
- Data collected is Secondary data and Net Asset Value data is collected from www.amfiindia.com

SCOPE OF THE PROJECT

- Research is going to be conducted according to the NAV data from 1stAugust 2017 to 31st July 2020.
- Study is going to be limited for sectoral funds in Pharmaceuticals, Technical, Banking and Financial services, FMCG industries from equity diversified mutual funds.
- Study is going to compare performance of top 3 mutual fund houses as per highest AUM and they are SBI Mutual Fund, UTI Mutual Fund, and Reliance Mutual Fund.
- Study assembles a complete and detailed estimation of Equity Diversified –Growth Schemes of 12 funds for a period of 3 years (2017-2020).

DATA COLLECTION
SOURCES & METHODS OF COLLECTION OF DATA

- Secondary data of daily NAV has been downloaded from www.amfiindia.com
- The study is based on the secondary data obtained from books, journals, periodicals and websites.
- Market rate is taken from BSE200.
- Risk free rate is calculated considering 13week treasury bills

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Secondary data collection for this study

- Secondary data has various uses in researches, businesses also in statistics. Researchers choose secondary data for different reasons, with some of it being due to its less price, higher availability, or in some cases it could be research needs.
- Although old, secondary data may be the only source of data in some cases. This may be due to the huge cost of performing research or due to its delegation to a particular body (e.g. national census).
- In short, secondary data has its shortcomings, which may affect the outcome of the research negatively and also some advantages over primary data. It all depends on the situation, the researcher in question and the kind of research being carried out.
- For this specific study, I'm going to use secondary data obtained from books, journals, periodicals and official websites. Secondary data about NAV collected from www.amfiindia.com
- Market rate is taken from BSE200.
- Risk free rate is calculated considering 13week treasury bills

ANALYSIS OF DATA AND DATA INTERPRETATION

The main research starts with the collection of daily NAV & historical data for the BSE 200 index for the period of August 2017-2020.

The funds selected for the research are listed below;

- Nippon India Pharma Fund – Growth
- UTI Healthcare - Growth ,
- SBI Healthcare Opportunities Fund ,
- Nippon India Banking Fund - Growth ,
- UTI Banking and Financial Services Fund - Growth ,
- SBI Banking & Financial Services Fund ,
- Nippon India Consumption Fund - Growth ,
- UTI India Consumer Fund,
- SBI Consumption Opportunities Fund ,
- Nippon India Quant Fund - Growth ,
- UTI MNC Fund - Growth ,
- SBI Technology Opportunities Fund

Some important Formulae

Excess market return=absolute market return- absolute risk free return
Beta plotted against excess market return verses excess fund return
Absolute fund return= $(N_t-N_{t-1}/N_{t-1})*100$
N_t= Net Asset Value of fund on day t
Excess fund return = absolute fund return- absolute risk free return
Absolute market return= $(R_t-R_{t-1}/R_{t-1})*100$
R_t =rate on specific day t
Absolute risk free return = $(RF_t-RF_{t-1}/RF_{t-1})*100$
RF_t=Risk free rate on specific day t

Method to calculate ratios:

Step 1 :

a)Calculation of the absolute NAV of the funds (on daily basis);

Returns= $(N_t - N_{t-1} / N_{t-1}) * 100$
N_t = Net Asset Value of fund on day t

b) Calculating standard deviation for calculation of sharpe ratio;
σ= Square root of (Σ $(Dx)^2/n$)
Where Dx= (Ri - Raverage)

As we are using excel to calculate standard deviation formula to calculate is
{=stdevp(NAV_0,NAV_t)}
Where NAV_0 is NAV on the first day of study and NAV_t is NAV on the last day of study
standard deviation means fluctuation of the return from its mean
Why to use Standard deviation-
'σ' denotes the Value or limit where fund return is deviated away from the mean of the returns of fund

Step-2

Calculation of Beta(β)
β = Covariance (Ri, Rmr)/ Variance (Rmr)
Where Covariance (Ri , Rmr)= Σ Di*Dmr/n
& Rmr = Mean of calculated Market Returns
What does Beta means-
Beta in simple words are the sensitive nature of the specific fund with respect to market value raise or fall.

Step 3:

Calculating Sharpe ratio
SR= $(r_x - RF)/SD$
r_x=Expected or actual return on investment of investment
RF=Risk-free investment's return
SD=Standard deviation of r_x

Step 4:

Calculating Treynor's ratio:
TR= $(r_x - RF)/Beta$
r_x =Expected or actual return on investment of investment
RF=Risk-free investment's return
Beta denotes the sensitive nature of the specific fund with respect to market value raise or fall.

Step 5:

Calculation of Jensen's alpha and formula is given below
Alpha = $R_i - (R_f + B \times (R_m - R_f))$
Whereas:
R_i = return of the portfolio or investment
R_m = rate of market return
R_f = Risk Free return rate for the given 3 years of time
B = beta

Example

we take Nippon India Pharma Fund – Growth from pharmaceuticals sector
We can calculate each ratios as follows:

Step 1:

a)Calculation of the absolute NAV of the funds (on daily basis);
Returns= $(N_t-N_{t-1}/N_{t-1})*100$
N_t= Net Asset Value of fund on day t

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Here for Nippon India Pharma Fund – Growth NAV is calculated as **20.69%**

b) Calculation of standard deviation of each fund

calculated by formula {=stdevp(NAV_0,NAV_t)} in excel as **20.6**

Where NAV_0 is NAV on the first day of study and NAV_t is NAV on the last day of study

Step 2:

Beta(β) is calculated by formula

Beta is calculated by the formula in excel as {=slope(market return)}

Beta in this case is **0.88**

Step 3:

Calculating Sharpe ratio SR= $(r_x - RF)/SD$

r_x	RF	SD
20.69	3.25	20.6

Sharpe Ratio =(20.69-3.25)/20.6

Sharpe Ratio =0.847

Step 4:

Calculating Treynor's ratio:

TR= $(r_x - RF)$/Beta

r_x	RF	Beta
20.69	3.25	0.88

TR= (20.69−3.25)/0.88

Treynor's ratio=**0.1982**

Step 5:

Calculation of Jensen's alpha = $R_i - (R_f + B \times (R_m - R_f))$

R_i	R_m	R_f	Beta
20.69	17.45	3.25	0.88

Alpha=20.69-(3.25+0.88(17.45-3.25))= **4.9**

To calculate alpha in MS Excel we can use formula :

{=intercept(Excess fund return, excess market return)}

PERFORMANCE & RATIOS OF THE FUNDS

	NAV	Risk free rate	Standard deviation	Sharpe ratio	Beta	Treynor Ratio	Market rate of return	Jenson's Alpha
Pharma								
Nippon India Pharma Fund - Growth	20.69	3.25	20.6	0.847	0.88	0.1982	17.45	4.944
UTI Healthcare - Growth	16.53	3.25	21.69	0.612	0.89	0.1492	17.45	0.642
SBI Healthcare Opportunities Fund	13.55	3.86	21.75	0.446	0.88	0.1101	17.45	-2.2692
Banking								
Nippon India Banking Fund - Growth	-7.8	3.25	32.6	-0.339	1.22	-0.09	17.45	-28.374
UTI Banking and Financial Services Fund - Growth	-8.8	3.25	31.03	-0.388	1.02	-0.118	17.45	-26.534
SBI Banking & Financial Services Fund	5.89	3.86	27.4	0.074	0.99	2.051	17.45	-11.4241
Consumption								
Nippon India Consumption Fund - Growth	5.07	3.25	20.33	0.090	0.8	0.02	17.45	-9.54
UTI India Consumer Fund - Growth	3.41	3.25	17.7	0.009	0.83	0.002	17.45	-11.626
SBI Consumption Opportunities Fund	2.43	3.86	22.95	-0.062	0.94	-0.015	17.45	-14.2046

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	NAV	Risk free rate	Standard deviation	Sharpe ratio	Beta	Treynor Ratio	Market rate of return	Jenson's Alpha
Technology								
Nippon India Quant Fund - Growth	2.94	3.25	18	-0.017	0.79	-0.004	17.45	-11.528
UTI MNC Fund – Growth Fund	4.32	3.25	16.32	0.066	0.71	0.015	17.45	-9.012
SBI Technology Opportunities Fund	23.94	3.86	18.28	1.098	0.78	0.257	17.45	9.4798

INTERPRETATIONS

In pharmaceuticals or healthcare sector Nippon India Pharma Fund – Growth performs well as compared to other two funds as it has high Sharpe ratio and Jenson's alpha though its Beta value may not be highest but it certainly performs exceptionally well.

In Banking sector SBI Banking & Financial Services Fund performs well as compared to Nippon and UTI banking fund as it has high Sharpe ratio, Treynor's ratio and Jenson's Alpha though its Beta value is not satisfactory as other two but its returns with risk taken are enough for declaring its returns are satisfactory.

In consumption sector Nippon India Consumption Fund – Growth performs well considering three ratios having a beta of 0.8 which shows volatility of fund which is not admirable about this scheme so instead SBI Consumption Opportunities Fund returns are not that high but its beta is 0.94 which is good as Beta denotes the sensitive nature of the specific fund with respect to market value raise or fall so with higher beta value stock's volatility decreases and it leads to higher returns with minimal risk of volatility. Hence we cannot compare between these schemes as both of them performs neutral.

In Technology sector SBI Technology Opportunities Fund performs well as compared to other funds in its category having highest Sharpe ratio, Treynor's ratio and Jenson's alpha with beta 0.78 which is high in its category.

FINDINGS AND SUGGESTIONS

In healthcare/Pharmaceuticals sector Nippon India Pharma Fund – Growth is recommended. In Banking sector Nippon India Banking Fund – Growth and SBI Banking & Financial Services Fund performs similar in one way or the other and hence both are good options to invest in banking sector.

In consumptions sector Nippon India Consumption Fund – Growth and SBI Consumption Opportunities Fund are recommended to invest in as both gives neutral returns and hence one can invest in any of the schemes.

In Technology sector SBI Technology Opportunities Fund have no other better alternative to investment. It performs incredibly well in this its respective sector.

CONCLUSION

The primary purpose of the research was to assess the how mutual funds performs with reference to Sharpe ratio, Treynor's ratio, Jenson's alpha ratio and this study covers those points by describing how to calculate ratios separately.

Another objective of study was to distinguish security market returns with fund return for the study period and we calculated it by comparing NAV of specific fund to market return taking risk free rate of return in consideration.

With the help of ratios calculation, this study was able to achieve another objective that is to recognize which company is performing admirably for investment in specific sectoral funds and results are described in findings.

Study also helps customers or new investors to cross check how mutual fund schemes perform and their returns are as per company has promised before investing.

This study makes investor's research easy before investing in specific fund as study reflect fund's return considering risk associated with it and suggests specific profitable scheme to invest in to get maximum returns.

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