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Comparative Risk Analysis of Selected Mutual Fund Schemes

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Abstract

The substantial result of the government decisions on Globalization and liberalization in financial sector has been the expansion and change of new financial securities. These securities are projected to reveal greater economical and reasonable flexibility to the financial sector. Growth and development of various mutual fund products in Indian capital market has ascertain and demonstrated to be one of the major instruments in generating investment growth in the capital market. There is substantial growth in the mutual fund market due to a high level of meticulousness in the projection and planning of variety of mutual fund products by all financial institution providing growth, liquidity and return. This research paper will help to know about the risk and the returns of selected mutual fund schemes which will help to invest in right schemes.

INTRODUCTION

A mutual fund investment helps the new investors to plan and belief their investment decision as it is managed by professional managers. This is low cost investment and high return investment avenue increases the awareness and belief in the market for other securities also. The measurement of risk for the mutual fund helps to increase the return. The analysis of mutual funds helps to increase the performance of the fund. The increase in the prospects of this mutual fund starts a decade back and still it is an easy and economical financial instrument.

OBJECTIVES

- To evaluate the performance of selected Mutual Fund Schemes.
- To analyse the Returns of Selected Mutual Fund Schemes.
- To study the risk measurement tools of Mutual Fund.

SCOPE

For Investor:

- Provide information regarding mutual fund schemes which is beneficial for investors.
- Provide growth of Returns of each scheme of last five years.

For Academic:

- The Analysis would be able to scrutinize the present performance of the schemes in comparison to their past performance.
- The research will help in analyzing the overall insight knowledge of mutual fund schemes.

REVIEW OF LITERATURE

- (Dr. Sarita Bahl, Meenakshi Rani-July 2012) studied the performance of 29 open ended, growth oriented equity schemes for the period from April 2005 to March 2011 (six years) of transition economy. Monthly NAV of different schemes have been used to calculate the returns from fund schemes. The historical performances of the selected schemes were evaluated on the basis of Sharpe, Treynor, Jensen's measure, Beta & R-Squared. The study showed that some schemes had outperformed & some of them had underperformed the benchmark.
- (Murlidhar Ayaluru-June 2016) made a comparative study on risk & return offered by top 10 schemes of Reliance Mutual Funds. From the study it is observed that among the selected funds Reliance small cap fund is considered as a fund with moderate risk as well as moderate returns, against which the Reliance Bank Fund was considered as high risk with high returns.
- (Arti Sharma-February 2015) studied the performance & analyzes some selected Indian sector fund schemes for last five years in terms of risk & return on the basis of Standard Deviation, Beta and Alpha& R-Squared.

LIMITATIONS

- The study is limited to selected mutual fund schemes only.
- The risk and return of mutual fund schemes can change according to the market conditions.
- The analysis is based on particular date of last 5 years returns and performance.

RESEARCH DESIGN

- **Sampling**

Sampling Technique:-

- Simple random sampling

Universe:-

- Various mutual fund schemes offered by various asset management companies.

Sampling Frame:-

- Large cap funds offered by various asset management companies.

Sampling Unit:-

- Asset Management Companies
- Large Cap Funds
- Benchmark of large cap category
- Yearly returns of that funds

Sample Size:-

- 5 Asset Management Companies
- 5 Large Cap Funds

DATA COLLECTION

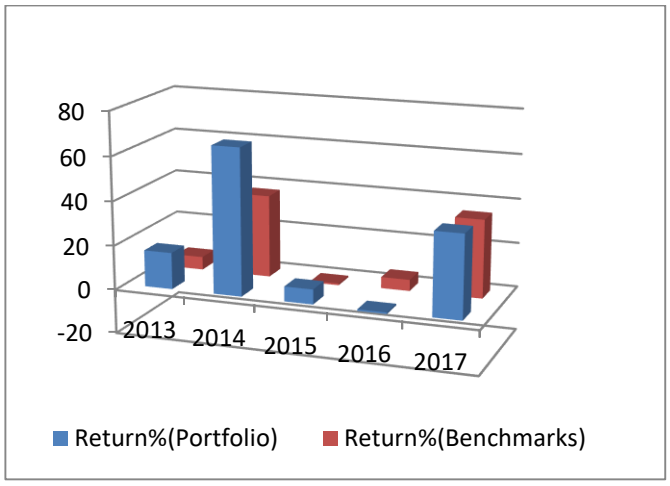
- Journals
- Internet

TOOLS OF DATA ANALYSIS

- Standard Deviation
- Covariance
- Correlation
- R-Squared
- Beta

DATA ANALYSIS AND INTERPRETATION

Axis Bank ELSS mutual funds



	2013	2014	2015	2016	2017
Return% (Portfolio)	**16.51**	**66.18**	**6.7**	**-0.69**	**37.44**
Return% (Benchmarks)	**5.9**	**37.31**	**-0.75**	**5.08**	**35.21**

I. Standard Deviation

=Square root of variance,

Variance = Sum of squared difference between each yearly return and its mean
Number of year return-1

$$= \frac{(16.51-25.22)^2 + (66.18-25.22)^2 + (6.7-25.22)^2 + (-0.69-25.22)^2 + (37.44-25.22)^2}{5-1}$$

$$= \frac{(-8.71)^2 + (40.96)^2 + (-18.52)^2 + (-25.91)^2 + (12.22)^2}{4}$$

$$= \frac{75.86+1677.72+342.99+671.32+149.32}{4}$$

$$= \frac{2917.21}{4}$$

= 729.30

Standard Deviation

= √variance

= √729.30

= 27%

Standard Deviation of Benchmark (Index)

=Square root of variance,

Variance = Sum of squared difference between each yearly return and its mean

Number of year return-1

$$= \frac{(5.9-16.55)^2+ (37.31-16.55)^2+ (-0.75-16.55)^2+ (5.08-16.55)^2+ (35.21-16.55)^2}{5-1}$$

$$= \frac{(-10.65)^2+ (20.76)^2+ (-17.3)^2+(-11.47)^2+(18.66)}{4}$$

$$= \frac{113.42+430.97+299.29+131.56+348.19}{4}$$

$$= \frac{1323.43}{4}$$

= 430.85

Standard Deviation

=√ Variance

= √ 430.85

= 20.75%

Fund = 27

Benchmark = 20.75

ANALYSIS AND INTERPRETATION:-

- Standard deviation shows the volatility between its return & average.
- Investors prefer lower volatility within the returns for investment.
- Standard deviation of the Axis Bank Fund is 30.78.
- Standard Deviation of its Benchmark is 23.1 .

II. Co-variance

= sum of each yearly return of fund and its mean X sum of each yearly return of benchmark and its mean

Number of year return – 1

= (16.51-25.22)*(5.7-16.55)+ (66.18-25.22)*(37.31-16.55)+(6.7-25.22)*(-0.75-16.55)+(-0.69-25.22)*(5.08-16.55)+(37.44-25.22)*(35.21-16.55)

5-1

= (-8.71)*(-10.85)+(40.96)*(20.76)+(-18.52)*(-17.3)+(-25.91)*(-11.47)+(12.22)*(18.66)

4

= 94.50+850.32+320.39+297.18+228.02

4

= 1790.41

4

= 447.60

ANALYSIS AND INTERPRETATION:-

- A positive co-variance means that asset returns move together, while a negative covariance means returns move inversely.
- Co-variance of the Axis Bank Fund is positive i.e. 447.60.
- On the basis of co-variance investor will prefer this fund for investment.

III. Correlation

= Covariance between index and portfolio

Standard Deviation of portfolio X Standard Deviation of Index

= 447.60

27*20.75

= 447.60

560.25

= 0.79

ANALYSIS AND INTERPRETATION:-

- Correlation value that must fall between -1 and 1.
- Perfect 0 correlation means there is no relation between the two variables & negative correlation shows both are going opposite.
- Here, the correlation between Axis Bank Fund & its Benchmark is 0.79 i.e. nearer to 1.
- On the basis of correlation investor will prefer this fund for investment.

IV. R-squared

=Square of correlation
Correlation= 0.798
R-squared = $(\text{Correlation})^2$
$= (0.798)^2$
=0.6368 (i.e.63.68%)

ANALYSIS AND INTERPRETATION:-

- If investors want a portfolio that moves like the benchmark, investors want a portfolio with a high R-squared.
- If investor wants a portfolio that doesn't move at all like the benchmark, investor want a low R-squared.
- R-squared of the Axis Bank Fund is 93%

V. Beta

$$= \frac{\text{Standard Deviation of Fund}}{\text{Standard Deviation of Benchmark}} \times \text{R-square}$$

$$= \frac{27}{20.75} \times 0.6368$$

$$= 0.8286$$

ANALYSIS AND INTERPRETATION:-

- Beta shows how much a fund's performance would swing compared to a benchmark. Here the Beta of Axis Bank Fund & its Benchmark is 0.8286.

- On the basis of Beta investor will prefer this fund for investment because the Beta of this fund is less than 1, When the beta is more than 1 then the fund will more riskier for investment.

Investor's Preference: -

Risk Measurement Tools	Fund
Standard Deviation	**X**
Co-variance	✓
Correlation	✓
R-Squared	✓
Beta	✓

CONCLUSION

Standard Deviation of selected mutual funds is more than its benchmark's standard deviation. It shows more volatility covariance of all the selected schemes is positive so investor can prefer these schemes for investment. Co-relation and R-squared shows the relation between return of the fund and benchmark. There is good relation between all fund and benchmark. Investors will not prefer these schemes on the basis of Beta because maximum of Beta more than one.

Therefore, investing in a mutual fund, the investor must study about the risks associated with the schemes and market condition and the companies should disclose the funds details to investor per their objectives and solutions.