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Performance Evaluation of Public Sector Mutual Funds - Evidences From India

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ABSTRACT

Mutual Funds schemes are important investment avenues for small investors to reap economic benefits from the otherwise complex and dynamic capital market. The main objective of this research paper is enlighten small investors in terms of analysing mutual fund schemes for better decision making. This study has considered seven public sector mutual fund schemes over a period of five years. The parameters used are Year on Year Return, Simple Average Return Over the Investment Period, Standard Deviation and Sharpe Index. The results of the study indicate that all public sector mutual fund schemes have given better returns than the risk free returns offered by post office schemes. It was also observed that though standard Deviation and Sharpe Index are statistically superior tools the investor must also incorporate Simple Average Return over the Investment Period for better decisions.

Keywords: Mutual Funds, Simple Average Return, Sharpe Index, Standard Deviation.

INTRODUCTION:

The Securities Exchange Board of India Regulations under section 2(q) defines " Mutual Fund means a fund established in the form of a trust to raise monies through the sale of units to the public or section of the public under one or more schemes for investing in securities including money market instruments or gold or gold related instruments or real estate assets". According to Association of Mutual Funds of India a mutual fund is a pool of money managed by a professional Fund Manager. It is a trust that collects money from a number of investors who share a common investment objective and invests the same in equities, bonds, money market instruments and/or other securities and the income / gains generated from this collective investment is distributed proportionately amongst the investors after deducting applicable expenses and levies, by calculating a scheme's "Net Asset Value" or NAV. Mutual fund is thus a trust that mobilises money from investors by selling units of fund like any other type of company that sell shares to the public. Indian mutual funds have offered variety of schemes such as open-ended, close-ended, interval, growth, income, balanced and money market schemes, besides the other schemes such as tax saving schemes that responds to the needs of the financial position,risk tolerance and return expectations of mutual investor. Mutual fund hence pools savings of small investors and transforms them into large corpus to be managed by a body of competent professionals within the regulatory framework of the nation. The mutual funds by and large are capital market oriented and the gains earned from their investments are distributed amongst the small investors. This enables the small investors to participate in otherwise complex and dynamic capital market through the platform of professional expertise which normally they cannot afford. On the other hand the entrepreneurs who are not known to public at large can resort to capital market to obtain financial resources for implementing various projects essential for economic growth of the country. Thus mutual fund has the potential of providing huge resources in capital market by tapping savings of small investors throughout the country and at the same time supporting economic development of the nation besides bringing benefits of economic growth to small investors.

LITERATURE REVIEW:

Edward S. O'Neal (1997) used simulation analysis to observe that holding more than one mutual fund in a portfolio appears to have diversification benefits. A great reduction in the volatility occurs when small numbers of fundsare added to the portfolio. These findings are important for investors who have long term perspective for their needs such as marriage of child and higher education. Dr S Narayan Rao (2003) examined the performance of mutual funds through Relative Performance Index, Risk-Return Analysis, Treynor's ratio, Sharpe's measure, Jensen's measure, and Fama's measure in the bear market starting from September 1998 to April 2002. He analyzed 58 schemes out of 433 schemes. The results of performance measures pointed out that most of the mutual fund schemes in the sample of 58 were able to meet with investors' expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk. Deepak Agrawal (2008) examined the performance of mutual funds analysing the data at both the fund manager level and fund investor level. The study observed that the performance of the funds can be substantially improved by offering better incentives to the fund manager and by increasing rates of domestic savings. Joshua M. Pollet and Mungo Wilson (2008) in their research examined that how does the size and diversification affect Mutual Fund behaviour. With the huge allocation of funds into the mutual funds sector it is important for the mutual funds to outperform the stock market with a view to keep their investors satisfied. The study pointed out out that there is a positive relationship between diversification and subsequent performance, controlling for fund size and fund family size. This association is stronger for small-cap funds presumably due to they being more constrained. Martin Eling (2008) examined 38,954 funds from seven different asset classes over the period of 1996-2005. They observed that the other performance measures are not important whereas the Sharpe Index is normally suffieient to evaluate fund's performance. The study concluded that from a theoretical point of view, the other performance measures aren't as efficient as the Sharpe Index as it is consistent with expected utility maximization. Bilal Ahmand Pandow (2016) examined 40 Indian public and private sector mutual fund schemes over a period of five years from April 2007 to March 2011. They did not find persistence in the selection ability of fund managers either in short run or in the long run. Mamta and Oza S.C.(2017) examined ten direct- equity schemes in Indian mutual fund industry over a period of 50 months (Jan.2013- Feb.2017) using parameters such as Average Return, Standard Deviation, Beta, Sharpe Index, Treynor Index and Co-efficient of Determination. The study revealed that from view point of Average Return, 30%of schemes performed better than bench mark returns. However from view point of sharpe index only 10% of schemes i.e. only one scheme which performed better than the benchmark.

NEED FOR THE STUDY:

For a country's sustainable economic development a well-developed Capital market is necessary. The Indian capital market has grown quantitatively and qualitatively over the years. For government and corporate securities as well mutual funds industry has been an important platform for resource mobilisation. The participation of individual or retail investors and households has begun to increase only recently. Mutual Fund is essentially a vehicle for small investors to participate in the otherwise complex capital market and in a way also enables them to participate in the economic growth process of the nation. However the small investor must necessarily analyse and understand the performance of various mutual funds and form his independent opinion before putting in his hard earned resources. In this research paper few schemes have been analysed using simple parameters.

RESEARCH DESIGN:

The aim of this research paper is to develop better understanding of performance of mutual funds which are gaining importance as Investment Avenue for small investors. For this purpose the following seven public sector mutual fund schemes have been selected:

1. SBI Blue-chip Fund - Growth
2. BOI AXA Manufacturing & Infrastructure Fund - Growth
3. Canara Robeco Blue-chip Equity Fund Direct – Growth
4. Baroda Pioneer Multi Cap Fund Direct - Growth
5. IDBI India Top 100 Equity Fund Direct – Growth
6. IDFC Large Cap Fund Direct - Growth
7. UNION Equity Fund Direct - Growth

The necessary data was collected for a period of five years viz. 2013-14 to 2017 -18 from the authorized websites of each Mutual Fund schemes, CRISIL and Association of Mutual Funds in India (AMFI). The data so

collected was analysed using parameters viz. Year on Year Average Return, Simple Average Return based on NAV, Standard Deviation and Sharpe Index. These parameters have been explained below:

Year on Year Average Return:
Year on Year Average Return has been worked out taking NAV in the beginning of year and NAV in end of the year. The difference is then related to NAV in the beginning of the year to compute return over the year.The formula is as under:

$$\text{Average Return} = \frac{\text{NAVend} - \text{NAVstart}}{\text{NAVstart}} \times 100$$

Simple Average Return Over the Investment Period:
Simple Average Return over period of five years has been worked out considering NAV in the beginning and NAV in the end of the period. The formula is as under:

$$\text{Simple Average Return} = \frac{[(X - Xi) \times 100]}{Xi} \div 5$$

X= NAV at the end of the period
Xi= NAV in the beginning of the period

Standard Deviation:
Returns over a period of time normally take place around the average line. The measure of deviation based on this assumption is defined as Standard Deviation and the same is calculated as under:

Formula: $$\text{Std. dev.} = \frac{(Xi - X)\,2}{N}$$

Where, Xi = Expected Return
X = Average Return
N = Period

Managers generally interpret risk as deviation around the expected rate of return. When actual returns are normally distributed, one standard deviation will cover approximately 68% returns. Therefore smaller standard deviation indicates close cluster around the average which means less risk. Higher the standard deviation more will be the fluctuations in the returns and hence more risk.

Sharpe Index (SP):
Sharpe (1966) developed an index popularly known Sharpe Index to measure the performance of portfolio of investments. According to him a small investor may not have well diversified portfolio and therefore it is better to consider total risk instead of only one type of risk. Total risk, measured by the standard deviation of a security or a portfolio of securities, is the sum total of systematic risk and unsystematic risk. The formula to calculate Sharpe Index is as under:

$$SP = \frac{(R_{i,t} - R_{f,t})}{\sigma_{i,t}}$$

Where:
SP = Sharpe Index
$R_{i,t}$ = The average return on the portfolio i at time *t*,
$R_{f,t}$ = The risk-free rate of interest at time *t*,
$\sigma_{i,t}$ = The standard deviation of portfolio i at time *t*.

The higher SP points out a better portfolio performance as each unit of total risk is rewarded with greater excess return. This composite measure of portfolio performance attempts to measure the total risk of the portfolio by including the standard deviation of returns rather than considering only the systematic risk by using beta. As the numerator in the formula is the portfolio's risk premium, this measure provides the risk premium return earned per unit of total risk. Thus, unlike the other two measures the Sharpe Index calculates portfolio performance as return per unit of total risk borne by the investor and in that sense Sharpe Index is a better measure of performance.

ANALYSIS & INTERPRETATION:

As stated in research design in the preceding section analysis has been carried out using four criteria viz. Year On Year Average Return, Simple Average Return Over the Investment Period, Standard Deviation and Sharpe Index. The said analysis is presented below:

(1) The year on Year Average Return placed at Table-1 has shown positive growth each year and in all the schemes with varying degree. In the year 2013-14 IDBI India Top 100 Equity Fund Direct Growth registered the highest growth of 20.86% and BOI AXA Manufacturing & Infrastructure Fund - Growth registered the lowest growth of 16.12%. However performance of all the schemes cantered around the mean there of in each year except SBI Blue-chip Fund – Growth falling apart in the year 2015-16. Surprisingly in the year 2014-15 and 2016-17 every scheme registered better growth rate than the previous year and the reverse has been observed in the year 2015-16 and 2017-18. This is in tune with overall market movement represented by Year wise Average Sensex as depicted in Table- 5.

(2) Considering the portfolio construct of 5 years ending on 31-3-2018, as indicated in Table- 2 , the UNION Equity Fund Direct-Growth has achieved lowest Simple Average Return over the Investment Period of 15.98% while BOI AXA Manufacturing & Infrastructure Fund - Growth has achieved the highest Simple Average Return over the Investment Period of 32.68%. However all the schemes have given returns far better that risk free return suggesting that risk and return move in the same direction.

(3) The Standard Deviation – a measure of total risk – as depicted in Table -3 suggest that in the year 2013-14 σ (BOI AXA Manufacturing & Infrastructure Fund – Growth) is highest at 8.28 and σ (CANARA Robeco Bluechip Equity Fund Direct – Growth) is lowest at 4.04. However in the year 2014-15 σ(CANARA Robeco Bluechip Equity Fund Direct – Growth) stands at 10.90 while σ (SBI Bluechip Fund – Growth) is at 3.21. In the same year σ (BOI AXA Manufacturing & Infrastructure Fund – Growth) was at 6.16. However except these three extreme cases the standard deviation in the remaining cases has shown considerable degree of stability through out the period of study. This leads as to believe that the mutual funds schemes covered in this research appear to be consistent in their spread of investment.

(4) Considering the performance of various schemes using Sharpe Index as a measure of performance over a period of 5 years; as stated in Table- 4 , IDFC Large Cap Fund Direct Growth and BOI AXA Manufacturing & Infrastructure Fund - Growth had Sharp Index of 1.31 standing out to be the best performers. SBI Bluechip Fund – Growth has lowest Sharp Index suggesting their poor performance. Thus the simple average return over a period of 5 years and Sharp Index do differ in their evaluation of schemes. It appears that investor may prefer schemes which are positively rated by both the criteria which in our study of turns out to be BOI AXA Manufacturing & Infrastructure Fund – Growth.

IMPLICATIONS:

The results of this research study clearly indicates that all the mutual fund schemes studies have given better returns than the risk free returns offered by post office schemes. Though standard Deviation and Sharpe Index are better tools the investor must also incorporate Average Return over the Investment Period for better decision making. These findings when supported by larger studies may as well be used by high net worth individuals and even by mutual fund managers.

FUTURE RESEARCH DIRECTIONS:

This research study has covered seven schemes of public sector mutual funds in India over a period of five years and has considered four criteria Viz. Year on Year Average Return, Simple Average Return Over the Investment Period, Standard Deviation and Sharpe Index only. A research study comprising more parameters, more schemes including private sector mutual funds over a larger time frame may be undertaken. A global study of performance of mutual funds in developing and developed nations may as well be considered. A comparative study of other avenues of investment for small investors may be useful.

CONCLUSION:

Public sector mutual funds schemes have yielded better returns than risk free returns offered by post office schemes and they are found to be consistent in spread of their investments. The returns earned per unit of total risk are also positive in each case. This makes public sector mutual funds schemes a better choice for small investors from view points of both risk and return. For better decision making the small investors should include Average Return over the Investment Period, Standard Deviation and Sharpe Index as parameters in their decision matrix.

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TABLES:

Table 1: Year on Year Average Return – Scheme wise

Scheme	2013-14	2014-15	2015-16	2016-17	2017-18
Baroda Pioneer Multi Cap Fund Direct-Growth	19.44	43.67	10.0	25.06	9.55
BOI AXA Manufacturing & Infrastructure Fund-Growth	16.12	47.42	10.68	31.26	28.65
CanaraRobecoBluechip Equity Fund Direct-Growth	16.74	36.16	7.57	21.31	11.66
IDBI India Top 100 Equity Fund Direct-Growth	20.86	46.23	8.15	20.13	7.46
IDFC Large Cap Fund Direct Growth	18.95	27.77	9.50	22.52	11.52
SBI Bluechip Fund –Growth	18.81	49.27	1.65	22.03	11.62
Union Equity Fund Direct -Growth	17.6	34.38	14.09	20.95	7.87

Table 2: Simple Average Return Over the Investment Period - Schemewise

Scheme	Opening NAV Rs.	Closing NAV Rs.	Differrence Rs.	%	Average %
Baroda Pioneer Multi Cap Fund Direct-Growth	47.16	101.02	53.86	114.20	22.84
BOI AXA Manufacturing & Infrastructure Fund-Growth	7.38	19.44	12.06	163.41	32.68
CanaraRobecoBluechip Equity Fund Direct-Growth	11.41	23.08	11.67	102.27	20.45
IDBI India Top 100 Equity Fund Direct-Growth	11.31	24.05	12.74	112.64	22.52
IDFC Large Cap Fund Direct Growth	16.57	31.45	14.88	89.80	17.96
SBI Bluechip Fund –Growth	16.21	39.01	22.8	140.65	28.13
Union Equity Fund Direct -Growth	10.51	18.91	8.4	79.92	15.98

Table 3: Standard Deviation – Scheme wise

Scheme	2013-14	2014- 15	2015-16	2016-17	2017-18
BARODA	4.6	4.23	4.06	3.45	2.97
BOI	8.28	6.16	5.36	3.43	3.58
CANARA	4.04	10.9	4.64	3.57	2.79
IDBI	4.49	3.83	3.97	3.38	3.09
IDFC	4.38	4.63	4.01	2.69	3.10
SBI	4.2	3.21	4.07	3.03	2.57
UNION	4.18	4.17	4.61	3.33	2.72

Table 4: Sharpe Index - Schemewise

Scheme	Sharpe Index
Baroda Pioneer Multi Cap Fund Direct-Growth	0.96
BOI AXA Manufacturing & Infrastructure Fund-Growth	1.31
CanaraRobecoBluechip Equity Fund Direct-Growth	0.96
IDBI India Top 100 Equity Fund Direct-Growth	0.8
IDFC Large Cap Fund Direct Growth	1.32
SBI Bluechip Fund –Growth	0.71
Union Equity Fund Direct –Growth	1.11

Table 5: Year wise Average Sensex

Year	
2013-14	20625
2014-15	25201
2015-16	26800
2016-17	27445
2017-18	31439
