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A Study on Performance of Financial and Technology Sectors in Mutual Funds

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Abstract
This study evaluates accessing the Mutual funds in our Country. Brought out through relative Evaluation index, Return with Risk analysis, as per Ratios of Treynor and Jensen's measurent. The data are closing NAVs and the source of data is at Association of Mutual Funds in India (AMFI) website.
The main objectives of this research work are to analyse two major sectoral (Finance & Technology) mutual funds. Performance of selected Financial mutual fund schemes through statistical methods such as (Alpha, Beta, standard deviation, Sharpe and Treynor's Ratio, Jensen's alpha etc).
Significant upward trend of various mutual funds products in the Indian capital market are proving and proved as one of the most catalytic investments in generating momentous growth in the capital market. In this , close observation and accessing of mutual funds have become mandatory.
Therefore, choosing gainable mutual funds for investments are very important. Proper assessment of various mutual funds and theirs performance, and their comparison with other funds helps smaller investors for making investment decisions wise.
In this research work it was observed that all the schemes related to finance sectors have performed low in the year 2015, while all the schemes relating to technology sector have shown less growth in the period of 2016. Although it looked like Mutual funds market are poorly performing, within a year there has been great progress by all these sectoral schemes which has outperformed the market expectations.
The results of performance measures suggest that most of the mutual fund have given positive return during the period 2016 and 2017; Although Technology sector is growing at its own pace, Finance sector has performed comparatively fair in the market.
Key Words: *Mutual Funds, Risk and Return, Indian Capital Market*

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I. Introduction

Our economies are classified in three sectors – Allied Agriculture, Industry and Services. Agriculture sector includes Agriculture, Hortilcultre (Green Revolution), Livestock(White Revolution). Forestry and Logging, Fishing (Blue Revolution) and related activities. Industry includes 'Mining & quarrying', Manufacturing (Registered & Unregistered), Non-conventional Energy, Power, Natural Gas, Water Resources, and Infrastructure. Services sector includes'

Hospital, Legal, Hospitality, Logistics, communication and services related to broadcasting', Realtors' professional services', 'Public Administration, defense and other services'.

Services sectors are the largest sector. Gross Value Added (GVA) at present prices for Services sector is expected at 73.79 Bn in 2016-17. Services sector accounts to 53.66% of total

India's GVA of 137.51Bn. With GVA of Rs. 39.90 Bn.

Industry sector contributes 29.02%. While, Agriculture and allied sector shares 17.32% and GVA is around of 23.82 Bn in India.

Prices, composition of Agriculture & allied, Industry, and Services sector are 17.32%, 29.02%, and 53.66%, respectively during 2016-17

Objectives of the Study
Primary Objective :

- To Find which Sector's Mutual fund yields more returns to the investor.

Secondary Objectives :

- To Find the respective Portfolio's return with the amount of risk involved.
- To understand the two major sector's fund performance over the period.
- To Study and analyze the implications of GST on the Fund and the market.
- To Study and analyze the Compounded Growth rate of the fund.

Research Methodology
Quantitative Research designed in this project. because it helps to describe a particular situation prevailing in an environment. For Casual research to establish the quantitative relationship between the two different sector's mutual fund, NAVs were collected from the various secondary sources like internet, books and journals. The data used in this study consist of yearly observations of the period from 2015 to 2018.

Tools and Techniques used in the research :

- Sharpe Ratio
- Treynor Ratio
- Jensen's Ratio
- Compounded Annual Growth Rate (CAGR)
- Regression Analysis

II. Review of Literature

1. **Another look at Mutual Fund Performance, Journal of Financial and Quantitative Analysis, 1971 - Fred.D.Arditti**

Present observation of mutual funds have all landed at the same conclusion: mutual fund performance has been inferior to the performance of the market indices. It is the intent of this paper to show that if another variable, namely the third moment of the fund's annual rate of return, is inducted into the investor's decision process, Sharpe's conclusion must be altered.

2. **Evaluating Mutual Fund Performance, Journal of Finance, 2001, S.P.Kothari, et al**

Standard mutual fund performance are measured, using simulated funds whose characteristics mimic actual funds. It is traced that performance measures used in previous mutual fund research have little ability to detect economically large magnitudes (e.g., 3% PA) of abnormal fund activities, particularly if a fund's style characteristics differ from those of the value-weighted market portfolio. Power can be substantially enhanced, however, using event-study procedures that analyze a fund's stock trading. These procedures are plausible using time-series data sets on mutual fund portfolio holdings.

3. **A Study of Monthly Mutual Fund Returns and Performance Evaluation Techniques, Journal of Financial and Quantitative Analysis, Volume 29, Issue 3 September 1994, Mark Grinblatt et al.**

This paper empirically contrasts the Jensen Measure, the Positive Period Weighting Measure, developed in Grinblatt and Titman (1989b), and a measure developed from the Treynor-Mazuy (1966) quadratic regression on a sample of 279 mutual funds and 109 passive portfolios, using a variety of benchmark portfolios. This study identifies the measures yield similar interpretation while using the same benchmark and that inferences may vary, even from the similar measurements, while using different standards. These tests unexpectedly suggests that turnover is positively related to the ability of fund managers to earn unexpected returns.

4.Mutual Fund Performance, Journal of Empirical Finance, 2008, Eugene F.Fama et al

At an average mutual funds enhances portfolio close to the market portfolio.
But with higher cost of active management that show up intact as lower returns. Continuous tests that sort funds on three-factor α estimates suggest information effects in the future returns of past winners and losers. But persistence is adhoc, it is weak to nonexistent in sorts on average return, and it largely vanished after 1992. Bootstrap simulations that use entire histories of fund returns do not identify information effects in three-factor or four factors α estimates.

4. **Mutual Fund Flows and Performance in Rational Markets, Journal of Political, 2004 Economy, Jonathan B. Berk et al.** We derive a parsimonious rational model of active portfolio management that regenerates regularities widely regarded as anomalous. Fund flows rationally respond to previous performance in the model even though performances are not persistent and investments with performing managers do not outperform passive benchmarks on average. The lack of persistence in returns does not imply that differential ability across managers is nonexistent or unrewarded or that gathering information about performance is socially

useless. The model can quantitatively reproduce many salient features in the data. The flow-performance relationship is consistent with high average levels of skills and considerable heterogeneity across performing Managers.

5. Mutual Fund Performance: An Analysis of Monthly Returns, FINANCE INDIA Vol. X No. 1, March 1996, M.Jayadev

In this paper an attempt is made to assess the performance of two growth oriented mutual funds (Mastergain and Magnum Express) on the basis of monthly returns compared to benchmark returns. For this purpose, risk adjusted performance measures suggested by Jenson, Treynor and Sharpe are employed. It is recommended to conclude that, the two growth oriented funds have not performed better in terms of total risk and the funds are not offering advantages of diversification and professionalism to the investors.

6. **Mutual fund characteristics, managerial attributes, and fund performance, Review of Financial Economics, 2004, Laurie Prather, et al.** This study provides a comprehensive cross examination of recent mutual fund performances by analyzing a large set of both mutual funds and fund attributes in an effort to link performance to fund-specific characteristics. These results indicate that the hypothesized relationships between performance and the explanatory variables are generally upheld.

7. Performance Evaluation of Equity Oriented Growth and Dividend Funds of Mutual Funds in India : An Application of Risk – Adjusted Theoretical Parameters, Indian Journal of Finance, August 2016, M.Gowri, Malabika Deo

This study scaled to evaluate the performance of fund of funds on the basis of risk-adjusted methods. The performance of fund of funds were compared with the risk free returns as well as the benchmark index (BSE 100), which was taken as the proxy for the market returns.

Samples collected from the AMFI websites and respective AMC websites from April 1, 2007 to March 31, 2014 and the returns were calculated from the respective schemes' NAV price. The methods used in this study that risk adjusted tools of Sharpe ratio, Treynor ratio, and Jensen alpha. The results explains that the performance of fund of funds had posted a negative Sharpe, Treynor, and Jensen alpha. The underperformance of fund of mutual funds strongly explained the double layer of fees.

8. A Comparative study of the mutual fund schemes of Reliance and Unit trust of India, International journal of Multidisciplinary Research in Social and Management Sciences, September 2014, Tom Jacob and Dr. Thomas Paul Kattookaran

Mutual fund industries experienced a fantastic growth in the past two decades. Increased the number of schemes with increased mobilization of funds in the past few years shows the importance of Indian mutual funds industries.. Proper estimation of various fund performance and their comparison with other funds helps retail investors for making investment decisions properly. The main purpose and objectives of this research work are to assesses financial performance on selected mutual fund schemes through the statistical parameters such as (alpha, beta, standard deviation, squared, Sharpe ratio). The findings of this research study will be helpful to investors for their future investment decisions.

9. Performance Evaluation of Selected open Ended Mutual Fund Schemes In India: An Empirical Study, Global Management Review . May2016, Sathish, P.; Srinivasan, K. Sakthi

Mutual funds are expected to have one of the fastest growing sectors in India and it plays vital role in the Indian capital market. The common investors are facing the problem in choosing the suitable product among the multiple companies offering variety of products and multiple options attached with each product.

This research paper is an attempt to evaluate the performance of selected schemes of different mutual funds in India. The sample consists of 20 schemes from the selected asset management companies over a study period of 5 years spanning from January 2010 to December 2014. The performance of selected funds is evaluated by using statistical tools like average rate of return of funds, standard deviation, beta, correlation, regression analysis and risk adjusted techniques are used by using Sharpe ratio, Treynor ratio and Jensen ratio. Benchmark index has also done for the purpose of analysis.

11. A Study on Volatility in Stock Market (NSE) based on Select Sectoral Indices during Union Budget Period of India, International Journal of Recent Technology and Engineering (IJRTE) April 2019, G.Sankararaman, S.Suresh, TC. Thomas, G. Vishnupriya

Stock exchange are crucial and vigorous part of financial markets of any country. Unpredictable studies are considered as one of the most testing time series prediction due to hurdles and complexity. In this paper we present that though stock market state are vibrant unexpected and undetectable, but it will be subjective by some visible stock market data.

Previous research on time series study on stock market and instability forecast can be classified into two categories namely in detail study of one market factor on the stock market unpredictability or forecast by historical price variation and validity of stock. The stock market plays a crucial and vital role in the growth of any economy.. However, instability in stock market can increase the cost of equity which is able to influence economic expansion harmfully. The study is about the share market unpredictability performance between the Nifty index and Sector index i.e, Nifty FMCG, Nifty Bank, Nifty IT and Nifty Financial Services

III. Results and Discussion

Table1: INVESCO Banking Fund scheme
Fund Name: Invesco Banking Fund - Direct Plan (G)

Year	Rp	Rf	SD	B	Rm
2015	-0.2	7.18	6.03	0.88	16.1
2016	12.36	6.75	4.91	0.92	23.5
2017	47.71	7.5	4.88	0.88	11.3
Average of 3 years	19.96%	7.14%	5.27%	0.89	16.97%

Sharpe Ratio $= \frac{19.96\% - 7.14\%}{5.27\%}$
$= 0.024$
Treynor's Ratio $= \frac{19.96\% - 7.14\%}{0.89}$
$= 0.144$
Jensen's Ratio $= 19.96\% - [7.14\% + 0.89 * (16.97\% - 7.14\%)$
$= 0.041$

Inference:
The Portfolio's Sharpe ratio is positive (0.024), which implies the better its risk-adjusted performance. The Higher Treynor ratio implies the more returns for the amount of risk involved in the portfolio.

Table2: SBI Banking & Financial services scheme
Fund Name: SBI Banking & Financial Services -DP (G)

Year	**Rp**	**Rf**	**SD**	**B**	**Rm**
2015	-9.4	7.18	18.40	0.66	16.1
2016	17.91	6.75	17.32	0.84	23.5
2017	42.32	7.5	16.69	0.82	11.3
Average of 3 years	16.94%	7.14%	17.47%	0.77	16.97%

Sharpe Ratio $= \frac{16.94\% - 7.14\%}{17.47\%}$
$=0.0056$
Treynor's Ratio $= \frac{16.94\% - 7.14\%}{0.77}$
$=0.127$
Jensen's Ratio $= 16.94\% - [7.14\% + 0.77 * (16.97\% - 7.14\%)$
$= 0.022$

Inference:
The Portfolio's Positive Sharpe ratio implies the better its risk-adjusted performance. The Higher Treynor ratio implies the more returns for the amount of risk involved in the portfolio. The positive Jensen's ratio indicates that the portfolio's fair performance in the market instead of the risk involved.

Table3: Sundaram Financial Opportunities Scheme
Fund Name: Sundaram Financial Services Opportunities-DP(G)

Year	**Rp**	**Rf**	**SD**	**B**	**Rm**
2015	-8.58	7.18	22.4	1.4	16.1
2016	13.46	6.75	17.7	1.2	23.5
2017	40.5	7.5	18.1	1.2	11.3
Average of 3 years	15.13%	7.14%	19.4%	1.27	16.97%

Sharpe Ratio $= \frac{15.13\% - 7.14\%}{19.14\%}$
$=0.417$
Treynor's Ratio $= \frac{15.13\% - 7.14\%}{1.27}$
$=0.063$
Jensen's Ratio $= 15.13\% - [7.14\% + 1.27 * (16.97\% - 7.14\%)$
$= -0.045$

Inference:
The Higher Sharpe ratio of the portfolio implies the better risk-adjusted performance. The Positive Treynor ratio of the portfolio implies the higher returns for the amount of risk involved in the portfolio. The Negative Jensen's ratio indicates the underperformance of the portfolio compared to its benchmark index.

Table 4: UTI Banking Sector scheme

Fund Name: UTI Banking Sector Fund -DP (G)

Year	Rp	Rf	SD	B	Rm
2015	-10.44	7.18	20.4	0.92	16.1
2016	14.16	6.75	17.64	0.89	23.5
2017	45.17	7.5	17.25	0.89	11.3
Average of 3 years	16.30%	7.14%	18.43%	0.90	16.97%

Sharpe Ratio $= \frac{16.30\% - 7.14\%}{18.43\%}$

=0.497

Treynor's Ratio $= \frac{16.30\% - 7.14\%}{0.90}$

=0.102

Jensen's Ratio = 16.3% – [7.14% + 0.90 *(16.97% - 7.14%)

= 0.0031

Inference:

The Higher Sharpe ratio (0.497) of the portfolio implies the better returns for the amount of risk taken by the investor. The Positive Treynor ratio of the portfolio implies the higher returns for the amount of risk involved in the portfolio.

Table 5: ABSL New Milennium-DP scheme

Fund Name: ABSL New Millennium-Direct Plan(G)

Year	Rp	Rf	SD	B	Rm
2015	11.99	7.18	17.66	1.12	38.6
2016	-2.84	6.75	17.03	1.04	9.7
2017	23.27	7.5	17.57	1.07	6.4
Average of 3 years	10.81%	7.14%	17.42%	1.08	18.23%

Sharpe Ratio $= \frac{10.81\% - 7.14\%}{5.27\%}$

=0.007

Treynor's Ratio $= \frac{10.81\% - 7.14\%}{1.08}$

=0.034

Jensen's Ratio = 10.81% – [7.14% + 1.08 *(18.23% - 7.14%)

= -0.083

Inference:

The Higher Sharpe ratio of the portfolio implies the better risk-adjusted performance. The Positive Treynor ratio of the portfolio implies the higher returns for the amount of risk involved in the portfolio and The Negative Jensen's ratio indicates the underperformance of the portfolio compared to its benchmark index.

Table 6: ICICI Prudential Technology scheme

Fund Name: ICICI Prudential Technology – Direct Plan(G)

Year	Rp	Rf	SD	B	Rm
2015	4.97	7.18	17.47	0.92	38.6
2016	-3.17	6.75	15.23	0.82	9.7
2017	20.65	7.5	15.68	0.83	6.4
Average of 3 years	7.48%	7.14%	16.13%	0.86	18.23%

Sharpe Ratio $= \frac{7.48\% - 7.14\%}{16.13\%}$

=0.0002

Treynor's Ratio $= \frac{7.48\% - 7.14\%}{0.86}$

=0.039

Jensen's Ratio = 7.48% – [7.14% + 0.86 *(18.23% - 7.14%)

= 0.065

Inference: The Lower Sharpe ratio of the portfolio implies the risk-adjusted performance is relatively low. The Positive Treynor ratio of the portfolio implies the higher returns for the amount of risk involved in the portfolio. The Positive Jensen's ratio indicates the fair performance of the portfolio compared to its benchmark index.

Table 7: Franklin India Technology scheme

Fund Name: Franklin India Technology Fund – Direct Plan (growth)

Year	Rp	Rf	SD	B	Rm
2015	4.42	7.18	4.48	0.83	38.6
2016	-1.98	6.75	3.57	0.64	9.7
2017	19.77	7.5	3.72	0.75	6.4
Average of 3 years	7.4%	7.14%	3.92%	0.74	18.23%

Sharpe Ratio $= \frac{7.4\% - 7.14\%}{3.92\%}$

$=0.066$

Treynor's Ratio $= \frac{7.4\% - 7.14\%}{0.74}$

$=0.0035$

Jensen's Ratio $= 7.4\% - [7.14\% + 0.86 * (18.23\% - 7.14\%)$

$= -0.093$

Inference:

The Higher Sharpe ratio of the portfolio implies the better risk-adjusted performance. The Positive Treynor ratio of the portfolio implies the higher returns for the amount of risk involved in the portfolio. The Negative Jensen's ratio indicates the underperformance of the portfolio compared to its benchmark index.

Table 8: SBI IT scheme

Fund Name: SBI IT Fund – Direct Plan (G)

Year	Rp	Rf	SD	B	Rm
2015	3.56	7.18	16.20	0.82	38.6
2016	-2.6	6.75	15.24	0.85	9.7
2017	13.67	7.5	15.36	0.82	6.4
Average of 3 years	4.88%	7.14%	15.6%	0.83	18.23%

Sharpe Ratio $= \frac{4.88\% - 7.14\%}{15.6\%}$

$= -0.145$

Treynor's Ratio $= \frac{4.88\% - 7.14\%}{0.83}$

$= -0.027$

Jensen's Ratio $= 4.88\% - [7.14\% + 0.83 * (18.23\% - 7.14\%)$

$= -0.115$

Inference:

It is observed that all the three ratios (Sharpe, Jensen, and Treynor) are negative; this indicates that the portfolio has underperformed its benchmark index.

Table 9: Regression – Market Volatility Before GST Implementation

Regression output :Coefficients								
		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
Model		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	-4.510	11.621		-.388	.703	-28.925	19.905
	NIFTY	.006	.001	.750	4.807	.000	.003	.008

Table 10: Regression – Market Volatility After GST Implementation

Coefficients								
		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	5.376	2.061		2.609	.017	1.063	9.689
	NIFTY	.005	.000	.983	23.261	.000	.004	.005

Inference:

From the above results of pre and post GST Implementation, it can be inferred that the market volatility has increased a little after the implementation of GST. Before implementation of GST β value of the portfolio was 0.750 whereas after Implementation of GST it has been increased to 0.983.

IV. Suggestions

- It is suggested that investors better to invest in Finance sector funds rather than technological sector funds as almost four out of five schemes have provided returns more than 10% over the period of three years.
- Aditya Birla Sun Life Banking and financial fund Scheme has yielded highest returns over the period of three years. Investors are suggested to invest in this scheme as it has outperformed the market.
- The second preferred scheme to invest in is Invesco Banking Fund scheme which has outperformed market with remarkable returns of 19.35%
- The most suggested scheme in the IT sector fund is Aditya birla sun life scheme which has CAGR of 19.11% for last 3 years.
- It is suggested not to invest much in SBI IT fund as it has been underperforming while comparing to other schemes in the market, although it has given returns of 4.5% over the period of three years.
- It is suggested to invest for a long period for getting fair returns from the fund.
- It is suggested not to invest in Technology sector mutual funds
- It is recommended to share khan to include more banking sector mutual funds in their profile
- It is recommended to sharekhan to provide sufficient knowledge about portfolio to their clients
- Sharekhan must take a step to encourage investors to invest in the mutual funds market.
- It is suggested to lower the brokerage rate which will bring in more customers to sharekhan.
- Fund managers are suggested to actively manage the portfolio.
- It is advised not to invest during any kind of new policies are introduced by the government, which affects the financial system.
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V. Conclusion

It is concluded that, the investors should invest in finance sector funds for better return. The investor should take higher amount of risk to get higher return. The performance of funds keeps changing periodically based on market condition and firms performance. The performance of the various mutual fund schemes were evaluated on the basis of Sharpe index Treynor ratio and Jensen's performance measure whose results will be useful for investors for taking better investment decisions.

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