

Execution Evaluation of Select Mutual Funds in Banking Industry

Mrs. Toopalli Sirisha, Dr. Nalla Bala Kalyan

*Assistant Professor Department of Management Studies Sri Venkateswara College of Engineering
Tirupati-517507, Andhra Pradesh*

*Associate Professor Department of Management Studies Sri Venkateswara College of Engineering
Tirupati-517507, Andhra Pradesh*

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ABSTRACT:

Mutual funds as an option have displayed tremendous growth potential when the markets are optimistic and when wise choices are made. They have performed much better than traditional investment options in the long term and thus help investor beat inflation to some extent. The tremendous success the fund industry enjoyed is due to the fact that it has done more than any other financial services industry to offer investors solid products tailored to meet real financial needs, and marketed those products responsibly. But it cannot be ignored that rapid changes and market pressures are challenging. It cannot be afforded to remain “pigeonholed” by outdated thinking or antiquated business practices. If the long term health of the industry investor protection maintained, the record success can be maintained in the future. The sample schemes studied, SBI Magnum Multiplier plus Scheme topped the list in all the three portfolio performance models. All the sample schemes ensured positive returns due to stock selection skills of fund managers. The variance explained by the market was high in the case of SBI Magnum Multiplier Plus scheme. The market performance had a significant positive influence on scheme performance in case of all the schemes covered under the study.

Keywords: Investment, India, Mutual fund, SBI Magnum.

I. INTRODUCTION

A Mutual Fund is a pool of money that is managed on behalf of the investors, by a professional fund manager. The manager uses the money to buy stocks, bonds and other securities according to specific investment objective that have been established for the fund. The investment range from shares to debentures to money market instruments. Each mutual fund with different type of schemes is managed by respective asset

management company (AMC). An investor can invest his money one or more schemes depending up his choice. The income earned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

1.1 Concept of Mutual Fund

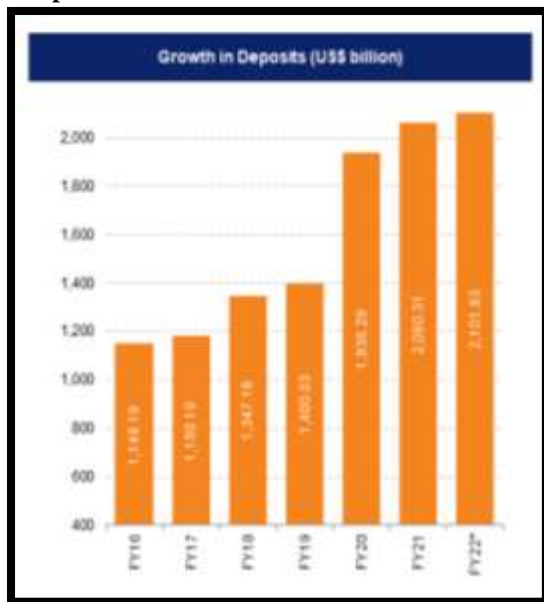
A mutual fund is a common pool of money into which investors place their contributions that are to be invested in accordance with a stated objective. The ownership of the fund is thus joint or “mutual”; the fund belongs to all investors. A single investor’s ownership of the fund is in the same proportion as the amount of the contribution made by him or her bears to the total amount of the fund. Mutual Funds are trusts, which accept savings from investors and invest the same in diversified financial instruments in terms of objectives set out in the trusts deed with the view to reduce the risk and maximize the income and capital appreciation for distribution for the members. A Mutual Fund is a corporation and the fund manager’s interest is too professionally by the manage the funds provide by the investors and provide a return on them after deducting reasonable management fees.

II. BANKING SECTOR IN INDIA

As per the Reserve Bank of India (RBI), India’s banking sector is sufficiently capitalised and well-regulated. The financial and economic conditions in the country are far superior to any other country in the world. Credit, market and liquidity risk studies suggest that Indian banks are generally resilient and have withstood the global downturn well. Indian banking industry has

recently witnessed the roll out of innovative banking models like payments and small finance banks. RBI's new measures may go a long way in helping the restructuring of the domestic banking industry. The digital payments system in India has evolved the most among 25 countries with India's Immediate Payment Service (IMPS) being the only system at level five in the Faster Payments Innovation Index (FPII).*

Market Size Graph1



Source: <https://www.ibef.org/industry/financial-services-india>

The Indian banking system consists of 12 public sector banks, 22 private sector banks, 46 foreign banks, 56 regional rural banks, 1485 urban cooperative banks and 96,000 rural cooperative banks in addition to cooperative credit institutions. As of September 2021, the total number of ATMs in India reached 213,145 out of which 47.5% are in rural and semi urban areas. In FY18-FY21, bank assets across sectors increased. Total assets across the banking sector (including public and private sector banks) increased to US\$ 2.48 trillion in FY21. In FY21, total assets in the public and private banking sectors were US\$ 1,602.65 billion and US\$ 878.56 billion, respectively. During FY16-FY21, bank credit increased at a CAGR of 0.29%. As of FY21, total credit extended surged to US\$ 1,487.60 billion. During FY16-FY21, deposits grew at a CAGR of 12.38% and reached US\$ 2.06 trillion by FY21. Bank deposits stood at Rs. 162.41 trillion (US\$ 2.17 trillion) as of December 31, 2021. According to India Ratings & Research (Ind-

Ra), credit growth is expected to hit 10% in 2022-23 which will be a double-digit growth in eight years. According to the RBI, bank credit stood at Rs. 116.8 lakh crore (US\$ 1.56 trillion) on 31st December 2021. As of February 2022, credit to non-food industries stood at Rs. 114.10 trillion (US\$ 1.53 trillion).

III. 3. RESEARCH METHODOLOGY

The present study is based on field survey method. The study is purely empirical and analytical which is supported by only primary data. Designing a suitable methodology and selecting the analytical tools are important for a meaningful analysis of any research problem. It includes sample design, period of study, and collection of data tools for analysis.

Primary Data: The primary data were collected directly from the sample investors through a well-devised questionnaire.

Secondary Data: the secondary data relating to the study were collected from books, journals, research articles, magazines, reports, newspapers and websites.

IV. 4. NEED FOR THE STUDY

The impressive growth of mutual funds in India has attracted the attention of Indian researchers, individuals and institutional investors during the past ten years. The Indian mutual fund industry is currently in the phase of the consolidation and growth stage of the product life cycle. The competition will intensify in the coming years as has happened in other industries. Hence, it is appropriate, relevant and topical to focus our attention on how the Indian mutual in the coming few years to ascertain what kind of products (mutual fund schemes) would be able to win the investors' confidence and survive in the market place.

V. OBJECTIVES

The following objectives are formulated for the present study.

1. To compare the performance of selected SBI schemas related to equity, debt, sector, index and gilt funds.
2. To evaluate the performance of different SBI mutual fund schemes on the basis of risk-return parameters.
3. To appraise the performance of mutual funds on risk-adjusted measures as suggested by Sharpe and Treynor.

VI. DATA ANALYSIS & INTERPRETATIONS

SBI Magnum Tax Gain Scheme

Table 6.1
Standard Deviation for SBI magnum tax gain scheme

Quarters	Fund (R)	Returns	Average return(\bar{R})	(R- \bar{R})	(R- \bar{R}) ²
2013-14Q1	16.4208		2.390247	14.031	196.8564
Q2	14.77741		2.390247	12.387	153.44
Q3	21.93216		2.390247	19.542	381.89
Q4	-25.8781		2.390247	-28.27	799.1
2014-15Q1	16.778		2.390247	-19.17	367.42
Q2	-0.97991		2.390247	-3.37	11.358
Q3	-24.1742		2.390247	-26.56	705.67
Q4	-2.30721		2.390247	-4.697	22.066
2015-16Q1	45.61404		2.390247	43.224	1868.3
Q2	14.29476		2.390247	11.905	141.72
Q3	6.527752		2.390247	4.1375	17.119
Q4	-0.94259		2.390247	-3.333	11.108
2016-17Q1	1.019195		2.390247	-1.371	1.8798
Q2	10.74282		2.390247	8.3526	69.765
Q3	-1.62773		2.390247	-4.018	16.144
Q4	-8.37401		2.390247	-10.76	115.87
2017-18Q1	-3.3297		2.390247	-5.718	32.697
Q2	-9.15175		2.390247	-11.54	133.22
Q3	-6.91648		2.390247	-9.307	86.615
Q4	16.93387		2.390247	14.544	211.52

$$\sum R = 47.80494 \qquad \sum [(R - \bar{R})]^2 = 5343.745$$

$$\bar{R} = (\sum R) / n = 47.80494 / 20 = 2.390247$$

$$VARIANCE = (\sum [(R - \bar{R})]^2) / N$$

$$Variance = \frac{5343.745}{20} = 267.1872$$

$$\text{Standard Deviation} = \sqrt{VARIANCE} = \sqrt{267.1872} = 16.34586$$

Inference: The Average Return of SBI Magnum Tax Gain Fund is 2.390247 per quarter and Standard Deviation of this Fund is 16.34586 for 5 years.

Table 6.2
Beta calculation for SBI Magnum Tax Gain Fund

Year	Market Returns (x)	Fund Returns (y)	x ²	xy
2013-14Q1	6.805881	16.4208	46.3200	111.758
Q2	1.832499	14.77741	3.3580	27.07959
Q3	-3.36937	21.93216	11.3526	-73.8976
Q4	-9.49951	-25.8781	90.2406	245.8291
2014-15Q1	-2.72163	16.778	7.4072	45.6635
Q2	-8.51035	-0.97991	72.4260	8.339392
Q3	-21.8052	-24.1742	475.4667	527.1235

Q4	-10.2449	-2.30721	104.9579	23.6371
2015-16Q1	17.19024	45.61404	295.5043	784.1162
Q2	15.48403	14.29476	239.7551	221.3405
Q3	5.7057	6.527752	35.5550	37.2454
Q4	5.332257	-0.94259	28.4329	-5.02612
2016-17Q1	-11.0364	1.019195	121.8021	-11.2482
Q2	12.22578	10.74282	149.4696	131.3393
Q3	10.13126	-1.62773	102.6424	-16.491
Q4	5.737027	-8.37401	32.9134	-48.0419
2017-18Q1	-0.56488	-3.3297	0.3190	1.879862
Q2	-13.4167	-9.15175	180.0078	122.7863
Q3	11.74937	-6.91648	138.0476	-81.2643
Q4	12.0768	16.93387	145.8491	204.5069

$$\sum X = 23.1019 \quad \sum Y = 47.80494 \quad \sum X^2 = 2278.828$$

$$\sum XY = 2256.676$$

$$\beta = \frac{(n \sum xy - \sum x \sum y)}{(n \sum x^2 - (\sum x)^2)}$$

$$= \frac{(20(2256.676) - (23.1019)(47.80494))}{(20(2278.828) - (23.1019)^2)}$$

$$= \frac{(45133.52 - 1104.385)}{(45576.56 - 533.6978)}$$

$$= \frac{(44029.14)}{(45042.86)} = 0.977494$$

Inference: The Beta of SBI Magnum Tax Gain Scheme is Less than the Bench Mark i.e., $0.977494 < 1$. The Fund returns greater than the Bench Mark for five Years i.e., $47.80794 > 23.1019$.

Sharpe Ratio calculation for SBI Magnum Tax Gain Fund

$$\text{Sharpe Ratio} = \frac{(R_p - R_f)}{\sigma_p}$$

Standard Deviation $\sigma_p = 16.34586$

$$\text{Fund Average Return } (R_p) = 2.390247$$

$$\text{Risk Free Rate of Investment } R_f = 1.6$$

$$\text{Sharpe Ratio} = \frac{((R_p) - R_f) / \sigma_p}{\frac{2.390247 - 1.6}{16.34586}} = \frac{0.790247}{16.34586} = 0.048345$$

Treynor Ratio calculation for SBI Magnum Tax Gain Fund

$$\text{Treynor Ratio} = \frac{(R_p - R_f)}{\beta_p}$$

$$\text{Fund Beta Value } \beta_p = 0.977494$$

$$\text{Fund Average Return } (R_p) = 2.390247$$

$$\text{Risk Free Rate of Investment } R_f = 1.6$$

$$\text{Treynor Ratio} = \frac{((R_p) - R_f) / \beta_p}{\frac{2.390247 - 1.6}{0.977494}} = \frac{0.790247}{0.977494} = 0.808442$$

Inference: The Sharpe ratio and Treynor ratio of SBI Magnum Tax Gain Fund is 0.048345 and 0.808442.

2. SBI Magnum Equity Fund

Table 6.3

Standard Deviation for SBI Magnum Equity Fund

Quarter	Fund Returns (R)	Average return (\bar{R})	(R - \bar{R})	(R - \bar{R}) ²
2013-14Q1	19.57	3.392398	16.17791	261.7249
Q2	17.705	3.392398	14.3122	204.839
Q3	29.354	3.392398	25.96138	673.9933
Q4	-30.01	3.392398	-33.4009	1115.618
2014-15Q1	-15.94	3.392398	-19.3353	373.8541
Q2	-0.636	3.392398	-4.02815	16.22599
Q3	-22.98	3.392398	-26.3689	695.3189
Q4	-2.799	3.392398	-6.19126	38.33169
2015-16Q1	45.824	3.392398	42.43121	1800.408
Q2	14.771	3.392398	11.37819	129.4631

Q3	5.4333	3.392398	2.040908	4.165306
Q4	0.9391	3.392398	-2.45331	6.018738
2016-17Q1	2.9485	3.392398	-0.44393	0.197078
Q2	12.746	3.392398	9.353414	87.48636
Q3	-2.629	3.392398	-6.02174	36.26141
Q4	-4.965	3.392398	-8.35786	69.85375
2017-18Q1	-1.664	3.392398	-5.05682	25.57138
Q2	-10.42	3.392398	-13.8157	190.8736
Q3	-4.95	3.392398	-8.34213	69.59109
Q4	15.553	3.392398	12.16075	147.8839

$$\sum R = 67.84795 \quad \sum [(R - \bar{R})]^2 = 5947.68$$

$$\bar{R} = (\sum R) / n = \frac{67.84795}{20} = 3.392398$$

$$VARIANCE = \left(\frac{\sum (R - \bar{R})^2}{N} \right)$$

$$VARIANCE = \frac{5947.68}{20} = 297.384$$

$$\text{Standard Deviation} = \sqrt{VARIANCE} = \sqrt{297.384} = 17.24482$$

Inference: The Average Return of SBI Magnum Equity Fund is 3.392398 per quarter and Standard Deviation of this Fund is 17.24482 for 5 years.

Table 6.4
Beta calculation for SBI Magnum Equity Fund

Quarter	Market Returns (x)	Fund Returns (y)	x ²	Xy
2013-14Q1	6.805881	19.57	46.3200	133.1932
Q2	1.832499	17.705	3.3580	32.44366
Q3	-3.36937	29.354	11.3526	-98.9037
Q4	-9.49951	-30.01	90.2406	285.0658
2014-15Q1	-2.72163	-15.94	7.4072	43.3907
Q2	-8.51035	-0.636	72.4260	5.410469
Q3	-21.8052	-22.98	475.4667	501.0072
Q4	-10.2449	-2.799	104.9579	28.67406
2015-16Q1	17.19024	45.824	295.5043	787.7189
Q2	15.48403	14.771	239.7551	228.7082
Q3	5.7057	5.4333	35.5550	31.00081
Q4	5.332257	0.9391	28.4329	5.007449
2016-17Q1	-11.0364	2.9485	121.8021	-32.5404
Q2	12.22578	12.746	149.4696	155.8275
Q3	10.13126	-2.629	102.6424	-26.6386

Q4	5.737027	-4.965	32.9134	-28.487
2017-18Q1	-0.56488	-1.664	0.3190	0.940196
Q2	-13.4167	-10.42	180.0078	139.8463
Q3	11.74937	-4.95	138.0476	-58.1562
Q4	12.0768	15.553	145.8491	187.8323

$$\sum X = 23.1019 \quad \sum Y = 67.84795 \quad \sum X^2 = 2278.828$$

$$\sum XY = 2321.341$$

$$\beta = \frac{(n \sum xy - \sum x \sum y)}{(n \sum x^2 - (\sum x)^2)}$$

$$= \frac{(20(2321.341) - (23.1019)(67.84795))}{(20(2278.828) - (23.1019)^2)}$$

$$= \frac{(46426.82 - 1567.417)}{(45576.56 - 533.6978)} = \frac{(44859.4)}{(45042.86)}$$

$$= 0.995927$$

Inference: The Beta of SBI Magnum Equity Fund is less than the Bench Mark i.e., 0.995927 < 1. The Fund returns are greater than the Bench Mark for Five Years i.e., 1.155095 < 3.392398.

Sharpe Ratio calculation for SBI Magnum Equity Fund

$$\text{Sharpe Ratio} = \frac{((R_p)^- - R_f)}{\sigma_p}$$

$$\text{Standard Deviation } \sigma_p = 17.24482$$

$$\text{Fund Average Return } (R_p)^- = 3.392398$$

$$\text{Risk Free Rate of Investment } R_f = 1.6$$

$$\text{Sharpe Ratio} = \frac{((R_p)^- - R_f)}{\sigma_p} = \frac{3.392398 - 1.6}{17.24482} = \frac{1.792398}{17.24482} = 0.103938$$

Treynor Ratio calculation for SBI Magnum Equity Fund

$$\text{Treynor Ratio} = \frac{((R_p)^- - R_f)}{\beta_p}$$

$$\text{Fund Beta Value } \beta_p = 0.995927$$

$$\text{Fund Average Return } (R_p)^- = 3.392398$$

$$\text{Risk Free Rate of Investment } R_f = 1.6$$

$$\text{Treynor Ratio} = \frac{((R_p)^- - R_f)}{\beta_p} = \frac{3.392398 - 1.6}{0.995927} = \frac{1.792398}{0.995927} = 1.799728$$

Inference: The Sharpe ratio and Treynor ratio of SBI Magnum Equity Fund is 0.103938 and 1.799728.

Table 6.5
SBI Magnum Gilt Fund
Standard Deviation for SBI Magnum Gilt Fund

Quarter	Fund Returns (R)	Average return (R)	(R-R)	(R-R) ²
2013-14Q1	2.49431	1.785036	0.709273	0.503069
Q2	2.948569	1.785036	1.163533	1.353808
Q3	2.375175	1.785036	0.590139	0.348264
Q4	0.972228	1.785036	-0.81281	0.660656
2014-15Q1	1.043707	1.785036	-0.74133	0.549569
Q2	1.752595	1.785036	-0.03244	0.001052
Q3	12.48127	1.785036	10.69624	114.4095
Q4	-3.79566	1.785036	-5.5807	31.14421
2015-16Q1	0.345512	1.785036	-1.43952	2.07223
Q2	-0.23857	1.785036	-2.0236	4.094961
Q3	0.52669	1.785036	-1.25835	1.583435
Q4	1.682277	1.785036	-0.10276	0.010559

2016-17Q1	1.045476	1.785036	-0.73956	0.546949
Q2	0.838029	1.785036	-0.94701	0.896822
Q3	1.372873	1.785036	-0.41216	0.169878
Q4	1.703755	1.785036	-0.08128	0.006607
2017-18Q1	1.533965	1.785036	-0.25107	0.063037
Q2	1.836069	1.785036	0.051033	0.002604
Q3	2.873171	1.785036	1.088135	1.184038
Q4	1.909283	1.785036	0.124247	0.015437

$$\sum R = 35.70073$$

$$\sum [(R - \bar{R})]^2 = 159.6167$$

$$\bar{R} = (\sum R) / n = \frac{35.70073}{20} = 1.785036$$

$$VARIANCE = \left(\frac{\sum (R - \bar{R})^2}{N} \right)$$

$$VARIANCE = \frac{159.6167}{20} = 7.980833$$

$$STANDARD DEVIATION = \sqrt{VARIANCE} = \sqrt{7.980833} = 2.8250$$

Inference: The Average Return of SBI MAGNUM GILT FUND is 1.785036 per quarter and Standard Deviation of this Fund is 2.8250 for 5 years.

Table 6.6
Beta calculation for SBI Magnum Gilt Fund

Quarter	Market Returns (x)	Fund Returns (y)	x ²	xy
2013-14Q1	6.805881	2.49431	46.32002	16.97598
Q2	1.832499	2.948569	3.358053	5.403249
Q3	-3.36937	2.375175	11.35265	-8.00284
Q4	-9.49951	0.972228	90.24069	-9.23569
2014-15Q1	-2.72163	1.043707	7.40727	-2.84058
Q2	-8.51035	1.752595	72.42606	-14.9152
Q3	-21.8052	12.48127	475.4667	-272.157
Q4	-10.2449	-3.79566	104.958	38.8862
2015-16Q1	17.19024	0.345512	295.5044	5.939433
Q2	15.48403	-0.23857	239.7552	-3.69395
Q3	5.7057	0.52669	32.55501	3.005134
Q4	5.332257	1.682277	28.43296	8.970332
2016-17Q1	-11.0364	1.045476	121.8021	-11.5383
Q2	12.22578	0.838029	149.4697	10.24556
Q3	10.13126	1.372873	102.6424	13.90894
Q4	5.737027	1.703755	32.91348	9.774489

2017-18Q1	-0.56488	1.533965	0.319089	-0.86651
Q2	-13.4167	1.836069	180.0078	-24.634
Q3	11.74937	2.873171	138.0477	33.75795
Q4	12.0768	1.909283	145.8491	23.05803

$$\begin{aligned} \sum X &= 23.1019 & \sum Y &= 35.70073 \\ \sum X^2 &= 2278.828 & \sum XY &= -177.958 \\ \beta &= \frac{(n \sum xy - \sum x \sum y) / (n \sum x^2 - (\sum x)^2)}{(20(-177.958) - (23.1019)(35.70073)) / (20(2278.828) - (23.1019)^2)} \\ &= \frac{(-3559.17 - 824.7547) / (45576.56 - 533.6978)}{(-4383.92) / (45042.86)} = -0.09733 \end{aligned}$$

Inference: The Beta of SBI Magnum Gilt Fund is less than the Bench Mark i.e., $-0.09733 < 1$. The Fund returns greater than the Bench Mark for Five Years i.e., $1.785036 > 1.155095$.

Sharpe Ratio calculation for SBI Magnum Gilt Fund

$$\begin{aligned} \text{Sharpe Ratio} &= \frac{((R_p)^- - R_f) / \sigma_p}{\text{Standard Deviation } \sigma_p = 2.8250} \end{aligned}$$

$$\begin{aligned} \text{Fund Average Return } (R_p)^- &= 1.785036 \\ \text{Risk Free Rate of Investment } R_f &= 1.6 \end{aligned}$$

$$\text{Sharpe Ratio} = \frac{((R_p)^- - R_f) / \sigma_p}{2.8250} = \frac{1.785036 - 1.6}{2.8250} = \frac{0.185036}{2.8250} = 0.0655$$

Treynor Ratio calculation for SBI Magnum Gilt Fund

$$\begin{aligned} \text{Treynor Ratio} &= \frac{((R_p)^- - R_f) / \beta_p}{\text{Fund Beta Value } \beta_p = -0.09733} \end{aligned}$$

$$\begin{aligned} \text{Fund Average Return } (R_p)^- &= 1.785036 \\ \text{Risk Free Rate of Investment } R_f &= 1.6 \end{aligned}$$

$$\text{Treynor Ratio} = \frac{((R_p)^- - R_f) / \beta_p}{-0.09733} = \frac{1.785036 - 1.6}{-0.09733} = \frac{0.185036}{-0.09733} = -1.90117$$

Inference: The Sharpe ratio and Treynor ratio of SBI Magnum Gilt Fund is 0.0655 and -1.90117.
SBI Magnum Dynamic Bond Fund

Table 6.7
Standard Deviation for SBI Dynamic Bond Growth Fund

Quarters	Fund (R)	Returns	Average return(R $\bar{}$)	(R-R $\bar{}$)	(R-R $\bar{}$) ²
2013-14Q1	-0.05054		1.018033	-1.06857	1.141838
Q2	1.208575		1.018033	0.190543	0.036306
Q3	1.031262		1.018033	0.013229	0.000175
Q4	-0.25847		1.018033	-1.27651	1.629468
2014-15Q1	-1.9752		1.018033	-2.99323	8.959455
Q2	-1.23871		1.018033	-2.25674	5.092879
Q3	-0.36225		1.018033	-1.38029	1.90519
Q4	0.209801		1.018033	-0.80823	0.653239
2015-16Q1	0.210301		1.018033	-0.80773	0.65243
Q2	0.328969		1.018033	-0.68906	0.474808
Q3	1.044905		1.018033	0.026873	0.000722
Q4	2.518143		1.018033	1.500111	2.250332
2016-17Q1	0.715791		1.018033	-0.30224	0.09135
Q2	2.257931		1.018033	1.239898	1.537347
Q3	1.91071		1.018033	0.892677	0.796873
Q4	1.587467		1.018033	0.569434	0.324255

2017-18Q1	2.609132	1.018033	1.5911	2.531599
Q2	2.195587	1.018033	1.177555	1.386635
Q3	4.427859	1.018033	3.409826	11.62691
Q4	1.989392	1.018033	0.971359	0.943539

$$\sum R = 20.36065 \quad \sum [(R - \bar{R})]^2 = 42.03536$$

$$\bar{R} = \frac{\sum R}{n} = 20.36065 / 20 = 1.018033$$

$$VARIANCE = (\sum (R - \bar{R})^2) / N$$

$$VARIANCE = \frac{42.03536}{20} = 2.101768$$

$$\text{Standard Deviation} = \sqrt{VARIANCE} = \sqrt{2.101768} = 1.449747$$

Inference: The Average Return of SBI Magnum Dynamic Bond Fund is 1.018033 per quarter and Standard Deviation of this Fund is 1.449747 for 5 years.

Table 6. 8
Beta calculation for SBI Magnum Dynamic Bond Fund

Quarter	Market Returns (x)	Fund Returns (y)	x ²	xy
2013-14Q1	6.805881	-0.05054	46.32002	-0.34394
Q2	1.832499	1.208575	3.358053	2.214713
Q3	-3.36937	1.031262	11.35265	-3.4747
Q4	-9.49951	-0.25847	90.24069	2.455371
2014-15Q1	-2.72163	-1.9752	7.40727	5.37577
Q2	-8.51035	-1.23871	72.42606	10.54184
Q3	-21.8052	-0.36225	475.4667	7.899015
Q4	-10.2449	0.209801	104.958	-2.14939
2015-16Q1	17.19024	0.210301	295.5044	3.615124
Q2	15.48403	0.328969	239.7552	5.093768
Q3	5.7057	1.044905	32.55501	5.961917
Q4	5.332257	2.518143	28.43296	13.42739
2016-17Q1	-11.0364	0.715791	121.8021	-7.89976
Q2	12.22578	2.257931	149.4697	27.60496
Q3	10.13126	1.91071	102.6424	19.3579
Q4	5.737027	1.587467	32.91348	9.10734
2017-18Q1	-0.56488	2.609132	0.319089	-1.47385
Q2	-13.4167	2.195587	180.0078	-29.4575
Q3	11.74937	4.427859	138.0477	52.02455
Q4	12.0768	1.989392	145.8491	24.02549

$$\begin{aligned} \sum X &= 23.1019 & \sum Y &= 20.36065 \\ \sum X^2 &= 2278.828 & \sum XY &= 143.906 \\ \beta &= \frac{(n \sum xy - \sum x \sum y)}{(n \sum x^2 - (\sum x)^2)} \\ &= \frac{(20(143.906) - (23.1019)(20.36065))}{(20(2278.828) - (23.1019)^2)} \\ &= \frac{(2878.12 - 470.3697)}{(45576.57 - 533.6978)} \\ &= \frac{(2407.87)}{(45042.87)} = 0.053455 \end{aligned}$$

Inference: The Beta of SBI Magnum Dynamic Bond Fund is lesser than the Bench Mark i.e., $0.053455 < 1$. The Fund returns less than the Bench Mark for Five Years i.e., $1.018033 < 1.155095$

Sharpe Ratio calculation for SBI Magnum Dynamic Bond Fund

$$\begin{aligned} \text{Sharpe Ratio} &= \frac{(R_p - R_f)}{\sigma_p} \\ \text{Standard Deviation } \sigma_p &= 1.449747 \end{aligned}$$

$$\begin{aligned} \text{Fund Average Return } (R_p) &= 1.018033 \\ \text{Risk Free Rate of Investment } R_f &= 1.6 \\ \text{Sharpe Ratio} &= \frac{((R_p) - R_f)/\sigma_p}{1.449747} = \frac{1.018033 - 1.6}{1.449747} = \frac{-0.58187}{1.449747} = -0.40143 \end{aligned}$$

Trenor Ratio calculation for SBI Magnum Dynamic Bond Fund

$$\begin{aligned} \text{Trenor Ratio} &= \frac{(R_p - R_f)}{\beta_p} \\ \text{Fund Beta Value } \beta_p &= 0.053455 \\ \text{Fund Average Return } (R_p) &= 1.018033 \\ \text{Risk Free Rate of Investment } R_f &= 1.6 \\ \text{Trenor Ratio} &= \frac{((R_p) - R_f)/\beta_p}{0.053455} = \frac{1.018033 - 1.6}{0.053455} = \frac{-0.58197}{0.053455} = -10.887 \end{aligned}$$

Inference: The Sharpe ratio and Treynor ratio of SBI Magnum Dynamic Bond Fund is -0.40143 and -10.887.

Table 6.9
SBI Magnum Index Fund
Standard Deviation for SBI Magnum Index Fund

Quarter	Fund (R)	Returns	Average return(R)	(R-R)	(R-R) ²
2013-14Q1	17.49008		2.497517	14.99257	224.7771
Q2	16.11051		2.497517	13.61299	185.3136
Q3	19.10073		2.497517	16.60322	275.6668
Q4	-23.3283		2.497517	-25.8258	666.9721
2014-15Q1	-16.2984		2.497517	-18.7959	353.2869
Q2	-0.3617		2.497517	-2.85922	8.175126
Q3	-25.0892		2.497517	-27.5867	761.0268
Q4	-0.56822		2.497517	-3.06574	9.398737
2015-16Q1	39.91302		2.497517	37.4155	1399.92
Q2	17.03162		2.497517	14.53411	211.2402
Q3	2.001612		2.497517	-0.4959	0.245921
Q4	0.153343		2.497517	-2.34417	5.495152
2016-17Q1	1.512913		2.497517	-0.9846	0.969445
Q2	15.29896		2.497517	12.80145	163.877
Q3	-0.34995		2.497517	-2.84747	8.108074
Q4	-5.51068		2.497517	-8.0082	64.13129
2017-18Q1	-4.09706		2.497517	-6.59458	43.48847
Q2	-12.367		2.497517	-14.8645	220.9539
Q3	-4.87311		2.497517	-7.37062	54.32611
Q4	14.18115		2.497517	11.68363	136.5073

$$\sum R = 49.95033$$

$$\sum [(R - \bar{R})]^2 = 4793.88$$

$$\bar{R} = (\sum R) / n = \frac{49.95033}{20} = 2.497517$$

$$VARIANCE = \left(\frac{\sum (R - \bar{R})^2}{N} \right)$$

$$VARIANCE = \frac{4793.88}{20} = 239.694$$

$$\text{Standard Deviation} = \sqrt{VARIANCE} = \sqrt{239.694} = 15.48205$$

Inference: The Average Return of SBI Magnum Index Fund is 2.497517 per quarter and Standard Deviation of this Fund is 15.482054 for 5 years.

Table 6.10
Beta Calculation for SBI Magnum Index Fund

Quarter	Market Returns (x)	Fund Returns (y)	x ²	xy
2013-14Q1	6.805881	17.49008	46.32002	119.0354
Q2	1.832499	16.11051	3.358053	29.5225
Q3	-3.36937	19.10073	11.35265	-64.3574
Q4	-9.49951	-23.3283	90.24069	221.6073
2014-15Q1	-2.72163	-16.2984	7.40727	44.35825
Q2	-8.51035	-0.3617	72.42606	3.078199
Q3	-21.8052	-25.0892	475.4667	547.075
Q4	-10.2449	-0.56822	104.958	5.821347
2015-16Q1	17.19024	39.91302	295.5044	686.1144
Q2	15.48403	17.03162	239.7552	263.7182
Q3	5.7057	2.001612	32.55501	11.4206
Q4	5.332257	0.153343	28.43296	0.817664
2016-17Q1	-11.0364	1.512913	121.8021	-16.6971
Q2	12.22578	15.29896	149.4697	187.0417
Q3	10.13126	-0.34995	102.6424	-3.54545
Q4	5.737027	-5.51068	32.91348	-31.6149
2017-18Q1	-0.56488	-4.09706	0.319089	2.314348
Q2	-13.4167	-12.367	180.0078	165.9243
Q3	11.74937	-4.87311	138.0477	-57.2559
Q4	12.0768	14.18115	145.8491	171.2629

$$\sum X = 23.1019$$

$$\sum Y = 49.95033$$

$$\sum X^2 = 2278.828 \quad \sum XY = 2285.641$$

$$\beta = \frac{(n \sum xy - \sum x \sum y)}{(n \sum x^2 - (\sum x)^2)}$$

$$=$$

$$\frac{(20(2285.641) - (23.1019)(49.95033))}{(20(2278.828) - (23.1019)^2)}$$

$$= \frac{(45712.82 - 1153.948)}{(45576.57 - 533.698)}$$

$$= \frac{(44558.88)}{(45042.87)} = 0.989255$$

Inference: The Beta of SBI Magnum Index Fund is less than than the Bench Mark i.e., $0.989255 < 1$. The Fund returns greater than the Bench Mark for five Years i.e., $2.497517 > 1.155095$.

Sharpe Ratio calculation for SBI Magnum Index Fund

$$\begin{aligned} \text{Sharpe Ratio} &= ((R_p)^- - R_f) / \sigma_p \\ \text{Standard Deviation } \sigma_p &= \mathbf{15.482054} \\ \text{Fund Average Return } (R_p)^- &= \mathbf{2.497517} \\ \text{Risk Free Rate of Investment } R_f &= \mathbf{1.6} \\ \text{Sharpe Ratio} &= \frac{((R_p)^- - R_f) / \sigma_p}{\frac{2.497517 - 1.6}{15.482054}} = \frac{0.897516}{15.482054} = \mathbf{0.05797} \end{aligned}$$

Treynor Ratio calculation for SBI Magnum Index Fund

$$\begin{aligned} \text{Treynor Ratio} &= ((R_p)^- - R_f) / \beta_p \\ \text{Fund Beta Value } \beta_p &= \mathbf{0.989255} \\ \text{Fund Average Return } (R_p)^- &= \mathbf{2.497517} \\ \text{Risk Free Rate of Investment } R_f &= \mathbf{1.6} \\ \text{Treynor Ratio} &= \frac{((R_p)^- - R_f) / \beta_p}{\frac{2.497517 - 1.6}{0.989255}} = \frac{0.897516}{0.989255} = \mathbf{0.907265} \end{aligned}$$

Inference: The Sharpe ratio and Treynor ratio of SBI MAGNUM INDEX FUND is 0.05797 and 0.907265.

Table 6.11
SBI Magnum Sector IT Fund
Standard Deviation for SBI Magnum Sector IT Fund

Quarter	Fund (R)	Returns	Average return (R ⁻)	(R-R ⁻)	(R-R ⁻) ²
2013-14Q1	9.189391		0.753729	8.435662	71.1604
Q2	-22.2869		0.753729	-23.0406	530.87
Q3	9.624724		0.753729	8.870995	78.69455
Q4	-26.6934		0.753729	-27.4471	753.3442
2014-15Q1	-2.0274		0.753729	-2.78113	7.734663
Q2	-17.9104		0.753729	-18.6642	348.3515
Q3	-38.3495		0.753729	-39.1032	1529.064
Q4	-12.1145		0.753729	-12.8683	165.5923
2015-16Q1	52.90557		0.753729	52.15184	2719.814
Q2	35.04274		0.753729	34.28901	1175.736
Q3	14.44824		0.753729	13.69451	187.5395
Q4	-2.4667		0.753729	-3.22043	10.37116
2016-17Q1	1.782178		0.753729	1.028449	1.057708
Q2	9.985316		0.753729	9.231587	85.22219
Q3	9.590235		0.753729	8.836506	78.08385
Q4	-4.75059		0.753729	-5.50432	30.29757
2017-18Q1	-6.48186		0.753729	-7.23559	52.35373
Q2	-9.47463		0.753729	-10.2284	104.6193
Q3	7.935711		0.753729	7.181982	51.58086
Q4	7.126437		0.753729	6.372708	40.6114

$$\begin{aligned} \sum R &= \mathbf{15.07458} & \sum [(R - R)^2] &= \mathbf{8022.099} \\ R^- &= (\sum R) / n = \frac{15.07458}{20} = \mathbf{0.753729} \end{aligned}$$

$$\begin{aligned} \text{VARIANCE} &= (\frac{[\sum (R - R)^2]}{N}) \\ \text{VARIANCE} &= \frac{8022.099}{20} = \mathbf{401.1049} \end{aligned}$$

$$\text{Standard Deviation} = \sqrt{\text{VARIANCE}} = \sqrt{401.1049} = 20.0276$$

Inference: The Average Return of SBI Magnum Sector IT FUND is 0.753729 per quarter and Standard Deviation of this Fund is 20.0276 for 5 years.

Table 6.12
Beta calculation for SBI Magnum Sector it Fund

Quarter	Market Returns (x)	Fund Returns (y)	x ²	xy
1.	6.805881	9.189391	46.32002	62.5419
2.	1.832499	-22.2869	3.358053	-40.8407
3.	-3.36937	9.624724	11.35265	-32.4293
4.	-9.49951	-26.6934	90.24069	253.5741
5.	-2.72163	-2.0274	7.40727	5.517825
6.	-8.51035	-17.9104	72.42606	152.4242
7.	-21.8052	-38.3495	475.4667	836.2188
8.	-10.2449	-12.1145	104.958	124.1122
9.	17.19024	52.90557	295.5044	909.4594
10.	15.48403	35.04274	239.7552	542.6028
11.	5.7057	14.44824	32.55501	82.4373
12.	5.332257	-2.4667	28.43296	-13.1531
13.	-11.0364	1.782178	121.8021	-19.6688
14.	12.22578	9.985316	149.4697	122.0783
15.	10.13126	9.590235	102.6424	97.16117
16.	5.737027	-4.75059	32.91348	-27.2543
17.	-0.56488	-6.48186	0.319089	3.661472
18.	-13.4167	-9.47463	180.0078	127.1183
19.	11.74937	7.935711	138.0477	93.2396
20.	12.0768	7.126437	145.8491	86.06455

$$\sum X = 23.1019 \quad \sum Y = 15.07458$$

$$\sum X^2 = 2278.828 \quad \sum XY = 3364.866$$

$$\beta = \frac{(n \sum xy) - (\sum x \sum y)}{(n \sum x^2) - (\sum x)^2}$$

$$= \frac{(20(3364.866) - (23.1019)(15.07458))}{(20(2278.828) - (23.1019)^2)}$$

$$= \frac{(67297.31 - 348.2514)}{(45576.57 - 533.698)}$$

$$= \frac{(66949.06)}{(45042.87)} = 1.486341$$

Inference: The Beta of SBI Magnum Sector it Fund is greater than the Bench Mark i.e., 1.486341

> 1. The Fund returns less than the Bench Mark for five Years i.e., 0.753729 < 1.15595

Sharpe Ratio calculation for SBI Magnum Sector it Fund

$$\text{Sharpe Ratio} = \frac{(R_p) - R_f}{\sigma_p}$$

$$\text{Standard Deviation } \sigma_p = 20.0276$$

$$\text{Fund Average Return } (R_p) = 0.753729$$

$$\text{Risk Free Rate of Investment } R_f = 1.6$$

$$\text{SHARPE RATIO} = \frac{((R_p) - R_f)}{\sigma_p} = \frac{0.753729 - 1.6}{20.0276} = \frac{-0.84627}{20.0276} = -0.04226$$

Treynor Ratio calculation for SBI Magnum Sector It Fund

Treynor Ratio = $((R_p)^- - R_f) / \beta_p$
 Fund Beta Value $\beta_p = 1.486341$
 Fund Average Return $(R_p)^- = 0.753729$
 Risk Free Rate of Investment $R_f = 1.6$

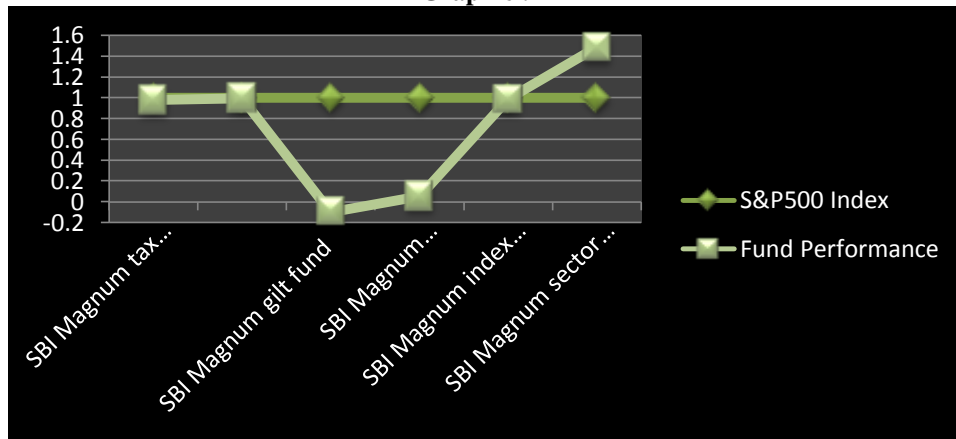
$$\text{Treynor Ratio} = \frac{((R_p)^- - R_f)}{\beta_p} = \frac{0.753729 - 1.6}{1.486341} = \frac{-0.84627}{1.486341} = -0.56937$$

Inference: The Sharpe ratio and Treynor ratio of SBI Magnum Sector It Fund is -0.04226 and -0.56937

Table 6.13
Fund Returns Vs Benchmark

Funds	S&P500 Index	Fund Performance
SBI Magnum tax gain fund	1	0.977494
SBI Magnum equity fund	1	0.995927
SBI Magnum gilt fund	1	-0.09733
SBI Magnum dynamic bond fund	1	0.053455
SBI Magnum index fund	1	0.989255
SBI Magnum sector IT fund	1	1.486341

Graph 6.14



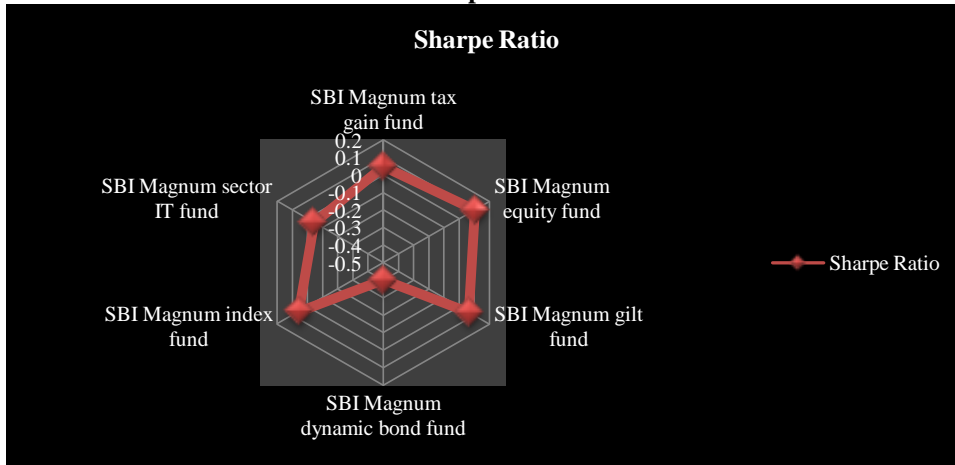
Interpretation: In SBI mutual funds SBI gilt fund has lowest beta (-0.09733) value which indicates it is less volatile to market changes compared to other

funds. The SBI IT funded highest beta (1.486341) which means it is more volatile to the market changes.

Table 6.14
Sharpe Measure

Funds	Sharpe Ratio
SBI Magnum tax gain fund	0.048345
SBI Magnum equity fund	0.103938
SBI Magnum gilt fund	0.0655
SBI Magnum dynamic bond fund	-0.40143
SBI Magnum index fund	0.05797
SBI Magnum sector IT fund	-0.04226

Graph 6.14



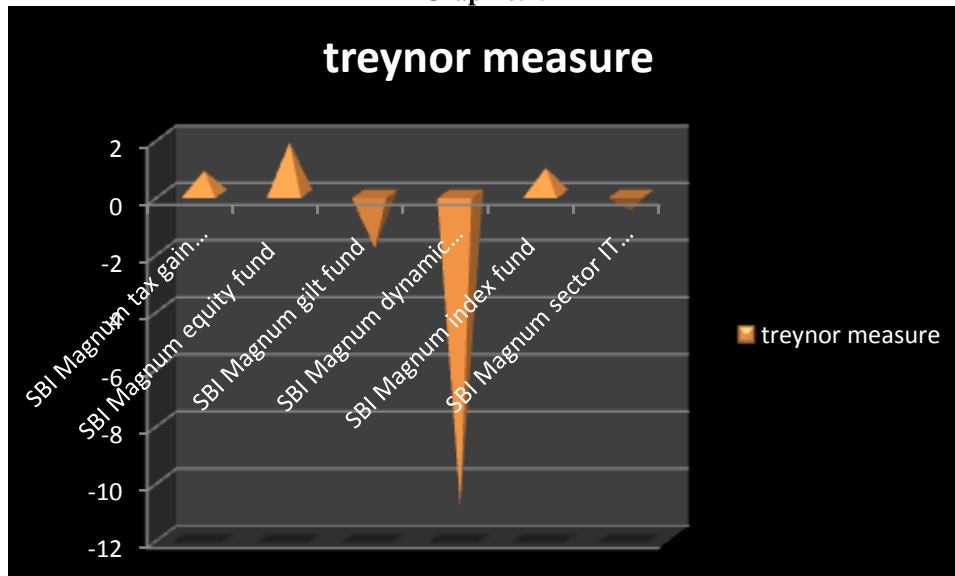
Interpretation: In SBI mutual funds SBI Magnum equity and SBI Magnum gilt funds has highest shape ratio 0.103938 and 0.0655 respectively.

Which indicates these funds has earned excess returns on portfolio of per unit of risk (total risk) compared to other funds

Table 6.15
Treynor Measure

Funds	Treynor measure
SBI Magnum tax gain fund	0.808442
SBI Magnum equity fund	1.799728
SBI Magnum gilt fund	-1.90117
SBI Magnum dynamic bond fund	-10.887
SBI Magnum index fund	0.907265
SBI Magnum sector IT fund	-0.56937

Graph 6.15

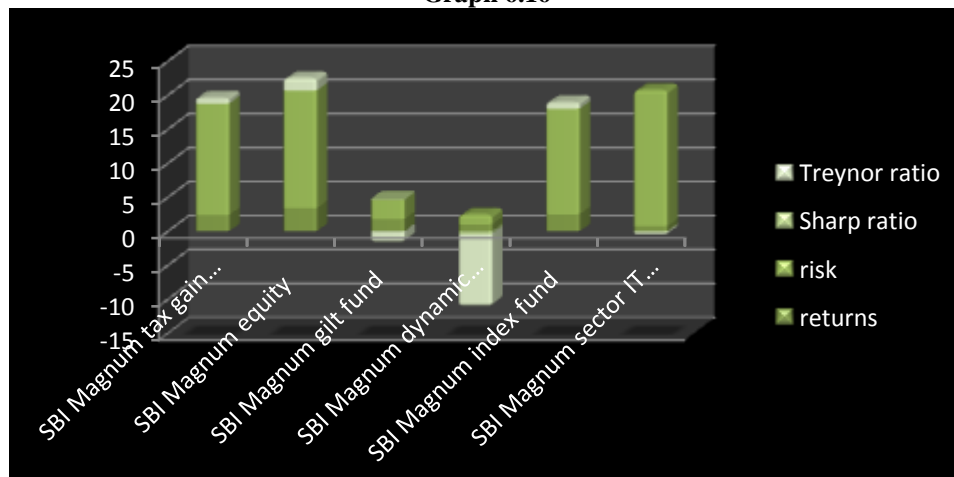


Interpretation: In SBI mutual funds SBI magnum equity fund has highest treynor ratio compared to other funds. The SBI magnum gilt fund has lowest treynor ratio compared to other funds

Table 6.16
Risk/Returns Analysis
SBI Mutual Funds

Fund Name	Returns	Risk	Sharp ratio	Treynor ratio
SBI Magnum tax gain fund	2.390247	16.34586	0.048345	0.808442
SBI Magnum equity	3.392398	17.24482	0.103938	1.799728
SBI Magnum gilt fund	1.785036	2.8250	0.0655	-1.90117
SBI Magnum dynamic bond fund	1.018033	1.449747	-0.40143	-10.887
SBI Magnum index fund	2.497517	15.482054	0.05797	0.907265
SBI Magnum sector IT fund	0.753729	20.0276	-0.04226	-0.56937

Graph 6.16



Interpretation: In the above all funds Magnum Equity is best performer because high returns, sharp ratio and treynor ratio. IT fund is least performer it give less returns and have high risk.

VII. FINDINGS

1. SBI it, dynamic bond and gilt funds are provided quarterly compounded returns of (0.7537), (1.1080) and (1.785036) respectively with risk of (20.0276), (1.449757) and (2.8250). These funds performed lower then compared to other funds.
2. Magnum equity, tax gain and magnum index funds quarterly compounded returns of (3.392378), (2.390247) and (2.497517) with risk of (17.24482), (16.34586) and (15.482054) respectively. These funds perform well compared to other funds.
3. SBI Magnum equity fund have shown a good performance among the selected SBIMF growth funds.

4. The performance of SBI IT fund shown the least performance among the selected funds i.e., (0.753729) return with risk of (20.0276).
5. SBI IT fund have high risk but low returns. It shows the inefficiency of the fund.
6. Low risky fund is SBI dynamic bond fund and the same way fund generate low returns.

VIII. SUGGESTIONS

1. The investors who like low risk, they would prefer to invest in SBI Magnum Gilt Fund and SBI Dynamic Bond Funds.
2. From the study is suggested that the investor who wants to high returns and risk if they are ready to face they may invest in SBI Magnum Equity Fund.
3. The investors like speculators can go ahead in investing in SBI IT fund, while it is fluctuating more and risk is high.
4. Investors need to bear in mind that these rankings and categories are based on historical

performance, which may or may not be repeated in future.

IX. CONCLUSION

Mutual funds as an option have displayed tremendous growth potential when the markets are optimistic and when wise choices are made. They have performed much better than traditional investment options in the long term and thus help investors beat inflation to some extent. The tremendous success the fund industry enjoyed is due to the fact that it has done more than any other financial services industry to offer investors solid products tailored to meet real financial needs, and marketed those products responsibly. But it cannot be ignored that rapid changes and market pressures are challenging. It cannot be afforded to remain “pigeonholed” by outdated thinking or antiquated business practices. If the long term health of the industry investor protection is maintained, the record success can be maintained in the future. The sample scheme studied, the SBI Magnum Multiplier plus Scheme, topped the list in all the three portfolio performance models. All the sample schemes ensured positive returns due to the stock selection skills of fund managers. The variance explained by the market was high in the case of the SBI Magnum Multiplier Plus scheme. The market performance had a significant positive influence on scheme performance in the case of all the schemes covered under the study.

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