

**Chapter- 5**  
**PERFORMANCE APPRAISAL OF SELECTED**  
**SCHEMES OF**  
**INDIAN PRIVATE SECTOR'S MUTUAL FUND**

- 5.1 Introduction
- 5.2 Return analysis
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## 5.1 Introduction:

“Mutual Fund industries today with about 34 players and more than 6 hundred schemes, is one of the most preferred investment avenue in India”. Retail investors face several problems in selecting proper schemes and funds. Selection of fund depends on investment strategy as well as management style, but the funds performance is also an important indicator. As we know that past performance can not be sustained in future, therefore it is necessary to assess the past performance of schemes correctly. This can be done with the help of NAV and Market Return. This study tries to explain the assessment and analysis of selected schemes on the basis of NAV of schemes and market return according to Bombay Stock Exchange Index (BSE Sensex).

This chapter has covered NAV based analysis of selected schemes of nine Indian private sectors mutual funds. They are as under:

1. Benchmark Mutual Fund,
2. Cholamandalam Mutual Fund,
3. Escorts Mutual Fund,
4. J M Mutual Fund,
5. Kotak Mutual Fund,
6. Reliance Mutual Fund,
7. Sundaram Mutual Fund,
8. Tata Mutual Fund and
9. Taurus Mutual Fund.

For the purpose of analysis, 65 schemes are selected for the study period 2002-03 to 2004-05. To carry out risk-return analysis, data of such schemes are classified according to company wise, fund-class wise as well as overall rank wise. Risk-Return performance has been calculated and evaluated on the basis of weekly NAV of concerned schemes as well as weekly market Sensex as per Bombay Stock Exchange Index ( BSE Sensex) from the year 2002-03 to 2004-05. Generally, Friday is the last working day of the week, therefore every Friday's NAV and BSE Sensex has been selected. If holiday or book-closer day falls on such a day then previous days NAV and BSE Sensex is taken. Risk-Return also been evaluated with respect to Correlation between Weekly Average Return and Standard Deviation (SD) of selected schemes for study period.

Also an effort is made to analyze return of mutual fund schemes with reference to market return. For this Beta value has been calculated which is based on weekly BSE Sensex return. To get meaningful result and evaluation, study has been relied on models of performance appraisal like Sharpe, Treynor and Jensen models.

## **NAV BASED ANALYSIS**

### **5.2 INTRODUCTION OF SCHEMES:**

Net Asset Value (NAV) of schemes is the cumulative market value of the assets against net liabilities of such schemes. It is the value represented by the ownership of one unit in the fund. NAV is the most widely accepted standard for measuring the performance of mutual fund. Every mutual fund shall compute the Net Asset Value of each scheme by dividing the net assets of the scheme by the number of units outstanding on the valuation date. The Net Asset Value of the scheme shall be calculated and published at least in two daily newspapers at intervals of not exceeding one week. Provided that the Net Asset Value of any scheme for special target segment or any monthly income scheme which are not mandatorily required to be listed in any stock exchange under Regulation 32, may publish the Net Asset Value at monthly or quarterly intervals as may be permitted by the Board. Weekly NAV of 65 schemes has been selected to study and analyzed the performance of Indian Private Sectors funds from the year 2002-03, 2003-04 and 204-05. Among the 65 schemes:

- ❖ 7 Balance schemes,
- ❖ 5 Equity Link Service Schemes(ELSS),
- ❖ 21 Equity oriented schemes,
- ❖ 10 Gilt schemes,
- ❖ 17 Income schemes and
- ❖ 5 Money Market Instruments schemes.

Data of NAV of such schemes have been classified in to three categories viz Company wise, Fund –Class and overall rank wise.

There are 4 schemes which inception date falls after the First April 2002; therefore, data not available for whole year. They are Sundaram Select Focus (D), Sundaram Income plus (G), Sundaram Income plus (D), Kotak Bond

Short Term Plan (G). Whereas data of Reliance Banking Fund (D), RGSF Long Term Gilt Retail (G) and Benchmark Junior BeES only of two years data given.

### 5.3 RETURN ANALYSIS:

Return analysis of schemes are carried out in two parts, first according to average weekly return and second yearly NAV return.

#### [A]NAV BASED AVERAGE WEEKLY RETURN ANALYSIS:

Average weekly returns have been obtained by dividing the summation of the weekly returns of schemes by total number of weeks a year for which returns are calculated.

$$\text{Avg. } R_p = (R_{p1} + R_{p2} + R_{p3} + \dots + R_{pn})/N$$

Where,

$R_{p1} + R_{p2} + R_{p3} + \dots + R_{pn}$  denotes the weekly returns for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> ..... and so on. N is the total number of weeks a year. Average weekly returns are analyzed in three categories like

1. Mutual Fund-Company wise
2. Fund-Class wise
3. Overall Rank wise.

#### 1. MUTUAL FUND WISE ANALYSIS.

Following table no.5.1 indicates the mutual fund company wise average weekly return and rank while table 5.2 shows positive and negative average return of selected schemes based on average weekly return of selected schemes of Indian private sectors mutual funds from the year 2002-03 to 2004-05.

**Table: 5.1 Company Wise NAV Based Average Weekly Return And Ranking Of Selected Schemes**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg. Rp(%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
1	Benchmark Junior BeES	Equity	N/A	N/A	1.9153	1	0.4985	1
2	Benchmark Nifty BeES	Equity	-0.2524	1	1.1574	2	0.2540	2
7	Chola Triple Ace (G)	Income	0.1972	1	0.1614	4	-0.0085	6
3	Chola Gilt Investment Plan (G)	Gilt	0.1953	2	0.2877	3	-0.0098	7
9	Chola Freedom Income STF (G)	Income	0.1383	3	-0.7201	7	0.0680	4
5	Chola Freedom Income STF (HD)	Income	0.1382	4	0.0299	6	0.0492	5
4	Chola Liquid Fund (G)	Mm	0.1201	5	0.0898	5	0.0887	3
8	Chola Opportunities Fund (QD)	Equity	-0.3320	6	0.7615	1	1.0222	1
6	Chola Opportunities Fund (G)	Equity	-0.3343	7	0.7157	2	0.5475	2
13	Escorts Income Bond (G)	Income	1.2019	1	0.2820	4	0.1818	4
10	Escorts Income Plan (D)	Equity	0.3389	2	0.0940	6	-0.0582	7
15	Escorts Gilt Fund (D)	Gilt	0.2314	3	0.1474	5	-0.0117	6
11	Escorts Gilt Fund (G)	Gilt	0.1825	4	0.1469	5	-0.0109	5

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg. Rp(%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
12	Escorts Growth Plan (G)	Income	0 1070	5	1.0986	2	0.5385	1
14	Escorts Balanced Fund (G)	Balance	0 0962	6	1.0168	3	0 4106	2
16	Escorts Tax Plan (D)	ELSS	0.0749	7	1.3435	1	0.3434	3
20	J M Basic Fund	Equity	1 6730	1	3.7440	1	0.2297	2
17	J M Income Fund (G)	Income	0.2109	2	0.1749	4	0.0152	4
19	J M Equity Fund (G)	Equity	0.0429	3	1.3926	2	0.4463	1
18	J M Balanced Fund (G)	Balance	-0.0372	4	0.7848	3	0.2176	3
26	Kotak Bond Deposit Plan (G)	Income	0.2001	1	0.1677	6	0.0122	9
23	Kotak Bond Deposit Plan (D)	Income	0.1976	2	0.2658	5	0.0106	10
29	Kotak Bond Short Term Plan (G)	Income	0.1417	3	0.1154	7	0.0831	6
25	Kotak Gilt Saving Plan (G)	Gilt	0.1245	4	0.0840	9	0 0909	5
28	Kotak Liquid Regular (G)	Mm	0.1227	5	0 0878	8	0 0814	7
27	Kotak Bond Regular Plan (AD)	Income	0.0913	6	0 0580	10	0 0235	8
24	Kotak Balance	Balance	0.0514	7	0 8386	3	0.5930	3
22	Kotak Liquid Regular (D)	Mm	0.0021	8	0.0007	11	0.0005	11
30	Kotak-30 (G)	Equity	-0.0044	9	1.4812	1	0.4797	4
31	Kotak Tech	Equity	-0.0604	10	0.6987	4	0.7338	1
21	Kotak MNC	Equity	-0.2485	11	1.3626	2	0.7005	2
32	Reliance Vision Fund (G)	Equity	0.5814	1	1.6491	3	0.6060	4
33	Reliance Growth Fund (D)	Equity	0.5479	2	1.8140	2	0.6942	2
34	Reliance Growth Fund (G)	Equity	0.2816	3	1.8303	1	0.8825	1
35	Reliance Income Fund (G)	Income	0.1905	4	0 1811	5	0 0446	7
38	Reliance Medium Term Fund (G)	Income	0.1826	5	0.1274	6	0.0206	9
36	Reliance Monthly Income Plan (G)	Income	0.1783	5	-0.4393	9	0.1004	5
37	Reli.Liq.Fund Treasury Plan (WD)	Mm	0.1616	6	0.0315	8	0.0219	8
39	Reliance Banking Fund (D)	Equity	N/A	N/A	1.5812	4	0.6532	3
40	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.1251	7	0.0609	6
44	Sundaram Select Focus (D)	Equity	0.2488	1	1.4697	2	-0.1574	9
43	Sundaram Income Plus (D)	Income	0.1988	2	0.0279	10	0.0250	5
42	Sundaram Income Plus (G)	Income	0.1956	3	0 1249	6	0.0834	4
41	Sundaram Money Fund (G)	Mm	0.1197	4	0 0939	7	0.0902	3
46	Sundaram Gilt Fund (G)	Gilt	0 1195	5	0 0850	8	0.0225	6
45	Sundaram Gilt Fund (D)	Gilt	0.1184	6	0 0549	9	0.0011	7
48	Sundaram Balanced Fund (D)	Balance	0.0140	7	1 0313	4	-0 1189	8
47	Sundaram Growth Fund (D)	Equity	0.0043	8	0.4287	5	0 4608	1
49	Sundaram Tax Saver 97	ELSS	-0 0597	9	1.5528	1	0.3187	2
50	Sundaram Tax Saver (D)	ELSS	-0 0681	10	1.2559	3	-4.6275	10
57	Tata Young Citizens' Fund	Balance	16.0879	1	0.4840	8	0 2180	7
55	Tata Select Equity Fund (G)	Equity	0 6409	2	1 6774	3	0.6769	2
52	Tata Life Sci. & Tech Fund (G)	Equity	0.6305	3	1.9577	1	0.8236	1
60	Tata Balanced Fund (D)	Balance	0 5574	4	1.1434	5	0 4601	6
56	Tata Gilt Securities Fund (D)	Gilt	0 4233	5	0.2837	10	-0.1240	10
58	Tata Balanced Fund (G)	Balance	0.3397	6	1.0121	6	0.5616	4
51	Tata Gilt Securities Fund (G)	Gilt	0.2769	7	0.5901	7	-0.0863	9
53	Tata Income Fund (G)	Income	0.1460	8	0.3279	9	0 1495	8
59	Tata Tax Saving Fund	ELSS	0 0439	9	1 5264	4	0.5683	5
54	Tata Pure Equity Fund (G)	Equity	0.0127	10	1 7754	2	0.6536	3
61	Taurus Discovery Fund	Equity	4 7555	1	1.0319	3	1.0851	3
62	Taurus Libra Tax Shield	ELSS	0.1018	2	1.5714	1	1.5007	1
63	Taurus Libra Gilt	Gilt	0.0905	3	0.1716	4	0 0195	5
64	Taurus Libra Bond	Income	0.0727	4	0.1260	5	0.1940	4
65	Taurus Star Share	Equity	-0.0893	5	1.3774	2	1.1159	2
	Over All Average Return		0.5116		0.7364		0.2249	

**Table: 5.2 Positive and Negative Average Return of Selected Schemes Based On Average Weekly Return**

Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
	Positive	Negative	Positive	Negative	Positive	Negative	
Benchmark MF	0	1	2	0	2	0	
%	0.00	100.00	100.00	0.00	100.00	0.00	66.67
Cholamandalam MF	5	2	6	1	5	2	
%	71.43	28.57	85.71	14.29	71.43	28.57	76.19
Escorts MF	7	0	7	0	4	3	
%	100.00	0.00	100.00	0.00	57.14	42.86	85.71
J M MF	3	1	4	0	4	0	
%	75.00	25.00	100.00	0.00	100.00	0.00	91.67
Kotak MF	8	3	11	0	11	0	
%	72.73	27.27	100.00	0.00	100.00	0.00	90.91
Reliance MF	7	0	8	1	9	0	
%	100.00	0.00	88.89	11.11	100.00	0.00	96.30
Sundaram MF	8	2	10	0	7	3	
%	80.00	20.00	100.00	0.00	70.00	30.00	83.33
Tata MF	10	0	10	0	8	2	
%	100.00	0.00	100.00	0.00	80.00	20.00	93.33
Taurus MF	4	1	5	0	5	0	
%	80.00	20.00	100.00	0.00	100.00	0.00	93.33
Total	52	10	63	2	55	10	
%	83.87	16.13	96.92	3.08	84.62	15.38	88.47

Benchmark Junior BeES and Benchmark Nifty BeES have earned positive return constantly during the year 2004 and 2005. Out of 7 schemes of Cholamandalam mutual fund, 2 schemes have earned negative return in the year 2003 and 2005. However, in the year 2004, it fell in 1 only and 6 schemes got positive returns. All schemes of Escorts Mutual Fund showed a good return in the year 2003 and 2004. While Escorts Gilt (D) and Escorts Gilt (G) and Escorts Income Plan (D) turned in to negative from positive in the year 2005. Consistently positive returned earned by 4 schemes out of 7 schemes. Most of all schemes have recorded consistently positive returns in case of J M Basic mutual fund schemes except JM Balance Fund (D). Data of Kotak Mutual Fund shows 72.73% Schemes earned positive returns and 27.27 % schemes indicate negative return. Out of 11 schemes, 8 schemes became success to provide constantly positive return from 2003 to 2005. During the year 2004 & 2005, all 11 schemes enjoyed positive returns.

In the year 2003 and 2005, all selected schemes of Reliance mutual fund declared their positive returns. In the year 2004, only 1 scheme i.e. Reliance Monthly Income plan (G) has not achieved positive return. 20 % (2) schemes of Sundaram Mutual fund not performed well whereas 80 % (8) schemes declared positive returns in the year 2003. All the 10 schemes performed well in 2004 and in the year 2005, one scheme added in the negative return as compared to 2003. Sundaram Tax Saver 97 turned into positive categories from negative categories in subsequent year. The performance of Sundaram Select Focus was very good and it was at first in rank with 0.2488 % returns in the year 2003 which goes down up to 9<sup>th</sup> rank (-0.0154%) in the year 2005. It shows very high fluctuation in returns.

Out of 10 schemes of Tata mutual funds, all schemes enjoyed positive returns continuously for first two years but in the year 2005, two schemes (20%) have been turned down from positive to negative returns. While in the case of Taurus Mutual funds, only 1 scheme has registered its negative return out of 4 selected schemes in the year 2003. In the year 2004 and 2005, all 4 schemes declared their positive return. Taurus Star Share also stated to earn profit from 2004.

When we consider overall combined period of three years, Reliance Mutual Fund stood at First rank with 96.30 % positive return followed by Tata Mutual Fund & Taurus Mutual Fund. The performance of Benchmark Mutual Fund having 66.67 % as a success percentage, which is lowest among 9 private mutual funds. Overall average return of 65 selected schemes observed 0.5116 % in 2003, 0.7364% in 2004 and 0.2249 % in 2005.

## **2. FUND-CLASS WISE ANALYSIS OF MUTUAL FUND:**

Following table no.5.3 indicates the fund class wise average weekly return and rank while table 5.4 shows positive and negative average return of selected schemes based on average weekly return of selected schemes of Indian private sectors mutual funds from the year 2002-03 to 2004-05.

**Table: 5.3 Fund-Class Wise Ranking Of Selected Schemes According To  
NAV Based Average Weekly Return**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg.Rp (%)	Rank	Avg.Rp (%)	Rank
1	Tata Young Citizens' Fund	Balance	16 0879	1	0.4840	7	0.2180	5
2	Tata Balanced Fund (D)	Balance	0.5574	2	1 1434	1	0.4601	3
9	Tata Balanced Fund (G)	Balance	0 3397	3	1 0121	4	0.5616	2
5	Escorts Balanced Fund (G)	Balance	0.0962	4	1.0168	3	0.4106	4
3	Kotak Balance	Balance	0 0514	5	0 8386	5	0 5930	1
4	Sundaram Balanced Fund (D)	Balance	0.0140	6	1 0313	2	-0.1189	7
6	J M Balanced Fund (G)	Balance	-0.0372	7	0.7848	6	0.2176	6
11	Taurus Libra Tax Shield	ELSS	0.1018	1	1 5714	1	1 5007	1
15	Escorts Tax Plan (D)	ELSS	0 0749	2	1 3435	4	0 3434	3
8	Tata Tax Saving Fund	ELSS	0.0439	3	1.5264	3	0 5683	2
7	Sundaram Tax Saver 97	ELSS	-0.0597	4	1 5528	2	0.3187	4
14	Sundaram Tax Saver (D)	ELSS	-0.0681	5	1 2559	5	-4 6275	5
12	Taurus Discovery Fund	Equity	4.7555	1	1.0319	16	1 0851	2
13	J M Basic Fund	Equity	1 6730	2	3.7440	1	0 2297	19
10	Tata Select Equity Fund (G)	Equity	0 6409	3	1 6774	7	0.6769	9
16	Tata Life Sci. & Tech. Fund (G)	Equity	0 6305	4	1 9577	2	0 8236	5
18	Reliance Vision Fund (G)	Equity	0 5814	5	1.6491	8	0.6060	12
20	Reliance Growth Fund (D)	Equity	0 5479	6	1.8140	5	0 6942	8
19	Escorts Income Plan (D)	Equity	0.3389	7	0.0940	21	-0.0582	20
17	Reliance Growth Fund (G)	Equity	0.2816	8	1.8303	4	0.8825	4
24	Sundaram Select Focus (D)	Equity	0.2488	9	1.4697	11	-0.1574	21
23	J M Equity Fund (G)	Equity	0.0429	10	1.3926	12	0.4463	17
26	Tata Pure Equity Fund (G)	Equity	0.0127	11	1.7754	6	0.6536	10
27	Sundaram Growth Fund (D)	Equity	0.0043	12	0 4287	20	0 4608	16
29	Kotak-30 (G)	Equity	-0.0044	13	1 4812	10	0.4797	15
25	Kotak Tech	Equity	-0.0604	14	0.6987	19	0 7338	6
22	Taurus Star Share	Equity	-0.0893	15	1.3774	13	1.1159	1
28	Kotak MNC	Equity	-0 2485	16	1.3626	14	0.7005	7
21	Benchmark Nifty BeES	Equity	-0 2524	17	1.1574	15	0.2540	18
31	Chola Opportunities Fund (QD)	Equity	-0 3320	18	0.7615	17	1 0222	3
30	Chola Opportunities Fund (G)	Equity	-0.3343	19	0.7157	18	0 5475	13
33	Benchmark Junior BeES	Equity	N/A	N/A	1 9153	3	0.4985	14
39	Reliance Banking Fund (D)	Equity	N/A	N/A	1.5812	9	0 6532	11
34	Tata Gilt Securities Fund (D)	Gilt	0.4233	1	0.2837	3	-0 1240	10
35	Tata Gilt Securities Fund (G)	Gilt	0.2769	2	0.5901	1	-0.0863	9
37	Escorts Gilt Fund (D)	Gilt	0.2314	3	0 1474	5	-0 0117	8
38	Chola Gilt Investment Plan (G)	Gilt	0.1953	4	0 2877	2	-0 0098	6
36	Escorts Gilt Fund (G)	Gilt	0.1825	5	0.1469	6	-0.0109	7
32	Kotak Gilt Saving Plan (G)	Gilt	0.1245	6	0.0840	9	0.0909	1
40	Sundaram Gilt Fund (G)	Gilt	0.1195	7	0.0850	8	0.0225	3
48	Sundaram Gilt Fund (D)	Gilt	0.1184	8	0.0549	10	0.0011	5
45	Taurus Libra Gilt	Gilt	0.0905	9	0.1716	4	0.0195	4



Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg.Rp (%)	Rank	Avg.Rp (%)	Rank
46	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.1251	7	0.0609	2
47	Escorts Income Bond (G)	Income	1.2019	1	0.2820	3	0.1818	3
43	J M Income Fund (G)	Income	0.2109	2	0.1749	6	0.0152	14
42	Kotak Bond Deposit Plan (G)	Income	0.2001	3	0.1677	7	0.0122	15
41	Sundaram Income Plus (D)	Income	0.1988	4	0.0279	15	0.0250	11
44	Kotak Bond Deposit Plan (D)	Income	0.1976	5	0.2658	4	0.0106	16
50	Chola Triple Ace (G)	Income	0.1972	6	0.1614	8	-0.0085	17
49	Sundaram Income Plus (G)	Income	0.1956	7	0.1249	11	0.0834	6
60	Reliance Income Fund (G)	Income	0.1905	8	0.1811	5	0.0446	10
58	Reliance Medium Term Fund (G)	Income	0.1826	9	0.1274	9	0.0206	13
56	Reliance Monthly Income Plan (G)	Income	0.1783	10	-0.4393	16	0.1004	5
51	Tata Income Fund (G)	Income	0.1460	11	0.3279	2	0.1495	4
53	Kotak Bond Short Term Plan (G)	Income	0.1417	12	0.1154	12	0.0831	7
52	Chola Freedom Income STF (G)	Income	0.1383	13	-0.7201	17	0.0680	8
54	Chola Freedom Income STF (HD)	income	0.1382	14	0.0299	14	0.0492	9
55	Escorts Growth Plan (G)	Income	0.1070	15	1.0986	1	0.5385	1
59	Kotak Bond Regular Plan (AD)	Income	0.0913	16	0.0580	13	0.0235	12
57	Taurus Libra Bond	Income	0.0727	17	0.1260	10	0.1940	2
61	Rel.Liq.Fund Treasury Plan (WD)	MM	0.1616	1	0.0315	4	0.0219	4
64	Kotak Liquid Regular (G)	MM	0.1227	2	0.0878	3	0.0814	3
63	Chola Liquid Fund (G)	MM	0.1201	3	0.0898	2	0.0887	2
62	Sundaram Money Fund (G)	MM	0.1197	4	0.0939	1	0.0902	1
65	Kotak Liquid Regular (D)	MM	0.0021	5	0.0007	5	0.0005	5
Over All Average Return			0.5116		0.7364		0.2249	

**Table: 5.4 Fund Class wise Frequency Distribution of schemes According to Weekly NAV based Positive and Negative Average Return**

Fund Class	2002-03		2003-04		2004-05		Overall +ve %
	Positive	Negative	Positive	Negative	Positive	Negative	
Balance	6	1	7	0	6	1	
%	85.71	14.29	100.00	0.00	85.71	14.29	90.48
ELSS	3	2	5	0	4	1	
%	60.00	40.00	100.00	0.00	80.00	20.00	80.00
Equity	12	7	21	0.0	19	2	
%	63.16	36.84	100.00	0.00	90.48	9.52	84.54
Gilt	9	0	10	0	5	5	
%	100.00	0.00	100.00	0.00	50.00	50.00	83.33
Income	17	0	15	2	16	1	
%	100.00	0.00	88.24	11.76	94.12	5.88	94.12
Money Market	5	0	5	0	5	0	
%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
Total	52	10	63	2	55	10	
%	83.87	16.13	96.92	3.08	84.62	15.38	88.47

Analysis of above table 5.3 and 5.4 according to schemes wise is as under:

## **2.1 BALANCE SCHEMES:**

Table no.5.3 and 5.4 reflects that there were total 7 schemes of Balance nature, out of which 6 (85.71%) schemes recorded positive returns and only 1 (14.29%) scheme has negative return. In the year 2004, all seven schemes have turned in to positive return. J M Balanced (G) return was -0.0372% in the year 2003, which started to earn positive returns from subsequent years. Among the balance schemes, Tata Yong Citizen's Fund return is 16.0879% which is the highest in the year 2003 followed by Tata Balanced Fund-D (0.5574%) and Tata balanced Fund-G (0.3397%). Tata mutual funds proved its superiority amongst the selected balance schemes in the year 2003.- J M Balanced (G) remained at the bottom in term of average weekly return. In the year 2004 all balance schemes have earned positive return. Tata Balanced Fund (D) stood first with 1.1434% return that was at second position in the year 2003. Sundaram Balanced Fund (D) jumped from 6<sup>th</sup> rank to 2<sup>nd</sup> rank. Escorts Balanced fund (G) came at 3<sup>rd</sup> rank by 1.0168 % return. The return of Sundaram Balanced Fund went down from positive return (1.0113%) to negative (-0.1189%) return. The average performance of three years seen 90.48 % in case of balance schemes that held third position among fund class wise classification.

## **2.2 ELSS SCHEMES:**

40 % of ELSS has registered their negative return and 60 % schemes rewarded positive return in the year 2003 which earned 100% positive returns in the year 2004. It indicates 40 % improvement in average weekly return. Sundaram Tax Saver (D) has shown poor performance in 2005. Its return fell down from 1.2559 % to -4.6275 % in 2005. Its overall average positive performance is 80 %, which is less by 9.01 % as compared to average performance of 9 private sectors mutual funds. It is interesting to present that Taurus Libra Tax Shield consistently held first rank throughout the study period. 60% schemes get success to achieved positive return consistently.

## **2.3 EQUITY SCHEMES:**

In equity-based data, 63.16 % schemes enjoyed positive returns in 2003, which touched to 100 % in the year 2004 and decreased by 9.52 % in the year 2005. Taurus Discovery schemes offered 4.7555% return and stood first among all

selected equity schemes, followed by JM Basic Fund and Tata Select Equity Fund (G) in 2003. There are too many ups and downs observed in the case of Taurus Discovery Fund. It fell from 1<sup>st</sup> rank to 16<sup>th</sup> in the year 2004 and once again climbed up to 2<sup>nd</sup> rank among the equity schemes in the year 2005. Whereas reverse return movement found in the case of Taurus Star Share scheme which was at 15<sup>th</sup> rank in the year 2003, occupied 1<sup>st</sup> position among all selected equity schemes of mutual fund in the year 2005. Overall average success percentage of selected equity schemes was observed at 84.54%.

#### **2.4 GILT SCHEMES:**

The performance trend of Gilt schemes remained consistently 100 % positive during the year 2003 and 2004, which turned up 50 % in the year 2005. The number of positive return schemes fell down to 5 out of 10 (50 %) in the year 2005. Among the Gilt schemes, the highest returns (0.4233%) were offered by Tata Gilt Securities Fund (D), Tata Gilt Securities Fund-G (0.5901%) and Kotak Gilt Saving Plan (G) 0.0909 % in the year 2003, 2004 and 2005 respectively. The average weekly return of 6 Gilt schemes' continuously declined year by year. The positive performance percentage according to three years average observed at 83.33 %.

#### **2.5 INCOME SCHEMES:**

All 17-income schemes performance is positive in the year 2003, returns remained between 0.0727% & 1.2019%. In the year 2004, number of such schemes decreased from 17 (100%) schemes to 15 (88.24%). Chola freedom Income STF (G) and Reliance Monthly Income Plan (G) declared their negative return. In the year 2005, only 1 scheme registered negative return.

#### **2.6 MONEY MARKET SCHEMES:**

As overall performance of income schemes found 94.12 % positive performance. Data of money market schemes indicate scheme of no risk or less risk compared to other schemes because all 5 schemes have continuously declared positive return from 2003 to 2005. But it is interesting to note that the rate of return has continuously declined in all money market schemes year on year.

### 3. RANK WISE ANALYSIS OF MUTUAL FUND:

Following table no.5.5 indicates the overall rank wise average weekly return and rank of selected schemes of Indian private sectors mutual funds from the year 2002-03 to 2004-05.

Tata Young Citizen's Fund secured 1<sup>st</sup> rank with 16.0879% average weekly return, followed by Taurus Discovery Fund (4.7555), JM Basic Fund (1.6730%), Escorts Income Bond-G (1.2014%) and Tata Select Equity Fund-G (0.6409%) in the year 2002-03. In the year 2004, JM Basic Fund secured at 1<sup>st</sup> rank by providing highest return (3.7440%) which is increased by more than twice as compared to the last year whereas same scheme declined to 28<sup>th</sup> rank with 0.2297 % return in the year 2005.

**Table: 5.5 Overall Ranking On The Bases Of Average Weekly Return  
Of Selected Scheme**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg.Rp (%)	Rank	Avg.Rp (%)	Rank
1	Tata Young Citizens' Fund	Balance	16.0879	1	0.4840	33	0.2180	29
2	Taurus Discovery Fund	Equity	4.7555	2	1.0319	23	1.0851	3
3	J M Basic Fund	Equity	1.6730	3	3.7440	1	0.2297	28
4	Escorts Income Bond (G)	Income	1.2019	4	0.2820	38	0.1818	32
5	Tata Select Equity Fund (G)	Equity	0.6409	5	1.6774	7	0.6769	10
6	Tata Life Sci. & Tech. Fund (G)	Equity	0.6305	6	1.9577	2	0.8236	6
7	Reliance Vision Fund (G)	Equity	0.5814	7	1.6491	8	0.6060	13
8	Tata Balanced Fund (D)	Balance	0.5574	8	1.1434	21	0.4601	22
9	Reliance Growth Fund (D)	Equity	0.5479	9	1.8140	5	0.6942	9
10	Tata Gilt Securities Fund (D)	Gilt	0.4233	10	0.2837	37	-0.1240	63
11	Tata Balanced Fund (G)	Balance	0.3397	11	1.0121	26	0.5616	16
12	Escorts Income Plan (D)	Equity	0.3389	12	0.0940	52	-0.0582	60
13	Reliance Growth Fund (G)	Equity	0.2816	13	1.8303	4	0.8825	5
14	Tata Gilt Securities Fund (G)	Gilt	0.2769	14	0.5901	32	-0.0863	61
15	Sundaram Select Focus (D)	Equity	0.2488	15	1.4697	14	-0.1574	64
16	Escorts Gilt Fund (D)	Gilt	0.2314	16	0.1474	45	-0.0117	59
17	J M Income Fund (G)	Income	0.2109	17	0.1749	41	0.0152	51
18	Kotak Bond Deposit Plan (G)	Income	0.2001	18	0.1677	43	0.0122	52
19	Sundaram Income Plus (D)	Income	0.1988	19	0.0279	62	0.0250	45
20	Kotak Bond Deposit Plan (D)	Income	0.1976	20	0.2658	39	0.0106	53
21	Chola Triple Ace (G)	Income	0.1972	21	0.1614	44	-0.0085	56
22	Sundaram Income Plus (G)	Income	0.1956	22	0.1249	50	0.0834	38
23	Chola Gilt Investment Plan (G)	Gilt	0.1953	23	0.2877	36	-0.0098	57
24	Reliance Income Fund (G)	Income	0.1905	24	0.1811	40	0.0446	44
25	Reliance Medium Term Fund (G)	Income	0.1826	25	0.1274	47	0.0206	49

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg.Rp (%)	Rank	Avg.Rp (%)	Rank
26	Escorts Gilt Fund (G)	Gilt	0.1825	26	0.1469	46	-0.0109	58
27	Reliance Monthly Income Plan (G)	Income	0.1783	27	-0.4393	64	0.1004	34
28	Reli.Liq.Fund Treasury Plan (WD)	MM	0.1616	28	0.0315	60	0.0219	48
29	Tata Income Fund (G)	Income	0.1460	29	0.3279	35	0.1495	33
30	Kotak Bond Short Term Plan (G)	Income	0.1417	30	0.1154	51	0.0831	39
31	Chola Freedom Income STF (G)	Income	0.1383	31	-0.7201	65	0.0680	41
32	Chola Freedom Income STF (HD)	Income	0.1382	32	0.0299	61	0.0492	43
33	Kotak Gilt Saving Plan (G)	Gilt	0.1245	33	0.0840	57	0.0909	35
34	Kotak Liquid Regular (G)	MM	0.1227	34	0.0878	55	0.0814	40
35	Chola Liquid Fund (G)	MM	0.1201	35	0.0898	54	0.0887	37
36	Sundaram Money Fund (G)	MM	0.1197	36	0.0939	53	0.0902	36
37	Sundaram Gilt Fund (G)	Gilt	0.1195	37	0.0850	56	0.0225	47
38	Sundaram Gilt Fund (D)	Gilt	0.1184	38	0.0549	59	0.0011	54
39	Escorts Growth Plan (G)	Income	0.1070	39	1.0986	22	0.5385	18
40	Taurus Libra Tax Shield	ELSS	0.1018	40	1.5714	10	1.5007	1
41	Escorts Balanced Fund (G)	Balance	0.0962	41	1.0168	25	0.4106	24
42	Kotak Bond Regular Plan (AD)	Income	0.0913	42	0.0580	58	0.0235	46
43	Taurus Libra Gilt	Gilt	0.0905	43	0.1716	42	0.0195	50
44	Escorts Tax Plan (D)	ELSS	0.0749	44	1.3435	18	0.3434	25
45	Taurus Libra Bond	Income	0.0727	45	0.1260	48	0.1940	31
46	Kotak Balance	Balance	0.0514	46	0.8386	27	0.5930	14
47	Tata Tax Saving Fund	ELSS	0.0439	47	1.5264	12	0.5683	15
48	J M Equity Fund (G)	Equity	0.0429	48	1.3926	15	0.4463	23
49	Sundaram Balanced Fund (D)	Balance	0.0140	49	1.0313	24	-0.1189	62
50	Tata Pure Equity Fund (G)	Equity	0.0127	50	1.7754	6	0.6536	11
51	Sundaram Growth Fund (D)	Equity	0.0043	51	0.4287	34	0.4608	21
52	Kotak Liquid Regular (D)	MM	0.0021	52	0.0007	63	0.0005	55
53	Kotak-30 (G)	Equity	-0.0044	53	1.4812	13	0.4797	20
54	J M Balanced Fund (G)	Balance	-0.0372	54	0.7848	28	0.2176	30
55	Sundaram Tax Saver 97	ELSS	-0.0597	55	1.5528	11	0.3187	26
56	Kotak Tech	Equity	-0.0604	56	0.6987	31	0.7338	7
57	Sundaram Tax Saver (D)	ELSS	-0.0681	57	1.2559	19	-4.6275	65
58	Taurus Star Share	Equity	-0.0893	58	1.3774	16	1.1159	2
59	Kotak MNC	Equity	-0.2485	59	1.3626	17	0.7005	8
60	Benchmark Nifty BeES	Equity	-0.2524	60	1.1574	20	0.2540	27
61	Chola Opportunities Fund (QD)	Equity	-0.3320	61	0.7615	29	1.0222	4
62	Chola Opportunities Fund (G)	Equity	-0.3343	62	0.7157	30	0.5475	17
63	Reliance Banking Fund (D)	Equity	N/A	N/A	1.5812	9	0.6532	12
64	Benchmark Junior BeES	Equity	N/A	N/A	1.9153	3	0.4985	19
65	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.1251	49	0.0609	42
	Over All Average Return		0.5116		0.7364		0.2249	

Sundaram Tax Saver (D) stood at 19<sup>th</sup> rank in 2004 from 57<sup>th</sup> rank with positive return. Its return increased from -0.0068 % to 0.1256 % in the year 2004. Once again it touched the bottom rank in the year 2005. Ranks on the basis of return, Taurus Libra Bond (G) continuously turned up from 37<sup>th</sup> to 1<sup>st</sup> rank in the year 2005. Taurus Star Share provides 1.1159 % which is second highest, followed by Taurus Discovery Fund, Chola Opportunities Fund (G) and Reliance Growth Fund (G) in the year 2005.

Lowest performance schemes in the year 2003 were Chola Opportunity Fund (G), Chola Opportunity (QD), Benchmark Nifty BeES, Kotak MNC, Taurus Star Share etc. All these schemes have earned positive return in the year 2004 and 2005. It depicts that there were no schemes having continuously negative returns throughout the study period.

52 out of 62 schemes have earned positive return and 10 schemes earned negative return in the year 2003. In the year 2004, number of positive return schemes reached up to 63 and negative return fell down from 10 to 2 schemes and increased up 10 in 2005. Among top five schemes were the equity or equity related schemes. This trend may be an indicator of the trend of equity market of India.

Taking overall periods, all top performance schemes except Sundaram Tax Saver (D) and Taurus Star Share have recorded continuously positive return. It is important to interpret that out of 65 schemes, 44 schemes (67.70%) get success to provide consistently positive return to their unit holder during the year from 2003 to 2005. There were certain schemes having too many ups and downs in the rank like Tata Young Citizen's Fund declined from 1<sup>st</sup> rank to 29<sup>th</sup> rank, JM Basic fund from 3<sup>rd</sup> rank to 28<sup>th</sup> rank, Tata Gilt Securities Fund (D) from 10<sup>th</sup> rank to 61<sup>st</sup> rank and so on. All these schemes were top loser compared to the year 2003. Some schemes were top gainer in the year 2005 compared to 2003. They were Taurus Star Share which ascend up from 58<sup>th</sup> rank to 2<sup>nd</sup> rank, Chola Opportunities Fund (QD) from 61<sup>st</sup> rank to 4<sup>th</sup> rank, Kotak Technology from 56<sup>th</sup> rank to 7<sup>th</sup> rank, Kotak MNC from 59<sup>th</sup> rank to 8<sup>th</sup> , Taurus Libra Tax Shield from 40<sup>th</sup> to 1<sup>st</sup> rank etc.

The summary of weekly average return analysis is presented in the following tables 5.6A, 5.6B and 5.6C.

**Table: 5.6A Average Return Of Selected Schemes of year 2002-003**

Average Weekly Return (Rp%)	No. of Schemes	Percentage
$\leq -0.23$	4	6.45
$>-0.23 \leq 0.10$	18	29.03
$> 0.10 \leq 0.51$	31	50.00
$> 0.51$	9	14.52
Total	62	100.00

$R_p = 0.51$  ,  $R_m = -0.23$ ,  $R_f = 0.1$  per cent

**Table: 5.6B Average Return Of Selected Schemes of year 2003-004**

Average Weekly Return (Rp%)	No. of Schemes	Percentage
$\leq 0.0$	2	3.08
$> 0.0 \leq 0.1$	12	18.46
$> 0.1 \leq 1.17$	32	49.23
$> 1.17$	19	29.23
Total	65	100.00

$R_p = 0.74$  ,  $R_m = 1.17$ ,  $R_f = 0.1$  per cent

**Table: 5.6C Average Return Of Selected Schemes of year 2004-005**

Average Weekly Return (Rp%)	No. of Schemes	Percentage
$< 0.0$	10	15.38
$\geq 0.0 \leq 0.1$	21	32.31
$> 0.1 \leq 0.27$	8	12.31
$> 0.27$	26	40.00
Total	65	100.00

$R_p = 0.22$ ,  $R_m = 0.27$ ,  $R_f = 0.10$  per cent

Where:

$R_p$  denotes average weekly return of portfolio.

$R_m$  denotes average market return as per BSE Sensex.

$R_f$  denotes risk free rate of public sectors bank.

Table 5.6A, 5.6B and 5.6C disclosed that in the year 2003, 9 (14.52%) schemes have superior performance as compared to average weekly return of selected schemes. 85.49 % (53) schemes earned lower than average returned of selected schemes. 40 schemes have proved its ability to cover risk free return. In the year 2004, 19 out of 65 schemes have outperformed and earned higher than market return as well as risk free return. 78.46 % (51) schemes have declared superior return than average weekly risk free return. Whereas 21.54 (14) schemes have poor performance as compared to average weekly risk free return. Only 26 schemes outperformed in 2005. 44 schemes earned more than the average weekly return and 39 schemes failed to touch the average weekly market return.

## **[B] ANALYSIS OF YEARLY NAV BASED RETURN:**

NAV of selected schemes as on 31 March of a year considered as yearly NAV for the analysis purpose. Yearly NAV based return analysis also carried out like average weekly return analysis.

### **1. MUTUAL FUND COMPANY WISE ANALYSIS:**

Table 5.7 and 5.8 indicate company wise performance and frequency distribution. The data indicates that both schemes of Benchmark Mutual funds earned 166.6936 % and 79.6773% yearly returns in the year 2004 but in the year 2005 it decreased to 24.4183 % and 11.6060 % respectively. 66.67 % schemes have earned positive return according to overall three years' average period. Its overall performance stood at the lowest among 9 private sectors mutual funds. In the year 2003, out of 7 schemes of Cholamandalam 5 has recorded positive yearly returns and 2 have earned negative returns. The number of negative schemes remained same but schemes were different in 2005. It indicates that negative schemes no longer remain negative. Chola Liquid Fund (G) and Chola Freedom Income Plan (G) have provided continuous positive returns through the study period. As per overall positive performance, it stood at 7<sup>th</sup> rank among 9 mutual funds. Chola Opportunities Fund (QD) has earned highest return (45.01990%) among 7 schemes of Cholamandalam Mutual Fund.

About Escorts mutual fund's schemes, negative return scheme were zero in the year 2003 and 2004. This increased to 4 (57.14 %) in the year 2005. Escorts Income Bond (G) has declared highest return among 7 schemes of the same company. It has earned 79.8361 % yearly return in the year 2003. But then yearly NAV based return decreased and touched 9.4241 % level in 2005. Among the 9 mutual funds, it obtained 4<sup>th</sup> rank according to overall positive performance. Out of 4 schemes of J M mutual fund, 3 schemes have enjoyed positive return and only 1 scheme has negative return in the year 2003. Not a single scheme has remained negative in 2004 and 2005. 3 schemes have got success to provide positive yearly return under the reference years, constantly. With 91.67 % of overall positive it secured 2<sup>nd</sup> rank among 9 mutual funds. In the case of Kotak Mahindra mutual fund, Kotak Bond Deposit Plan (G) stood at 1<sup>st</sup> rank with 11.0902 % yearly return in the year 2003. Then return continuously declined and



came down at 9<sup>th</sup> rank in the year 2005. All the three lowest return schemes (Negative) have improved their result and turn out with positive returns in subsequent years. Kotak 30 (G) and Kotak MNC jumped from -1.3203 % to 114.2857 % and -12.9614 % to 100.7048 % yearly return respectively in the year 2003 & 2004. The highest improvement was seen in case of Kotak Tech from -5.6090% to 44.6367 % in 2005. When compared all 9 mutual funds with reference to overall positive performance, Kotak Mahindra Mutual Fund secured 3<sup>rd</sup> position. All schemes of Reliance mutual fund have been recorded positive return in the year 2003 & 2005. Reliance Monthly Income Plan (G) scheme has earned negative returns in the year 2004. Almost all schemes constantly remain in the positive returns categories since 2003 to 2005. Another observation is that no more change in the rank over the year by year. Among the selected mutual funds, Reliance has proved their superiority as per overall positive performance. High fluctuation is seen in term of return as well as rank in case of Sundaram mutual fund during reference year. Sundaram Select Focus (D) at 1<sup>st</sup> rank with 8.6259 % which touched the bottom level i.e. 10<sup>th</sup> rank with -13.2332 % in the financial year 2005, Sundaram Tax Saver (D), Sundaram Tax Saver 97 and Sundaram Growth Fund (D) were top gainers schemes in 2005 as compared to 2003. Their performance went up from 10<sup>th</sup> 9<sup>th</sup> & 8<sup>th</sup> rank to 1<sup>st</sup>, 3<sup>rd</sup> & 2<sup>nd</sup> rank in 2005. 2 schemes turned out into negative from positive and 3 schemes turned out into positive from negative in the year 2005. 40 % of the total selected schemes of Sundaram Mutual fund got success to earn continuous positive return during the study period. Overall positive performance of Sundaram Mutual Fund remained 80 %.

The data of Tata mutual fund reveals that in 2003, 50 % schemes recorded their positive return and 50 % schemes have reported negative performance. The result was very different in 2004; all 10 schemes declared their positive returns. Tata Balanced Fund- D (27.1944 %), Tata pure Equity Fund-G (122.1223%) and Tata Life Science & Tech. Fund-G (48.7131%) stood at 1<sup>st</sup> rank in 2003, 2004 and 2005. Tata Pure Equity Fund (G) has achieved very good result during 2005 which had the lowest (Negative) return in 2003. When we consider overall positive performance, it stood at 6<sup>th</sup> position. Taurus Mutual Fund yearly return remained in the range of -11.9773 to 112.0559 % from the year 2003 to 2005. Taurus Star Share and Taurus Discovery Fund were negative return schemes

in 2003 but they came up with good return in 2004 and 2005, whereas Taurus Libra Gilt performance in terms of yearly return fell from 4.8614 % in 2003 to -0.4487 % in 2005. Top loser schemes became top gainer and top gainer turned in to top loser in 2003 and 2005. Overall average return of 65 selected schemes observed 6.3952 % in 2003, 48.2729 % in 2004 and 16.4101 % in 2005.

**Table: 5.7 Company Wise- Yearly NAV Based Returns Of Selected Schemes And Ranking Of Indian Private Sector's Mutual Fund**

Sr. No.	Name of the Scheme	Fund Class	2002-03		2003-04		2004-05	
			Avg. Rp(%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
1	Benchmark Junior BeES	Equity	N/A	N/A	166.9736	1	24.4183	1
2	Benchmark Nifty BeES	Equity	-13.6885	1	79.6773	2	11.6060	2
3	Chola Triple Ace (G)	Income	10.8724	1	8.8747	4	-0.4626	6
9	Chola Gilt Investment Plan (G)	Gilt	10.6702	2	16.3752	3	-0.5622	7
4	Chola Freedom Income STF (G)	Income	7.5977	3	-40.8229	7	3.5796	4
5	Chola Freedom Income STF (HD)	income	7.4546	4	1.4414	6	2.5857	5
6	Chola Liquid Fund (G)	MM	6.5667	5	4.8749	5	4.7159	3
7	Chola Opportunities Fund (QD)	Equity	-17.8218	6	45.0199	1	30.6560	2
8	Chola Opportunities Fund (G)	Equity	-17.9058	7	41.5929	2	30.7491	1
10	Escorts Income Bond (G)	Income	79.8361	1	14.4024	4	9.4241	3
11	Escorts Income Plan (D)	Equity	18.7930	2	5.0053	7	-3.0018	6
12	Escorts Gilt Fund (G)	Gilt	10.0399	3	8.0157	6	-0.6450	5
13	Escorts Gilt Fund (D)	Gilt	6.9314	4	8.0439	5	-0.6180	4
14	Escorts Growth Plan (G)	Income	4.5234	5	73.3971	1	29.2166	1
15	Escorts Balanced Fund (G)	Balance	4.2398	6	68.1476	2	21.7353	2
16	Escorts Tax Plan (D)	ELSS	2.6349	7	15.6418	3	-9.5423	7
17	J M Basic Fund	Equity	72.7419	1	304.5816	1	8.4141	3
18	J M Income Fund (G)	Income	11.6782	2	9.6594	4	0.7750	4
19	J M Equity Fund (G)	Equity	1.2676	3	104.0055	2	22.5977	1
20	J M Balanced Fund (G)	Balance	-2.4090	4	50.2905	3	10.8808	2
21	Kotak Bond Deposit Plan (G)	Income	11.0902	1	9.2485	6	0.6078	9
22	Kotak Bond Deposit Plan (D)	Income	10.6708	2	14.5359	5	0.5170	10
23	Kotak Bond Short Term Plan (G)	Income	7.0317	3	6.3042	7	4.4125	6
24	Kotak Gilt Saving Plan (G)	Gilt	6.8084	4	4.5508	9	4.8354	5
25	Kotak Liquid Regular (G)	MM	6.7129	5	4.7589	8	4.3196	7
26	Kotak Bond Regular Plan (AD)	Income	4.6534	6	2.8772	10	1.2047	8
27	Kotak Balance	Balance	2.3107	7	54.1303	3	33.8446	3
28	Kotak Liquid Regular (D)	MM	0.1089	8	0.0379	11	0.0240	11
29	Kotak-30 (G)	Equity	-1.3203	9	114.2857	1	24.7844	4
30	Kotak Tech	Equity	-5.6090	10	36.4011	4	44.6367	1
31	Kotak MNC	Equity	-12.9614	11	100.7048	2	41.5210	2

Sr. No.	Name of the Scheme	Fund Class	2002-03		2003-04		2004-05	
			Avg. Rp(%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
32	Reliance Vision Fund (G)	Equity	32.6326	1	129.4909	3	34.1690	4
33	Reliance Growth Fund (D)	Equity	15.0514	2	133.1370	2	39.9023	2
34	Reliance Growth Fund (G)	Equity	13.3467	3	152.0388	1	54.7197	1
35	Reliance Income Fund (G)	Income	10.4775	4	10.0266	5	2.3222	7
36	Reliance Medium Term Fund (G)	Income	10.0956	5	6.8182	6	1.0733	9
37	Reliance Monthly Income Plan (G)	Income	9.6862	6	-23.7379	9	5.2992	5
38	Reli.Liq.Fund Treasury Plan (WD)	MM	8.6687	7	1.6377	8	1.1397	8
39	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	4.7496	7	3.1262	6
40	Reliance Banking Fund (D)	Equity	N/A	N/A	90.4402	4	37.9433	3
41	Sundaram Select Focus (D)	Equity	8.6259	1	86.0396	3	-13.2332	10
42	Sundaram Income Plus (D)	Income	7.1614	2	1.4331	10	-0.0182	8
43	Sundaram Income Plus (G)	Income	7.0388	3	6.8332	6	3.1362	5
44	Sundaram Money Fund (G)	MM	6.5434	4	5.1004	7	4.8004	4
45	Sundaram Gilt Fund (G)	Gilt	6.5055	5	4.5853	8	1.1628	6
46	Sundaram Gilt Fund (D)	Gilt	6.2956	6	2.8737	9	0.0403	7
47	Sundaram Balanced Fund (D)	Balance	0.2962	7	62.2098	4	-10.9009	9
48	Sundaram Growth Fund (D)	Equity	-3.3466	8	8.1825	5	25.1117	2
49	Sundaram Tax Saver 97	ELSS	-4.2062	9	119.9873	1	15.9131	3
50	Sundaram Tax Saver (D)	ELSS	-4.6275	10	89.8435	2	60.7288	1
51	Tata Balanced Fund (D)	Balance	27.1944	1	73.5962	4	18.1502	6
52	Tata Gilt Securities Fund (D)	Gilt	22.8184	2	15.2211	10	-6.3331	10
53	Tata Balanced Fund (G)	Balance	15.9993	3	64.2586	6	27.9237	4
54	Tata Gilt Securities Fund (G)	Gilt	15.1927	4	31.3506	7	-4.5232	9
55	Tata Income Fund (G)	Income	7.9195	5	18.0830	9	0.3325	8
56	Tata Young Citizens' Fund	Balance	-1.0546	6	24.3306	8	11.2678	7
57	Tata Tax Saving Fund	ELSS	-10.1110	7	112.3267	2	31.5683	5
58	Tata Life Sci. & Tech. Fund (G)	Equity	-11.7465	8	67.9628	5	48.7131	1
59	Tata Select Equity Fund (G)	Equity	-11.9659	9	91.0113	3	38.0828	2
60	Tata Pure Equity Fund (G)	Equity	-13.8338	10	122.1223	1	36.2538	3
61	Taurus Libra Gilt	Gilt	4.8614	1	9.4256	4	-0.4487	5
62	Taurus Libra Bond	Income	3.5065	2	6.8801	5	10.2378	4
63	Taurus Libra Tax Shield	ELSS	2.8727	3	112.0559	1	96.3416	1
64	Taurus Star Share	Equity	-6.9368	4	99.0859	2	69.9099	2
65	Taurus Discovery Fund	Equity	-11.9773	5	65.3061	3	65.5113	3
	Over All Average Return		6.3952		48.2729		16.4101	

**Table: 5.8 Company Wise Frequency Distribution Of Selected Schemes  
According To Positive And Negative Yearly Return**

Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
	Positive	Negative	Positive	Negative	Positive	Negative	
Benchmark MF	0	1	2	0	2	0	
%	0.00	100.00	100.00	0.00	100.00	0.00	66.67
Cholamandalam MF	5	2	6	1	5	2	
%	71.43	28.57	85.71	14.29	71.43	28.57	76.19
Escorts MF	7	0	7	0	3	4	
%	100.00	0.00	100.00	0.00	42.86	57.14	80.95
J M MF	3	1	4	0	4	0	
%	75.00	25.00	100.00	0.00	100.00	0.00	91.67
Kotak MF	8	3	11	0	11	0	
%	72.73	27.27	100.00	0.00	100.00	0.00	90.91
Reliance MF	7	0	8	1	9	0	
%	100.00	0.00	88.89	11.11	100.00	0.00	96.30
Sundaram MF	7	3	10	0	7	3	
%	70.00	30.00	100.00	0.00	70.00	30.00	80.00
Tata MF	5	5	10	0	8	2	
%	50.00	50.00	100.00	0.00	80.00	20.00	76.67
Taurus MF	3	2	5	0	4	1	
%	60.00	40.00	100.00	0.00	80.00	20.00	80.00
Total	45	17	63	2	53	12	
%	72.58	27.42	96.92	3.08	81.54	18.46	83.68

## 2. FUND-CLASS WISE ANALYSIS:

Following table no.5.9 indicates the fund class wise average yearly return and rank. While table 5.10 indicates, the fund class wise frequency distribution of selected schemes according to NAV based positive and negative yearly average return of Indian private sectors mutual funds from the year 2002-03 to 2004-05.

### i) BALANCE SCHEMES:

Among the categories of balanced schemes, 2 schemes have declared negative return in the year 2003 which turned into zero in 2004 and 1 in 2005. The Tata Balanced fund (D) has earned the highest return among three years period. It earned 73.5962 % in the year 2004. First two years it remained at 1<sup>st</sup> rank. The overall positive performance of balance schemes observed at 85.71%.

**Table: 5.9 Fund-Class Wise NAV Based Yearly Return and Ranking Of  
Selected Schemes**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
1	Tata Balanced Fund (D)	Balance	27.1944	1	73.5962	1	18.1502	4
2	Tata Balanced Fund (G)	Balance	15.9993	2	64.2586	3	27.9237	2
3	Escorts Balanced Fund (G)	Balance	4.2398	3	68.1476	2	21.7353	3
4	Kotak Balance	Balance	2.3107	4	54.1303	5	33.8446	1
5	Sundaram Balanced Fund (D)	Balance	0.2962	5	62.2098	4	-10.9009	7
6	Tata Young Citizens' Fund	Balance	-1.0546	6	24.3306	7	11.2678	5
7	J M Balanced Fund (G)	Balance	-2.4090	7	50.2905	6	10.8808	6
8	Taurus Libra Tax Shield	ELSS	2.8727	1	112.0559	3	96.3416	1
9	Escorts Tax Plan (D)	ELSS	2.6349	2	15.6418	5	-9.5423	5
10	Sundaram Tax Saver 97	ELSS	-4.2062	3	119.9873	1	15.9131	4
11	Sundaram Tax Saver (D)	ELSS	-4.6275	4	89.8435	4	60.7288	2
12	Tata Tax Saving Fund	ELSS	-10.1110	5	112.3267	2	31.5683	3
13	J M Basic Fund	Equity	72.7419	1	304.5816	1	8.4141	19
14	Reliance Vision Fund (G)	Equity	32.6326	2	129.4909	5	34.1690	11
15	Escorts Income Plan (D)	Equity	18.7930	3	5.0053	21	-3.0018	20
16	Reliance Growth Fund (D)	Equity	15.0514	4	133.1370	4	39.9023	7
17	Reliance Growth Fund (G)	Equity	13.3467	5	152.0388	3	54.7197	3
18	Sundaram Select Focus (D)	Equity	8.6259	6	86.0396	13	-13.2332	21
19	J M Equity Fund (G)	Equity	1.2676	7	104.0055	8	22.5977	17
20	Kotak-30 (G)	Equity	-1.3203	8	114.2857	7	24.7844	15
21	Sundaram Growth Fund (D)	Equity	-3.3466	9	8.1825	20	25.1117	14
22	Kotak Tech	Equity	-5.6090	10	36.4011	19	44.6367	5
23	Taurus Star Share	Equity	-6.9368	11	99.0859	10	69.9099	1
24	Tata Life Sci & Tech. Fund (G)	Equity	-11.7465	12	67.9628	15	48.7131	4
25	Tata Select Equity Fund (G)	Equity	-11.9659	13	91.0113	11	38.0828	8
26	Taurus Discovery Fund	Equity	-11.9773	14	65.3061	16	65.5113	2
27	Kotak MNC	Equity	-12.9614	15	100.7048	9	41.5210	6
28	Benchmark Nifty BeEs	Equity	-13.6885	16	79.6773	14	11.6060	18
29	Tata Pure Equity Fund (G)	Equity	-13.8338	17	122.1223	6	36.2538	10
30	Chola Opportunities Fund (QD)	Equity	-17.8218	18	45.0199	17	30.6560	13
31	Chola Opportunities Fund (G)	Equity	-17.9058	19	41.5929	18	30.7491	12
32	Benchmark Junior BeES	Equity	N/A	N/A	166.9736	2	24.4183	16
33	Reliance Banking Fund (D)	Equity	N/A	N/A	90.4402	12	37.9433	9
34	Tata Gilt Securities Fund (D)	Gilt	22.8184	1	15.2211	3	-6.3331	10
35	Tata Gilt Securities Fund (G)	Gilt	15.1927	2	31.3506	1	-4.5232	9
36	Chola Gilt Investment Plan (G)	Gilt	10.6702	3	16.3752	2	-0.5622	6
37	Escorts Gilt Fund (G)	Gilt	10.0399	4	8.0157	6	-0.6450	8
38	Escorts Gilt Fund (D)	Gilt	6.9314	5	8.0439	5	-0.6180	7
39	Kotak Gilt Saving Plan (G)	Gilt	6.8084	6	4.5508	9	4.8354	1
40	Sundaram Gilt Fund (G)	Gilt	6.5055	7	4.5853	8	1.1628	3
41	Sundaram Gilt Fund (D)	Gilt	6.2956	8	2.8737	10	0.0403	4
42	Taurus Libra Gilt	Gilt	4.8614	9	9.4256	4	-0.4487	5

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
43	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	4.7496	7	3.1262	2
44	Escorts Income Bond (G)	Income	79.8361	1	14.4024	4	9.4241	3
45	J M Income Fund (G)	Income	11.6782	2	9.6594	6	0.7750	12
46	Kotak Bond Deposit Plan (G)	Income	11.0902	3	9.2485	7	0.6078	13
47	Chola Triple Ace (G)	Income	10.8724	4	8.8747	8	-0.4626	17
48	Kotak Bond Deposit Plan (D)	Income	10.6708	5	14.5359	3	0.5170	14
49	Reliance Income Fund (G)	Income	10.4775	6	10.0266	5	2.3222	9
50	Reliance Medium Term Fund (G)	Income	10.0956	7	6.8182	11	1.0733	11
51	Reliance Monthly Income Plan (G)	Income	9.6862	8	-23.7379	16	5.2992	4
52	Tata Income Fund (G)	Income	7.9195	9	18.0830	2	0.3325	15
53	Chola Freedom Income STF (G)	Income	7.5977	10	-40.8229	17	3.5796	6
54	Chola Freedom Income STF (HD)	income	7.4546	11	1.4414	14	2.5857	8
55	Sundaram Income Plus (D)	Income	7.1614	12	1.4331	15	-0.0182	16
56	Sundaram Income Plus (G)	Income	7.0388	13	6.8332	10	3.1362	7
57	Kotak Bond Short Term Plan (G)	Income	7.0317	14	6.3042	12	4.4125	5
58	Kotak Bond Regular Plan (AD)	Income	4.6534	15	2.8772	13	1.2047	10
59	Escorts Growth Plan (G)	Income	4.5234	16	73.3971	1	29.2166	1
60	Taurus Libra Bond	Income	3.5065	17	6.8801	9	10.2378	2
61	Reli Liq.Fund Treasury Plan (WD)	MM	8.6687	1	1.6377	4	1.1397	4
62	Kotak Liquid Regular (G)	MM	6.7129	2	4.7589	3	4.3196	3
63	Chola Liquid Fund (G)	MM	6.5667	3	4.8749	2	4.7159	2
64	Sundaram Money Fund (G)	MM	6.5434	4	5.1004	1	4.8004	1
65	Kotak Liquid Regular (D)	MM	0.1089	5	0.0379	5	0.0240	5
	Over All Average Return		6.2937		48.2729		16.4101	

**Table: 5.10 Fund Class Wise Frequency Distribution of Selected Schemes  
According To NAV Based Positive And Negative Yearly Average Return**

Fund Class	2002-03		2003-04		2004-05		Overall +ve %
	Positive	Negative	Positive	Negative	Positive	Negative	
Balance	5	2	7	0	6	1	
%	71.43	28.57	100.00	0.00	85.71	14.29	85.71
ELSS	2	3	5	0	4	1	
%	40.00	60.00	100.00	0.00	80.00	20.00	73.33
Equity	7	12	21	0.0	19	2	
%	36.84	63.16	100.00	0.00	90.48	9.52	75.77
Gilt	9	0	10	0	4	6	
%	100.00	0.00	100.00	0.00	40.00	60.00	80.00
Income	17	0	15	2	15	2	
%	100.00	0.00	88.24	11.76	88.24	11.76	92.16
Money Market	5	0	5	0	5	0	
%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
Total	45	17	63	2	53	12	
%	72.58	27.42	96.92	3.08	81.54	18.46	83.68

## **ii) ELSS SCHEMES:**

Among the ELSS schemes, 40 %, 100% and 80 % schemes have earned positive return in 2003, 2004 and 2005 respectively. Taurus Libra Tax Shield earned constantly positive return under the reference years. The average performance of three years were seen at 73.33%. Categories wise it stood at 6<sup>th</sup> rang according to three years average performance.

## **iii) EQUITY SCHEMES:**

Out of 21 equity schemes, performance of 12 schemes (63.16%) were found negative and these numbers fell to zero and 2 in 2004 and 2005. J M Basic fund earned the highest returned among the equity schemes of three years periods. Only 5 schemes provided continuous positive return to their holder under the reference years. Overall positive performance is noted at 75.77% which is very less compared to other categories schemes.

## **IV) GILT SCHEMES:**

Incase of Gilt schemes, Tata Gilt Securities Fund (D), Tata Gilt Securities Fund (G) Kotak Gilt Saving Plan (G) were rewarded the highest return in the year 2003, 2004 and 2005 respectively. To cite a case, drastic changes were seen in Tata Gilt Securities Fund (D), its rank dropped in term of yearly return from 1<sup>st</sup> rank to 10<sup>th</sup> rank. In 2003 and 2004 not a single schemes out 10 schemes have bearing loss and in 2005, 60 % schemes bearing negative return.

## **v) INCOME SCHEMES:**

When data of income schemes was observed, during reference period Escorts Income Bond (G) earned 79.8361 % returned which is highest among all 17 selected schemes. There were 100% positive return in 2003 and this percentage fell down to 88.24 % in 2004. Among the selected mutual funds, income scheme occupied second rank with 92.16 % of overall positive performance.

## **vi) MONEY MARKET SCHEMES:**

All 5 money market schemes provided constantly positive return throughout the study period. In terms of overall positive performance, money market schemes held first rank.

### 3. OVERALL RANK WISE ANALYSIS:

Following table no.5.11 indicates the overall rank wise average weekly return and rank of selected schemes of Indian private sectors mutual funds from the year 2002-03 to 2004-05.

An overview of yearly returns based on NAVs of the selected schemes shown in table no 5.11, indicates that majority of schemes generated positive return in 2003, 2004 and 2005. In the year 2003, 17 out of 62 schemes have been registered their negative yearly return. There is change in the year 2004 and 2005. During the year 2004, 2 out of 65 (3.08%) declared their negative return. The numbers of negative schemes declined due the improvement in result of equity schemes. All the equity schemes enjoyed positive returns during the year 2004.

**Table: 5.11 Overall Ranking Of Selected Schemes According To Yearly NAV Based Return**

No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
1	J M Basic Fund	Equity	72.7419	2	304.5816	1	8 4141	32
2	Benchmark Junior BeES	Equity		N/A	166 9736	2	24 4183	22
3	Reliance Growth Fund (G)	Equity	13.3467	10	152 0388	3	54.7197	5
4	Reliance Growth Fund (D)	Equity	15.0514	9	133 1370	4	39.9023	9
5	Reliance Vision Fund (G)	Equity	32.6326	3	129.4909	5	34.1690	13
6	Tata Pure Equity Fund (G)	Equity	-13.8338	60	122 1223	6	36.2538	12
7	Sundaram Tax Saver 97	ELSS	-4 2062	50	119 9873	7	15.9131	26
8	Kotak-30 (G)	Equity	-1 3203	47	114 2857	8	24 7844	21
9	Tata Tax Saving Fund	ELSS	-10.1110	54	112.3267	9	31 5683	15
10	Taurus Libra Tax Shield	ELSS	2.8727	40	112.0559	10	96 3416	1
11	J M Equity Fund (G)	Equity	1.2676	43	104.0055	11	22 5977	23
12	Kotak MNC	Equity	-12.9614	58	100.7048	12	41.5210	8
13	Taurus Star Share	Equity	-6 9368	53	99.0859	13	69.9099	2
14	Tata Select Equity Fund (G)	Equity	-11.9659	56	91.0113	14	38 0828	10
15	Reliance Banking Fund (D)	Equity		N/A	90.4402	15	37 9433	11
16	Sundaram Tax Saver (D)	ELSS	-4.6275	51	89.8435	16	60.7288	4
17	Sundaram Select Focus (D)	Equity	8.6259	21	86.0396	17	-13.2332	65
18	Benchmark Nifty BeES	Equity	-13.6885	59	79 6773	18	11 6060	27
19	Tata Balanced Fund (D)	Balance	27.1944	4	73.5962	19	18.1502	25
20	Escorts Growth Plan (G)	Income	4.5234	37	73 3971	20	29.2166	18
21	Escorts Balanced Fund (G)	Balance	4.2398	38	68.1476	21	21 7353	24
22	Tata Life Sci & Tech. Fund (G)	Equity	-11.7465	55	67.9628	22	48.7131	6
23	Taurus Discovery Fund	Equity	-11.9773	57	65 3061	23	65.5113	3
24	Tata Balanced Fund (G)	Balance	15.9993	7	64.2586	24	27.9237	19
25	Sundaram Balanced Fund (D)	Balance	0.2962	44	62.2098	25	-10.9009	64
26	Kotak Balance	Balance	2.3107	42	54 1303	26	33 8446	14
27	J M Balanced Fund (G)	Balance	-2 4090	48	50 2905	27	10.8808	29



No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			Avg.Rp (%)	Rank	Avg. Rp(%)	Rank	Avg. Rp(%)	Rank
28	Chola Opportunities Fund (QD)	Equity	-17.8218	61	45.0199	28	30.6560	17
29	Chola Opportunities Fund (G)	Equity	-17.9058	62	41.5929	29	30.7491	16
30	Kotak Tech	Equity	-5.6090	52	36.4011	30	44 6367	7
31	Tata Gilt Securities Fund (G)	Gilt	15.1927	8	31.3506	31	-4.5232	61
32	Tata Young Citizens' Fund	Balance	-1 0546	46	24.3306	32	11.2678	28
33	Tata Income Fund (G)	Income	7.9195	22	18 0830	33	0 3325	51
34	Chola Gilt Investment Plan (G)	Gilt	10.6702	15	16 3752	34	-0.5622	57
35	Escorts Tax Plan (D)	ELSS	2.6349	41	15.6418	35	-9.5423	63
36	Tata Gilt Securities Fund (D)	Gilt	22 8184	5	15.2211	36	-6.3331	62
37	Kotak Bond Deposit Plan (D)	Income	10.6708	14	14.5359	37	0.5170	50
38	Escorts Income Bond (G)	Income	79.8361	1	14 4024	38	9.4241	31
39	Reliance Income Fund (G)	Income	10.4775	16	10 0266	39	2.3222	43
40	J M Income Fund (G)	Income	11.6782	11	9.6594	40	0.7750	48
41	Taurus Libra Gilt	Gilt	4.8614	35	9 4256	41	-0.4487	55
42	Kotak Bond Deposit Plan (G)	Income	11.0902	12	9.2485	42	0.6078	49
43	Chola Triple Ace (G)	Income	10.8724	13	8 8747	43	-0.4626	56
44	Sundaram Growth Fund (D)	Equity	-3.3466	49	8 1825	44	25 1117	20
45	Escorts Gilt Fund (D)	Gilt	6.9314	28	8.0439	45	-0 6180	58
46	Escorts Gilt Fund (G)	Gilt	10 0399	18	8 0157	46	-0 6450	59
47	Taurus Libra Bond	Income	3.5065	39	6.8801	47	10.2378	30
48	Sundaram Income Plus (G)	Income	7.0388	26	6.8332	48	3 1362	40
49	Reliance Medium Term Fund (G)	Income	10.0956	17	6.8182	49	1 0733	47
50	Kotak Bond Short Term Plan (G)	Income	7.0317	27	6.3042	50	4.4125	37
51	Sundaram Money Fund (G)	MM	6.5434	32	5.1004	51	4.8004	35
52	Escorts Income Plan (D)	Equity	18.7930	6	5.0053	52	-3.0018	60
53	Chola Liquid Fund (G)	MM	6.5667	31	4.8749	53	4 7159	36
54	Kotak Liquid Regular (G)	MM	6.7129	30	4.7589	54	4 3196	38
55	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	4.7496	55	3 1262	41
56	Sundaram Gilt Fund (G)	Gilt	6.5055	33	4.5853	56	1 1628	45
57	Kotak Gilt Saving Plan (G)	Gilt	6.8084	29	4.5508	57	4.8354	34
58	Kotak Bond Regular Plan (AD)	Income	4.6534	36	2.8772	58	1 2047	44
59	Sundaram Gilt Fund (D)	Gilt	6.2956	34	2.8737	59	0.0403	52
60	Reli.Liq.Fund Treasury Plan (WD)	MM	8.6687	20	1.6377	60	1.1397	46
61	Chola Freedom Income STF (HD)	income	7.4546	24	1.4414	61	2.5857	42
62	Sundaram Income Plus (D)	Income	7.1614	25	1.4331	62	-0.0182	54
63	Kotak Liquid Regular (D)	MM	0 1089	45	0.0379	63	0.0240	53
64	Reliance Monthly Income Plan (G)	Income	9 6862	19	-23.7379	64	5.2992	33
65	Chola Freedom Income STF (G)	Income	7.5977	23	-40.8229	65	3.5796	39
	Over All Average Return		6.2937		48 2729		16.4101	

Top performer in term of yearly NAV based return in 2003 was Escorts Income Fund- G (79.8361), J M Basic Fund (304.5816%) in 2004 and Taurus Libra Tax Shield (96.3416%) in 2005. Having registered a extreme down turn change in Escorts Income Bond (G) from 1<sup>st</sup> rank to 31<sup>st</sup> rank, Tata Gilt

Securities Fund (D) from 5<sup>th</sup> rank to 62<sup>nd</sup> rank, and improvement in case of Taurus Star Share from 53<sup>rd</sup> rank to 2<sup>nd</sup> rank, Taurus Discovery Fund from 57<sup>th</sup> rank to 3<sup>rd</sup> rank Sundaram Tax Saver (D) from 51<sup>st</sup> to 4<sup>th</sup> position from 2003 to 2005. Further, all negative returns schemes of the year 2003 turned in to positive returns in 2004 and 2005. From this analysis, we conclude that mutual fund industry has come up to the investors expectations.

**Table: 5.12 Year-Wise Frequency Distribution Of Schemes On The Basis Of Yearly Return**

Yearly Return	2002-03	3003-04	3004-05
≥20	5	32	24
%	8.06	49.23	36.92
<20 ≥10	13	7	6
%	20.97	10.77	9.23
<10 ≥1	25	23	17
%	40.32	35.38	26.15
<1 ≥0	2	1	6
%	3.23	1.54	9.23
<0	17	2	12
%	27.42	3.08	18.46
Total	62	65	65
%	100	100	100

Table no.5.12 depicts that 5, 32 and 24 schemes earned more than 20 % return during the year 2003, 2004 to 2005 respectively. The returns of 13, 7 and 6 schemes were from 10 % to 20 %, out of 65 schemes in the year 2003, 2004 and 2005 respectively. The annual average yearly returns were 6.3952 %, 48.2729% and 16.5113 % in 2003, 2004 and 2005 respectively. 33 out 62 schemes provided return more than average annual returns of selected schemes and 17 out of 62 schemes failed to provide positive returns in 2003. The data shows that yearly return of selected schemes improved in 2004. Maximum schemes fell under the return range from 1 % to 10 % in 2003 through the study period while the same is in range of above 20 % in 2004 and 2005.

#### 5.4 RISK ANALYSIS:

Generally, returns are considered as a basis of measurement of performance by the investors. Risk taken by the fund manager is also considered as the basis for performance measure of schemes. Mutual fund industry has basic objective to provide optimum return by a diversified portfolio which reduces the

risk in investments at a lower cost. The investors invest in mutual fund's units with the belief that with minimum risk and they will get optimum returns.

Risk is an important consideration in holding of any portfolio. It is generally associated with the possibility that, realized returns will be less than the returns expected. Level of risk depends on the fluctuation of returns generated by a fund. Higher the fluctuation in returns higher the risk associated with it and less fluctuation in returns of schemes have less risk. The fluctuation is the result of two guiding forces, first general market fluctuation which affect all the securities of the market. It is known as market risk or unsystematic risk like management capacity, consumers preference etc. This kind of risk can be reduced up to certain level by systematic and proper diversifying portfolio. It is measured in term of standard deviation of returns.

“The smaller the deviations, the smaller the spread in the distribution and consequently, the lower the risk of investment.”<sup>2</sup> The second force is fluctuation due to economic, political, sociological and other macro-level changes in the world. It affects the entire market as a whole and it cannot be abolished or eliminated only by diversifying the portfolio holding. Such type of risk is called a systematic risk. Systematic risk can be measured in term of Beta. Beta indicates the degree of portfolio affected by the systematic risk as compared to the effect on market as a whole.

To analyze the weekly return of Indian private sectors mutual fund's selected schemes; risk has been measured in terms of standard deviation (SD) which is the absolute measure of variability. It measures the dispersion of portfolio return from the average of such return and is expressed as:

$$\sigma_p = \frac{\sqrt{\sum (R_p - \bar{R}_p)^2}}{n - 1}$$

$\sigma_p$  is standard deviation of return on portfolio.

$R_p$  is the weekly return of portfolio,

$\bar{R}_p$  is the average weekly return of portfolio,

The above-mentioned measure is treated as measure of total investment risk. The value of sigma indicates the total risk associated with the portfolio of selected mutual fund schemes. High value of  $\sigma_p$  means higher risk

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2. Siegel, Joel G., Shim, Jack and Hartman, "Business Finance, 201 Decision Making Tools for Managers." McGraw Hill Inc, New York, 1992.

involved and lower value of  $\sigma_p$  implies low risk in investing in mutual fund. The measure of investment risk is collected from the average weekly returns of the selected schemes during the reference years. Risk is analysed discussed company wise, Fund-Class wise and overall rank wise as under:

## 1. MUTUAL FUND COMPANY WISE ANALYSIS OF RISK:

Table 5.13 indicate the risk associated with all 65 schemes and rank based on risk level, year by year for the period from 2003 to 2005 company wise. The table reveals an average amount of risk is observed 0.0515 in 2003, 0.0284 in 2004 and 0.0349 in 2005. Benchmark Nifty BeES having the lowest risk during all three year and held 1<sup>st</sup> rank. The risk level of this scheme remained from 0.0225 to 0.0305 during the study periods.

The data of Cholamandalam mutual fund prevails that the Chola liquid fund (G) possesses the lowest risk during the year 2003 to 2005. Its risk bearing is very less compared to an average risk of each year. Chola Opportunities fund (QD) bearing highest risk between the year 2003 and 2005. Whereas the Chola Freedom Income STF (G) is more risky in the year 2004. Out of 7 schemes of Escorts mutual fund, Escorts Income Plan (D) has lowest risk in the year 2003 and 2004 Further the table shows that there were no drastic ups and downs in the risk level and rank. All schemes risk moves either up or down by hardly one rank except Escorts Income Bond (G).

**Table: 5.13 Company Wise Standard Deviation Of NAV Based Weekly Return Of Selected Schemes**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			6p	Rank	6p	Rank	6p	Rank
1	Benchmark Junior BeES	Equity	N/A	N/A	0.0305	1	0.0388	1
2	Benchmark Nifty BeES	Equity	0.0225	1	0.0305	2	0.0290	2
3	Chola Liquid Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
4	Chola Freedom Income STF (HD)	income	0.0010	2	0.0052	4	0.0015	2
5	Chola Freedom Income STF (G)	Income	0.0010	2	0.0612	6	0.0028	3
6	Chola Triple Ace (G)	Income	0.0068	3	0.0041	2	0.0028	3
7	Chola Gilt - Investment Plan (G)	Gilt	0.0089	4	0.0049	3	0.0045	4
8	Chola Opportunities Fund (G)	Equity	0.0274	5	0.0341	5	0.0245	5
9	Chola Opportunities Fund (QD)	Equity	0.0276	6	0.0341	5	0.0664	6
10	Escorts Income Plan (D)	Equity	0.0038	1	0.0029	1	0.0027	2
11	Escorts Gilt Fund (G)	Gilt	0.0061	2	0.0052	3	0.0056	3
12	Escorts Gilt Fund (D)	Gilt	0.0077	3	0.0051	2	0.0022	1
13	Escorts Balanced Fund (G)	Balance	0.0190	4	0.0254	5	0.0252	5
14	Escorts Growth Plan (G)	Income	0.0219	5	0.0266	6	0.0297	6
15	Escorts Tax Plan (D)	ELSS	0.0230	6	0.0871	7	0.0314	7

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			6p	Rank	6p	Rank	6p	Rank
16	Escorts Income Bond (G)	Income	0.0461	7	0.0235	4	0.0132	4
17	J M Income Fund (G)	Income	0.0069	1	0.0040	1	0.0027	1
18	J M Balanced Fund (G)	Balance	0.0134	2	0.0164	2	0.0193	2
19	J M Equity Fund (G)	Equity	0.0197	3	0.0280	3	0.0326	3
20	J M Basic Fund	Equity	0.1213	4	0.1298	4	0.0400	4
21	Kotak Liquid Regular (D)	MM	0.0002	1	0.0001	1	0.0003	2
22	Kotak Liquid Regular (G)	MM	0.0002	1	0.0001	1	0.0001	1
23	Kotak Bond Short Term Plan (G)	Income	0.0009	2	0.0007	3	0.0006	3
24	Kotak Gilt Saving Plan (G)	Gilt	0.0015	4	0.0005	2	0.0009	4
25	Kotak Bond Deposit Plan (G)	Income	0.0055	5	0.0036	4	0.0032	5
26	Kotak Bond Deposit Plan (D)	Income	0.0055	5	0.0107	6	0.0032	5
27	Kotak Bond Regular Plan (AD)	Income	0.0104	6	0.0094	5	0.0032	5
28	Kotak Balance	Balance	0.0130	7	0.0202	7	0.0226	7
29	Kotak MNC	Equity	0.0164	8	0.0286	9	0.0508	9
30	Kotak30 (G)	Equity	0.0205	9	0.0259	8	0.0326	8
31	Kotak Tech	Equity	0.0313	10	0.0466	10	0.0210	6
32	Reliance Monthly Income Plan (G)	Income	0.0026	1	0.0408	8	0.0047	4
33	Reli Liq Fund Treasury Plan (WD)	MM	0.0041	2	0.0006	1	0.0006	1
34	Reliance Medium Term Fund (G)	Income	0.0045	3	0.0033	2	0.0015	2
35	Reliance Income Fund (G)	Income	0.0069	4	0.0038	3	0.0030	3
36	Reliance Growth Fund (G)	Equity	0.0271	5	0.0274	5	0.0283	7
37	Reliance Vision Fund (G)	Equity	0.0276	6	0.0282	6	0.0279	6
38	Reliance Growth Fund (D)	Equity	0.0801	7	0.0535	9	0.0384	9
39	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0077	4	0.0059	5
40	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0302	7	0.0357	8
41	Sundaram Money Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
42	Sundaram Gilt Fund (G)	Gilt	0.0033	2	0.0026	3	0.0024	2
43	Sundaram Income Plus (G)	Income	0.0047	3	0.0017	2	0.0222	4
44	Sundaram Income Plus (D)	Income	0.0071	4	0.0041	4	0.0229	5
45	Sundaram Gilt Fund (D)	Gilt	0.0098	5	0.0048	5	0.0027	3
46	Sundaram Balanced Fund (D)	Balance	0.0131	6	0.0539	7	0.0419	8
47	Sundaram Select Focus (D)	Equity	0.0197	7	0.0595	8	0.0559	9
48	Sundaram Tax Saver (D)	ELSS	0.0208	8	0.0664	9	0.0894	10
49	Sundaram Tax Saver 97	ELSS	0.0208	8	0.0333	6	0.0262	6
50	Sundaram Growth Fund (D)	Equity	0.0427	9	0.0714	10	0.0394	7
51	Tata Income Fund (G)	Income	0.0066	1	0.0129	2	0.0545	10
52	Tata Gilt Securities Fund (G)	Gilt	0.0141	2	0.0371	6	0.0054	2
53	Tata Gilt Securities Fund (D)	Gilt	0.0172	3	0.0089	1	0.0053	1
54	Tata Balanced Fund (G)	Balance	0.0359	4	0.0329	4	0.0426	9
55	Tata Balanced Fund (D)	Balance	0.0489	5	0.0307	3	0.0536	8
56	Tata Tax Saving Fund	ELSS	0.0723	6	0.0373	7	0.0281	4
57	Tata Pure Equity Fund (G)	Equity	0.0789	7	0.0684	8	0.0308	5
58	Tata Select Equity Fund (G)	Equity	0.1381	9	0.0987	9	0.0331	6
59	Tata Life Sci. & Tech. Fund (G)	Equity	0.1393	8	0.1514	10	0.0350	7
60	Tata Young Citizens' Fund	Balance	1.2926	10	0.0347	5	0.0159	3
61	Taurus Libra Gilt	Gilt	0.0042	1	0.0055	2	0.0240	2
62	Taurus Libra Bond	Income	0.0125	2	0.0028	1	0.0116	1
63	Taurus Star Share	Equity	0.0307	3	0.0379	3	0.0437	3
64	Taurus Libra Tax Shield	ELSS	0.0315	4	0.0464	5	0.0681	5
65	Taurus Discovery Fund	Equity	0.4841	5	0.0402	4	0.0477	4
	Avg. Risk		0.0515		0.0284		0.0349	

The risk profile data of J M mutual fund's schemes shows the rank of all the 4 schemes remained steady year by year. J M Income Fund-G (0.0069) has a lowest risk and J M Basic Fund is highest risk bearing schemes among all 4 schemes of such company under the reference years. It is significant to note that risk level of all schemes of J M mutual fund is continuously increased year on year. About Kotak mutual fund's schemes, the table reveals some amount of consistency in 6 schemes out of 11 schemes. Kotak liquid regular (G) has least risk throughout the study period. In the year 2003 and 2004, Kotak Tech. showed highest standard deviation and Kotak MNC in 2005. Range of all selected schemes of Kotak mutual fund observed changes in return between 0.0001- 0.0508. A glance of Reliance mutual fund's schemes shows that out of 9 schemes, 5 schemes have maintained consistency of risk-rank for any two years. There were drastic changes in the risk level of Reliance Monthly Income Plan (G). The standard deviation of return increased from 0.0026 in 2003 to 0.0408 in 2004. The bottom level of standard deviation of return of Reliance mutual fund's schemes is 0.0006 and top level is 0.0801 during the period from 2003 to 2005. Sundaram money fund (G) at first rank in respect of risk associated from 2003 to 2005. Its risk is very low i.e. from 0.0001 to 0.0002 extremely less as compared to an average risk. No much fluctuation seen in term of risk rank of Sundaram mutual fund's schemes.

In the case of Tata mutual fund's schemes, reverse observations are depicts as compared to Sundaram mutual fund's schemes. High fluctuation has observed in all most all schemes. Tata Income fund-(G) has lowest risk bearing schemes in the year 2003 but it turned into high-risk schemes in the year 2005. The risk level increased from 0.0066 to 0.0545 for the period of three years. Tata Young Citizen's Fund's risk decreased from 1.2925 to 0.0159. Its risk-rank also improved from 10<sup>th</sup> to 3<sup>rd</sup> rank. When we analyze the Taurus mutual fund's selected schemes, Taurus Discovery Fund proved that it is high risk bearing schemes in the year 2003 and second highest risk bearing for remaining two years. A table further reveals that no large level changes among all 5 selected schemes. Taurus Libra Gilt schemes having 0.0042 standard deviation in the year 2003 and Taurus Libra Bond having 0.0028 & 0.0116 standard deviation level during the year 2004 & 2005 which are the lowest in the concerned years. It is significant to

note that risk level of all 4 schemes of J M mutual fund increased continuously year by year.

## 2. FUND-CLASS WISE ANALYSIS OF RISK:

Fund-Class wise analysis of all 65 schemes of Indian private mutual fund is presented in table 5.14.

**Table: 5.14 Fund-Class Wise Standard Deviation According To NAV Based Weekly Return**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			σp	Rank	σp	Rank	σp	Rank
1	Kotak Balance	Balance	0.0130	1	0.0202	2	0.0226	3
2	Sundaram Balanced Fund (D)	Balance	0.0131	2	0.0539	7	0.0419	5
3	J M Balanced Fund (G)	Balance	0.0134	3	0.0164	1	0.0193	2
4	Escorts Balanced Fund (G)	Balance	0.0190	4	0.0254	3	0.0252	4
5	Tata Balanced Fund (G)	Balance	0.0359	5	0.0329	5	0.0426	6
6	Tata Balanced Fund (D)	Balance	0.0489	6	0.0307	4	0.0536	7
7	Tata Young Citizens' Fund	Balance	1.2926	7	0.0347	6	0.0159	1
8	Sundaram Tax Saver (D)	ELSS	0.0208	1	0.0664	4	0.8984	5
9	Sundaram Tax Saver 97	ELSS	0.0208	1	0.0333	1	0.0262	1
10	Escorts Tax Plan (D)	ELSS	0.0230	2	0.0871	5	0.0314	3
11	Taurus Libra Tax Shield	ELSS	0.0315	3	0.0464	3	0.0681	4
12	Tata Tax Saving Fund	ELSS	0.0723	4	0.0373	2	0.0281	2
13	Escorts Income Plan (D)	Equity	0.0038	1	0.0029	1	0.0027	1
14	Kotak MNC	Equity	0.0164	2	0.0286	6	0.0508	18
15	Sundaram Select Focus (D)	Equity	0.0197	3	0.0595	14	0.0559	19
16	J M Equity Fund (G)	Equity	0.0197	3	0.0280	4	0.0326	8
17	Kotak30 (G)	Equity	0.0205	4	0.0259	2	0.0326	8
18	Benchmark Nifty BeES	Equity	0.0225	5	0.0305	8	0.0290	6
19	Reliance Growth Fund (G)	Equity	0.0271	6	0.0274	3	0.0283	5
20	Chola Opportunities Fund (G)	Equity	0.0274	7	0.0341	9	0.0245	3
21	Chola Opportunities Fund(QD)	Equity	0.0276	8	0.0341	9	0.0664	20
22	Reliance Vision Fund (G)	Equity	0.0276	8	0.0282	5	0.0279	4
23	Taurus Star Share	Equity	0.0307	9	0.0379	10	0.0437	16
24	Kotak Tech	Equity	0.0313	10	0.0466	12	0.0210	2
25	Sundaram Growth Fund (D)	Equity	0.0427	11	0.0714	16	0.0394	14
26	Tata Pure Equity Fund (G)	Equity	0.0789	12	0.0684	15	0.0308	7
27	Reliance Growth Fund (D)	Equity	0.0801	13	0.0535	13	0.0384	12
28	J M Basic Fund	Equity	0.1213	14	0.1298	18	0.0400	15
29	Tata Select Equity Fund (G)	Equity	0.1381	15	0.0987	17	0.0331	9
30	Tata Life Sci. & Tech. Fund (G)	Equity	0.1393	16	0.1514	19	0.0350	10
31	Taurus Discovery Fund	Equity	0.4841	17	0.0402	11	0.0477	17
32	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0302	7	0.0357	11
33	Benchmark Junior BeES	Equity	N/A	N/A	0.0305	8	0.0388	13
34	Kotak Gilt Saving Plan (G)	Gilt	0.0015	1	0.0005	1	0.0009	1
35	Sundaram Gilt Fund (G)	Gilt	0.0033	2	0.0026	2	0.0024	3
36	Taurus Libra Gilt	Gilt	0.0042	3	0.0055	7	0.0240	10

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			6p	Rank	6p	Rank	6p	Rank
37	Escorts Gilt Fund (G)	Gilt	0.0061	4	0.0052	6	0.0056	8
38	Escorts Gilt Fund (D)	Gilt	0.0077	5	0.0051	5	0.0022	2
39	Chola Gilt - Investment Plan (G)	Gilt	0.0089	6	0.0049	4	0.0045	5
40	Sundaram Gilt Fund (D)	Gilt	0.0098	7	0.0048	3	0.0027	4
41	Tata Gilt Securities Fund (G)	Gilt	0.0141	8	0.0371	10	0.0054	7
42	Tata Gilt Securities Fund (D)	Gilt	0.0172	9	0.0089	9	0.0053	6
43	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0077	8	0.0059	9
44	Kotak Bond Short Term Plan (G)	Income	0.0009	1	0.0007	1	0.0006	1
45	Chola Freedom Income STF(HD)	income	0.0010	2	0.0052	9	0.0015	2
46	Chola Freedom Income STF (G)	Income	0.0010	2	0.0612	16	0.0028	4
47	Reliance Monthly Income Plan (G)	Income	0.0026	3	0.0408	15	0.0047	7
48	Reliance Medium Term Fund (G)	Income	0.0045	4	0.0033	4	0.0015	2
49	Sundaram Income Plus (G)	Income	0.0047	5	0.0017	2	0.0222	10
50	Kotak Bond Deposit Plan (G)	Income	0.0055	6	0.0036	5	0.0032	6
51	Kotak Bond Deposit Plan (D)	Income	0.0055	6	0.0107	11	0.0032	6
52	Tata Income Fund (G)	Income	0.0066	7	0.0129	12	0.0545	13
53	Chola Triple Ace (G)	Income	0.0068	8	0.0041	8	0.0028	4
54	Reliance Income Fund (G)	Income	0.0069	9	0.0038	6	0.0030	5
55	J M Income Fund (G)	Income	0.0069	9	0.0040	7	0.0027	3
56	Sundaram Income Plus (D)	Income	0.0071	10	0.0041	8	0.0229	11
57	Kotak Bond Regular Plan (AD)	Income	0.0104	11	0.0094	10	0.0032	6
58	Taurus Libra Bond	Income	0.0125	12	0.0028	3	0.0116	8
59	Escorts Growth Plan (G)	Income	0.0219	13	0.0266	14	0.0297	12
60	Escorts Income Bond (G)	Income	0.0461	14	0.0235	13	0.0132	9
61	Kotak Liquid Regular (G)	MM	0.0002	1	0.0001	1	0.0001	1
62	Sundaram Money Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
63	Chola Liquid Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
64	Kotak Liquid Regular (D)	MM	0.0002	1	0.0001	1	0.0003	2
65	Reli Liq.Fund Treasury Plan (WD)	MM	0.0041	2	0.0006	2	0.0006	3
	Avg. Risk		0.0515		0.0284		0.0349	

N/A = Not applicable

#### i) BALANCED SCHEMES:

Risk analysis of balanced fund, the table indicates that in the year 2003, 2004 and 2005, Kotak Balance, JM Balanced Fund (G) and Tata Young Citizen's Fund were the lowest risk bearing schemes respectively. The Tata Young Citizen's Fund has highest risk bearer in the year 2003, Sundaram Balanced Fund (D) in the year 2004, and Tata Balanced Fund in 2005. Tata Young Citizen's Fund has changed their portfolio and reduced their risk in the year 2005. Risk range of balanced fund from the year 2003 to 2005 was 0.0130 to 1.2926. Risk levels of all schemes have increased year by year. Tata Young Citizen's



Fund, shows reverse movement. It turns out at 1<sup>st</sup> rank (1.2926) from 7<sup>th</sup> rank (1.2926) during a reference period.

**ii) ELSS SCHEMES:**

ELSS categories, Sundaram Tax Saver (D) and Sundaram Tax Saver 97 both stood at 1<sup>st</sup> rank with lowest risks in 2003. Sundaram Tax Saver -97 has stood at 1<sup>st</sup> rank continuously during three years. Highest risk bearing schemes among the ELSS were Tata Tax Saving Fund, Escorts Tax Plan- (D) and Sundaram Tax Saver (D) in the year 2003, 2004 and 2005. From the data, we can say that the lowest risk bearer scheme and the highest risk bearer schemes does not remain same. Drastic changes were seen in case of Sundaram Tax Saver (D) and Tata Tax Saving Fund.

**iii) EQUITY SCHEMES:**

In the categories of equity schemes, there were huge fluctuations in the risk bearing. Escorts Income Plan-D (0.0038) was at 1<sup>st</sup> rank with the lowest risk bearing schemes throughout the study period. Risk level of Kotak Tech declined from 0.0313 (10<sup>th</sup> rank) in 2003 to 0.0210 (2<sup>nd</sup> rank) in the 2005. Taurus Discovery Fund, Tata Life Science & Technology Fund and Chola Opportunities Fund (QD) were the schemes possessing the highest risk in the reference years. Only 1 equity oriented scheme is found constant in the risk–rank through out the study periods.

**iv) GILT SCHEMES:**

About the Gilt schemes, Kotak Gilt Saving Plan (G) has maintained 1<sup>st</sup> rank in all three years. Its risk measured observed between 0.0005 to 0.0015 which is quit low as compared to an average risk. Tata Gilt Security Fund (D), Tata Gilt Security Fund (G) and Taurus Libra Gilt's data indicate that they were high risk bearing schemes. Risk range of Gilt schemes during the study period observed from 0.0005 to 0.0371.

**v) INCOME SCHEMES:**

The data of 17 selected income schemes of reflects that Kotak Bond Short Term Plan (G) scheme has less risk among all income schemes during reference years. Some amount of consistency regarding rank observed in case of Chola Freedom Income STG (HD), Reliance Medium Term Fund (G) Chola Triple Ace (G) and Kotak Bond Deposit Plan (G). The highest changes came in

Chola Freedom Incomes STF (G). Its risk increased from 0.0010 in 2003 to 0.0612 in 2004.

#### vi) MONEY MARKET SCHEMES:

The highest consistency observed among money market schemes during the study period. All schemes risk levels observed very less compared to an average risk. The table further reveals that risk level of all most all schemes remain very close to each other in three years except Reliance Liquid Fund Treasury Plan (WD).

### 3. OVERALL RANK WISE ANALYSIS:

Table 5.15 depicts standard deviation of weekly returns and their rank of various schemes overall ranking without any categories for the study period 2003 to 2005. From the data it can be observed that during the year 2003, the top five schemes in terms of the lowest risk includes Chola Liquid Fund-(G), Kotak Liquid Regular(D), Kotak Liquid Regular (G), Sundaram Money Fund(G) and Kotak Bond Short Term Plan (G). Up to 5<sup>th</sup> rank there were 9 schemes with the lowest risk. Among the lowest risk schemes, there were 4 schemes of money market, 4 of income and 1 of gilt scheme in 2003. Here, more or less, the same result are observed in the year 2004 & 2005. Top Five highest risk bearing schemes includes Tata Young Citizen's Fund (0.2926), Taurus Discovery Fund (0.4841), Tata Life Science & Technology Fund-G (0.1393), Tata Select Equity Fund-G (0.1381) and J M Basic Fund (0.1213) in 2003.

**Table: 5.15 Overall Ranking Of Selected Schemes According To Standard Deviation Of NAV Based Weekly Return**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			$\sigma_p$	Rank	$\sigma_p$	Rank	$\sigma_p$	Rank
1	Chola Liquid Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
2	Kotak Liquid Regular (D)	MM	0.0002	1	0.0001	1	0.0003	2
3	Kotak Liquid Regular (G)	MM	0.0002	1	0.0001	1	0.0001	1
4	Sundaram Money Fund (G)	MM	0.0002	1	0.0001	1	0.0001	1
5	Kotak Bond Short Term Plan (G)	Income	0.0009	2	0.0007	4	0.0006	3
6	Chola Freedom Income STF (HD)	income	0.0010	3	0.0052	17	0.0015	5
7	Chola Freedom Income STF (G)	Income	0.0010	3	0.0612	51	0.0028	9
8	Kotak Gilt Saving Plan (G)	Gilt	0.0015	4	0.0005	2	0.0009	4
9	Reliance Monthly Income Plan (G)	Income	0.0026	5	0.0408	45	0.0047	13
10	Sundaram Gilt Fund (G)	Gilt	0.0033	6	0.0026	6	0.0024	7
11	Escorts Income Plan (D)	Equity	0.0038	7	0.0029	8	0.0027	8
12	Reli.Liq.Fund Treasury Plan (WD)	mm	0.0041	8	0.0006	3	0.0006	3
13	Taurus Libra Gilt	Gilt	0.0042	9	0.0055	18	0.0240	26
14	Reliance Medium Term Fund (G)	Income	0.0045	10	0.0033	9	0.0015	5
15	Sundaram Income Plus (G)	Income	0.0047	11	0.0017	5	0.0222	23

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			$\sigma_p$	Rank	$\sigma_p$	Rank	$\sigma_p$	Rank
16	Kotak Bond Deposit Plan (G)	Income	0.0055	12	0.0036	10	0.0032	11
17	Kotak Bond Deposit Plan (D)	Income	0.0055	12	0.0107	22	0.0032	11
18	Escorts Gilt Fund (G)	Gilt	0.0061	13	0.0052	17	0.0056	16
19	Tata Income Fund (G)	Income	0.0066	14	0.0129	23	0.0545	51
20	Chola Triple Ace (G)	Income	0.0068	15	0.0041	13	0.0028	9
21	Reliance Income Fund (G)	Income	0.0069	16	0.0038	11	0.0030	10
22	J M Income Fund (G)	Income	0.0069	16	0.0040	12	0.0027	8
23	Sundaram Income Plus (D)	Income	0.0071	17	0.0041	13	0.0229	25
24	Escorts Gilt Fund (D)	Gilt	0.0077	18	0.0051	16	0.0022	6
25	Chola Gilt - Investment Plan (G)	Gilt	0.0089	19	0.0049	15	0.0045	12
26	Sundaram Gilt Fund (D)	Gilt	0.0098	20	0.0048	14	0.0027	8
27	Kotak Bond Regular Plan (AD)	Income	0.0104	21	0.0094	21	0.0032	11
28	Taurus Libra Bond	Income	0.0125	22	0.0028	7	0.0116	18
29	Kotak Balance	Balance	0.0130	23	0.0202	25	0.0226	24
30	Sundaram Balanced Fund (D)	Balance	0.0131	24	0.0539	49	0.0419	45
31	J M Balanced Fund (G)	Balance	0.0134	25	0.0164	24	0.0193	21
32	Tata Gilt Securities Fund (G)	Gilt	0.0141	26	0.0371	41	0.0054	15
33	Kotak MNC	Equity	0.0164	27	0.0286	33	0.0508	49
34	Tata Gilt Securities Fund (D)	Gilt	0.0172	28	0.0089	20	0.0053	14
35	Escorts Balanced Fund (G)	Balance	0.0190	29	0.0254	27	0.0252	28
36	Sundaram Select Focus (D)	Equity	0.0197	30	0.0595	50	0.0559	52
37	J M Equity Fund (G)	Equity	0.0197	30	0.0280	31	0.0326	37
38	Kotak30 (G)	Equity	0.0205	31	0.0259	28	0.0326	37
39	Sundaram Tax Saver (D)	ELSS	0.0208	32	0.0664	52	0.8984	55
40	Sundaram Tax Saver 97	ELSS	0.0208	32	0.0333	38	0.0262	29
41	Escorts Growth Plan (G)	Income	0.0219	33	0.0266	29	0.0297	34
42	Benchmark Nifty BeES	Equity	0.0225	34	0.0305	35	0.0290	33
43	Escorts Tax Plan (D)	ELSS	0.0230	35	0.0871	54	0.0314	36
44	Reliance Growth Fund (G)	Equity	0.0271	36	0.0274	30	0.0283	32
45	Chola Opportunities Fund (G)	Equity	0.0274	37	0.0341	39	0.0245	27
46	Chola Opportunities Fund (QD)	Equity	0.0276	38	0.0341	39	0.0664	53
47	Reliance Vision Fund (G)	Equity	0.0276	38	0.0282	32	0.0279	30
48	Taurus Star Share	Equity	0.0307	39	0.0379	43	0.0437	47
49	Kotak Tech	Equity	0.0313	40	0.0466	47	0.0210	22
50	Taurus Libra Tax Shield	ELSS	0.0315	41	0.0464	46	0.0681	54
51	Tata Balanced Fund (G)	Balance	0.0359	42	0.0329	37	0.0426	46
52	Sundaram Growth Fund (D)	Equity	0.0427	43	0.0714	53	0.0394	43
53	Escorts Income Bond (G)	Income	0.0461	44	0.0235	26	0.0132	19
54	Tata Balanced Fund (D)	Balance	0.0489	45	0.0307	36	0.0536	50
55	Tata Tax Saving Fund	ELSS	0.0723	46	0.0373	42	0.0281	31
56	Tata Pure Equity Fund (G)	Equity	0.0789	47	0.0684	52	0.0308	35
57	Reliance Growth Fund (D)	Equity	0.0801	48	0.0535	48	0.0384	41
58	J M Basic Fund	Equity	0.1213	49	0.1298	56	0.0400	44
59	Tata Select Equity Fund (G)	Equity	0.1381	50	0.0987	55	0.0331	38
60	Tata Life Sci. & Tech. Fund (G)	Equity	0.1393	51	0.1514	57	0.0350	39
61	Taurus Discovery Fund	Equity	0.4841	52	0.0402	44	0.0477	48
62	Tata Young Citizens' Fund	Balance	1.2926	53	0.0347	40	0.0159	20
63	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0077	19	0.0059	17
64	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0302	34	0.0357	40
65	Benchmark Junior BeES	Equity	N/A	N/A	0.0305	35	0.0388	42
	Average Risk		0.0515		0.0284		0.0349	

During the period 2003 to 2005, in few schemes significant changes occurred in term of risk-rank like Tata Income Fund (G) jumped from 14<sup>th</sup> rank (0.0066) to 51<sup>st</sup> rank (0.0545), Chola Freedom Incomes STF (G) from 3<sup>rd</sup> rank to 51<sup>st</sup> rank in 2004. According to the table 5.15 we can say that equity oriented schemes have been more risky than other categories schemes.

- The summary of above discussion regarding risk analysis of selected schemes is presented in table 5.16A, 5.16B, 5.16C.

**Total: 5.16A Total Investment Risk Of Selected Schemes Of 2002-2003**

Total Risk	No. of schemes	Percentage
$\leq 0.0233$	43	69.35
$>0.0233 \leq 0.0515$	11	17.74
$>0.0515$	8	12.90
Total	62	100

$$\sigma_m = 0.0233, \sigma_p = 0.0515$$

**Total: 5.16B Total Investment Risk Of Selected Schemes Of 2003-2004**

Total Risk	No. of schemes	Percentage
$\leq 0.0275$	35	53.85
$>0.0275 \leq 0.0284$	2	3.08
$>0.0284$	28	43.08
Total	65	100

$$\sigma_m = 0.0275, \sigma_p = 0.0284$$

**Total: 5.16C Total Investment Risk Of Selected Schemes Of 2004-2005**

Total Risk	No. of schemes	Percentage
$\leq 0.0259$	37	56.92
$>0.0259 \leq 0.0349$	11	16.92
$>0.0349$	17	26.15
Total	65	100

$$\sigma_m = 0.0259, \sigma_p = 0.0349$$

Table: 5.16A, 5.16B and 5.16C indicate the standard deviation without any sector classification. Average risk of selected schemes during the year 2003 to 2005 was 0.0515, 0.0284 & 0.0349. Total average market risk was 0.0233, 0.0275 and 0.0259 under the reference years respectively. It exhibits that a large number of schemes, 43 (69.35%) have experienced less variability in the average weekly returns than market portfolio and hence low investment risk. Whereas 19 selected schemes (30.64 %) have higher variability and hence are more risky. As a result, the selected schemes show more investment risk as compared to the market

portfolio. Out of these 5 schemes have experienced variability for more than five times, led by Tata Yong Citizen's Fund (1.2926), Taurus Discovery Fund (0.4841), Tata Life Science & Technology Fund- G (0.1393), Tata Select Equity Fund –G ( 0.1381) and J M Basic Fund (0.1213) in 2003. Fund manger needed to diversify investment of such schemes and reduce risk up to reasonable level. In 2004, 53.85 % schemes have less risk than market risk. 43.08 % schemes have higher risk than average weekly risk of sample schemes. Therefore, it has high variability than market portfolio. In the year 2005, 12 schemes have more than double-digit variability as compared to market risk. 56.92% schemes bear less risk than market risk and 43.07 % schemes bear high risk over market risk. Among these, 26.15 % held very high risk and higher degree of variability in 2005. In 2005, 62 schemes have more than double-digit variability as compared to market risk.

#### 5.4 RISK-RETURN ANALYSIS OF SELECTED SCHEMES:

Eventhough risk and return analysis have been separately discussed earlier, it is essential to take a complex vision of risk-return analysis to understand the relationship between risk associated with investment and return on investment. Risk-return analysis provides the necessary basis for sound measure of performance evaluation of funds schemes.

For the study, the  $\sigma_p$  and average return (Avg.Rp) for selected schemes of Indian private sectors mutual funds have been simultaneously taken for three years from 2002–03 to 2004–05 and presented in table 5.17. In addition, risk-wise and return wise ranking of all 65 scheems based on average weekly return are presented in the table 5.18, which makes very noticalbe disclosures. The ranking of these two parameters applied to exhibits 'the higher return- higher risk, the low low return–high risk, the high return – low risk' schemes. Table 5.18 also shows the manner in which the risk-return profile of different schemes change during the reference period. "The change in ranking of different schemes in reference to their risk and return may emanate from the change in their own respective investment portfolio"<sup>3</sup>

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3 . M S Turan & B S Bodla – “ Performance Appraisal of Mutual Funds” pp.85,First Edition, New Delhi,2001.

**Table: 5.17 Company- Wise Weekly NAV Based Statistics On Risk (SDp) And Return (Rp) For Selected Schemes.**

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp
1	Benchmark Junior BeES	Equity	N/A	N/A	0.0305	0.0192	0.0388	0.0050
2	Benchmark Nifty BeES	Equity	0.0225	-0.0025	0.0305	0.0116	0.0290	0.0025
3	Chola Freedom Income STF (G)	Income	0.0010	0.0014	0.0612	-0.0072	0.0028	0.0007
4	Chola Freedom Income STF (HD)	income	0.0010	0.0014	0.0052	0.0003	0.0015	0.0005
5	Chola Gilt Investment Plan (G)	Gilt	0.0089	0.0020	0.0049	0.0029	0.0045	-0.0001
6	Chola Liquid Fund (G)	MM	0.0002	0.0012	0.0001	0.0009	0.0001	0.0009
7	Chola opportunity Fund (G)	Equity	0.0274	-0.0033	0.0341	0.0072	0.0245	0.0055
8	Chola opportunity Fund (QD)	Equity	0.0276	-0.0033	0.0341	0.0076	0.0664	0.0102
9	Chola Triple Ace (G)	Income	0.0068	0.0020	0.0041	0.0016	0.0028	-0.0001
10	Escorts Balanced Fund (G)	Balance	0.0190	0.0010	0.0254	0.0102	0.0252	0.0041
11	Escorts Gilt Fund (D)	Gilt	0.0077	0.0023	0.0051	0.0015	0.0022	-0.0001
12	Escorts Gilt Fund (G)	Gilt	0.0061	0.0018	0.0052	0.0015	0.0056	-0.0001
13	Escorts Growth Fund (G)	Income	0.0219	0.0011	0.0266	0.0110	0.0297	0.0054
14	Escorts Income Bond (G)	Income	0.0461	0.0120	0.0235	0.0028	0.0132	0.0018
15	Escorts Income Plan (D)	Equity	0.0038	0.0034	0.0029	0.0009	0.0027	-0.0006
16	Escorts Tax Plan (D)	ELSS	0.0230	0.0007	0.0871	0.0134	0.0314	0.0034
17	J M Balanced Fund (G)	Balance	0.0134	-0.0004	0.0164	0.0078	0.0193	0.0022
18	J M Basic Fund	Equity	0.1213	0.0167	0.1298	0.0374	0.0400	0.0023
19	J M Equity Fund (G)	Equity	0.0197	0.0004	0.0280	0.0139	0.0326	0.0045
20	J M Income Fund (G)	Income	0.0069	0.0021	0.0040	0.0017	0.0027	0.0002
21	Kotak Balance	Balance	0.0130	0.0005	0.0202	0.0084	0.0226	0.0059
22	Kotak Bond Deposit Plan (D)	Income	0.0055	0.0020	0.0107	0.0027	0.0032	0.0001
23	Kotak Bond Deposit Plan (G)	Income	0.0055	0.0020	0.0036	0.0017	0.0032	0.0001
24	Kotak Bond Regular Plan (AD)	Income	0.0104	0.0009	0.0094	0.0006	0.0032	0.0002
25	Kotak Bond Short Term plan (G)	Income	0.0009	0.0014	0.0007	0.0012	0.0006	0.0008
26	Kotak Gilt Saving Plan (G)	Gilt	0.0015	0.0012	0.0005	0.0008	0.0009	0.0009
27	Kotak Liquid Regular (D)	MM	0.0002	0.0000	0.0001	0.0000	0.0003	0.0000
28	Kotak Liquid Regular (G)	MM	0.0002	0.0012	0.0001	0.0009	0.0001	0.0008
29	Kotak MNC	Equity	0.0164	-0.0025	0.0286	0.0136	0.0508	0.0070
30	Kotak Tech	Equity	0.0313	-0.0006	0.0466	0.0070	0.0210	0.0073
31	Kotak-30 (G)	Equity	0.0205	0.0000	0.0259	0.0148	0.0326	0.0048
32	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0302	0.0158	0.0357	0.0065
33	Reliance Growth Fund (D)	Equity	0.0801	0.0055	0.0535	0.0181	0.0384	0.0069
34	Reliance Growth Fund (G)	Equity	0.0271	0.0028	0.0274	0.0183	0.0283	0.0088
35	Reliance income Fund (G)	Income	0.0069	0.0019	0.0038	0.0018	0.0030	0.0004
36	Reli.Liq.Fund Treasury Plan (WD)	MM	0.0041	0.0016	0.0006	0.0003	0.0006	0.0002
37	Reliance Medium Term Fund (G)	Income	0.0045	0.0018	0.0033	0.0013	0.0015	0.0002
38	Reliance Monthly Income Plan (G)	Income	0.0026	0.0018	0.0408	-0.0044	0.0047	0.0010
39	Reliance Vision Fund (G)	Equity	0.0276	0.0058	0.0282	0.0165	0.0279	0.0061
40	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0077	0.0013	0.0059	0.0006
41	Sundaram Balanced Fund (D)	Balance	0.0131	0.0001	0.0539	0.0103	0.0419	-0.0012
42	Sundaram Gilt Fund (D)	Gilt	0.0098	0.0012	0.0048	0.0005	0.0027	0.0000
43	Sundaram Gilt Fund (G)	Gilt	0.0033	0.0012	0.0026	0.0008	0.0024	0.0002
44	Sundaram Growth Fund (D)	Equity	0.0427	0.0000	0.0714	0.0043	0.0394	0.0046

Sr. No.	Name of the Scheme	Fund Class	2002-2003		2003-2004		2004-2005	
			$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp
45	Sundaram Income Plus (D)	Income	0.0071	0.0020	0.0041	0.0003	0.0229	0.0003
46	Sundaram Income Plus (G)	Income	0.0047	0.0020	0.0017	0.0012	0.0222	0.0008
47	Sundaram Money Fund (G)	MM	0.0002	0.0012	0.0001	0.0009	0.0001	0.0009
48	Sundaram Select Focus (D)	Equity	0.0197	0.0025	0.0595	0.0147	0.0559	-0.0016
49	Sundaram Tax Saver (D)	ELSS	0.0208	-0.0007	0.0664	0.0126	0.8984	-0.0463
50	Sundaram Tax Saver 97	ELSS	0.0208	-0.0006	0.0333	0.0155	0.0262	0.0032
51	Tata Balanced Fund (D)	Balance	0.0489	0.0056	0.0307	0.0114	0.0536	0.0046
52	Tata Balanced Fund (G)	Balance	0.0359	0.0034	0.0329	0.0101	0.0426	0.0056
53	Tata Gilt Securities Fund (D)	Gilt	0.0172	0.0042	0.0089	0.0028	0.0053	-0.0012
54	Tata Gilt Securities Fund (G)	Gilt	0.0141	0.0028	0.0371	0.0059	0.0054	-0.0009
55	Tata Income Fund (G)	Income	0.0066	0.0015	0.0129	0.0033	0.0545	0.0015
56	Tata Life Sci. & Tech. Fund (G)	Equity	0.1393	0.0063	0.1514	0.0196	0.0350	0.0082
57	Tata pure Equity Fund (G)	Equity	0.0789	0.0001	0.0684	0.0178	0.0308	0.0065
58	Tata Select Pure Equity Fund (G)	Equity	0.1381	0.0064	0.0987	0.0168	0.0331	0.0068
59	Tata Tax Saving Fund	ELSS	0.0723	0.0004	0.0373	0.0153	0.0281	0.0057
60	Tata Young Citizens' Fund	Balance	1.2926	0.1609	0.0347	0.0048	0.0159	0.0022
61	Taurus Discovery Fund	Equity	0.4841	0.0476	0.0402	0.0103	0.0477	0.0109
62	Taurus Libra Bond	Income	0.0125	0.0007	0.0028	0.0013	0.0116	0.0019
63	Taurus Libra Gilt	Gilt	0.0042	0.0009	0.0055	0.0017	0.0240	0.0002
64	Taurus Libra Tax Shield	ELSS	0.0315	0.0010	0.0464	0.0157	0.0681	0.0150
65	Taurus Star share	Equity	0.0307	-0.0009	0.0379	0.0138	0.0437	0.0112
	Avg. Risk		0.0515	0.0050	0.0284	0.0074	0.0349	0.0022

**Table: 5.18 Overall Ranking Of Schemes According To NAV Based Weekly Average Return And Standard Deviation of Portfolio**

Sr. No.	Name of the Scheme	Fund-Class	2002-03		2003-04		2004-05	
			$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp
1	Sundaram Money Fund (G)	MM	1	36	1	53	1	36
2	Chola Liquid Fund (G)	MM	1	35	1	54	1	37
3	Kotak Liquid Regular (G)	MM	1	34	1	55	1	40
4	Kotak Liquid Regular (D)	MM	1	52	1	63	2	55
5	Kotak Bond Short Term Plan (G)	Income	2	30	4	51	3	39
6	Chola Freedom Income STF (G)	Income	3	31	51	65	9	41
7	Chola Freedom Income STF (HD)	income	3	32	17	61	5	43
8	Kotak Gilt Saving Plan (G)	Gilt	4	33	2	57	4	35
9	Reliance Monthly Income Plan (G)	Income	5	27	45	64	13	34
10	Sundaram Gilt Fund (G)	Gilt	6	37	6	56	7	47
11	Escorts Income Plan (D)	Equity	7	12	8	52	8	60
12	Rel.Liq.Fund Treasury Plan (WD)	mm	8	28	3	60	3	48
13	Taurus Libra Gilt	Gilt	9	43	18	42	26	50
14	Reliance Medium Term Fund (G)	Income	10	25	9	47	5	49
15	Sundaram Income Plus (G)	Income	11	22	5	50	23	38
16	Kotak Bond Deposit Plan (G)	Income	12	18	10	43	11	52
17	Kotak Bond Deposit Plan (D)	Income	12	20	22	39	11	53
18	Escorts Gilt Fund (G)	Gilt	13	26	17	46	16	58
19	Tata Income Fund (G)	Income	14	29	23	35	51	33
20	Chola Triple Ace (G)	Income	15	21	13	44	9	56
21	Reliance Income Fund (G)	Income	16	24	11	40	10	44

Sr. No.	Name of the Scheme	Fund-Class	2002-03		2003-04		2004-05	
			$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp	$\sigma_p$	Avg.Rp
22	J M Income Fund (G)	Income	16	17	12	41	8	51
23	Sundaram Income Plus (D)	Income	17	19	13	62	25	45
24	Escorts Gilt Fund (D)	Gilt	18	16	16	45	6	59
25	Chola Gilt - Investment Plan (G)	Gilt	19	23	15	36	12	57
26	Sundaram Gilt Fund (D)	Gilt	20	38	14	59	8	54
27	Kotak Bond Regular Plan (AD)	Income	21	42	21	58	11	46
28	Taurus Libra Bond	Income	22	45	7	48	18	31
29	Kotak Balance	Balance	23	46	25	27	24	14
30	Sundaram Balanced Fund (D)	Balance	24	49	49	24	45	62
31	J M Balanced Fund (G)	Balance	25	54	24	28	21	30
32	Tata Gilt Securities Fund (G)	Gilt	26	14	41	32	15	61
33	Kotak MNC	Equity	27	59	33	17	49	8
34	Tata Gilt Securities Fund (D)	Gilt	28	10	20	37	14	63
35	Escorts Balanced Fund (G)	Balance	29	41	27	25	28	24
36	J M Equity Fund (G)	Equity	30	48	31	15	37	23
37	Sundaram Select Focus (D)	Equity	30	15	50	14	52	64
38	Kotak30 (G)	Equity	31	53	28	13	37	20
39	Sundaram Tax Saver 97	ELSS	32	55	38	11	29	26
40	Sundaram Tax Saver (D)	ELSS	32	57	52	19	55	65
41	Escorts Growth Plan (G)	Income	33	39	29	22	34	18
42	Benchmark Nifty BeES	Equity	34	60	35	20	33	27
43	Escorts Tax Plan (D)	ELSS	35	44	54	18	36	25
44	Reliance Growth Fund (G)	Equity	36	13	30	4	32	5
45	Chola Opportunities Fund (G)	Equity	37	62	39	30	27	17
46	Chola Opportunities Fund (QD)	Equity	38	61	39	29	53	4
47	Reliance Vision Fund (G)	Equity	38	7	32	8	30	13
48	Taurus Star Share	Equity	39	58	43	16	47	2
49	Kotak Tech	Equity	40	56	47	31	22	7
50	Taurus Libra Tax Shield	ELSS	41	40	46	10	54	1
51	Tata Balanced Fund (G)	Balance	42	11	37	26	46	16
52	Sundaram Growth Fund (D)	Equity	43	51	53	34	43	21
53	Escorts Income Bond (G)	Income	44	4	26	38	19	32
54	Tata Balanced Fund (D)	Balance	45	8	36	21	50	22
55	Tata Tax Saving Fund	ELSS	46	47	42	12	31	15
56	Tata Pure Equity Fund (G)	Equity	47	50	52	6	35	11
57	Reliance Growth Fund (D)	Equity	48	9	48	5	41	9
58	J M Basic Fund	Equity	49	3	56	1	44	28
59	Tata Select Equity Fund (G)	Equity	50	5	55	7	38	10
60	Tata Life Sci. & Tech. Fund (G)	Equity	51	6	57	2	39	6
61	Taurus Discovery Fund	Equity	52	2	44	23	48	3
62	Tata Young Citizens' Fund	Balance	53	1	40	33	20	29
63	Reliance Banking Fund (D)	Equity	N/A	N/A	34	9	40	12
64	Benchmark Junior BeES	Equity	N/A	N/A	35	3	42	19
65	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	N/A	19	49	17	42

A glimpse of table no.5.17 & 5.18 are presented as under:

- Generally, the average return (Avg.Rp) on investment went up with increase in total risk (SDp). However, this holds true around 52 % in selected schemes of private sectors under the reference years. In case of 34 out of 65 schemes, total



risk increased with increased average return. Among this, 10 schemes of equity, 8 schemes of gilt, 7 schemes of income, 4 of money market, 3 of balance and 2 of ELSS schemes.

- Few schemes does not obey this track, their result produced inverse relationship between risk (SDp) and average return. In case of 4 schemes in 2004 and 19 schemes in 2005, risk increased as compared to previous year but its return were reduced.
- 8 schemes in 2004 and 1 scheme in 2005 earned higher return even though their total risk declined. This includes Chola Gilt Investment Plan (G), Reliance Growth Fund (D), Tata Balanced Fund (D), Tata Balanced Fund (G), Tata Pure Equity Fund (G), Tata Select Equity Fund (G), Tata Tax Saving Fund and Taurus Libra Bond. While Kotak Tech higher return increased even though total risk declined in 2005.
- The year 2005 is different from the other reference years in term of relationship between risk and return. Decrease in return despite of increase in risk over the preceding year.
- Positive relation is observed in case of 13 schemes when from 2003 to 2004 but reverse result were observed when we shift from 2004 to 2005.
- The ranking on the basis of risk and return parameters has been applied to the year wise data which indicates that out of top 10 schemes of three years in term of return, the higher the risk –higher return principle applies.
- With the help of table 5.17 low return-high-risk schemes and high return- low risk schemes were identified. In 2003, Tata pure Equity Fund(G), Tata Tax saving Fund, Sundaram Growth Fund (D) and Kotak Tech schemes have low return and high risk. In 2004, Chola Freedom Income STF (G), Reliance Monthly Income (G). While in 2005, Sundaram Tax Saver (D), Sundaram Select Focus (D) and Sundaram Balance (D) were of low return- high risk schemes.
- High return- low risk schemes includes Escorts Income plan in 2003, Reliance Vision (G) in 2004 and Kotak Tech, Kotak balance & Chola opportunities Fund(G) scheme of 2005.
- In case of Kotak liquid Regular (D), return remains at same level regardless of changes in risk level.

## 5.6 MARKET RETURN AND MUTUAL FUND RETURN RELATIONSHIP:

To know the relationship between the security market and mutual fund, correlation has been calculated and presented in table 5.19 and frequency distribution of schemes is prepared according to positive and negative  $r_1$  "If security returns are not correlated, diversification could eliminate risk. It would be like flipping a large number of coins: We cannot predict with confidence the outcome of a single flip; but if a great many coins are flipped, we can virtually sure that heads will appear approximately one-half of them. Such canceling out of chances events provides stability to the disbursements of insurance companies. Correlations among security returns, however, prevent a similar market... if correlation among security returns were perfect.... if returns of all securities moved and down together in perfect direction, diversification could do nothing to eliminate risk. The fact that security returns are highly correlated, but not perfectly correlated, implies that diversification can reduce risk but not eliminate it."<sup>4</sup>

**Table: 5.19 Company Wise Correlation ( $r_1$ ) Between BSE Sensex And NAV Based Return Of Selected Schemes**

Sr. No.	Name of the Scheme	Fund Class	2002-03 $r_1$	2003-04 $r_1$	2004-05 $r_1$
1	Benchmark Junior BeES	Equity	N/A	0.4398	0.8686
2	Benchmark Nifty BeES	Equity	0.9743	0.9797	0.9846
3	Chola Freedom Income STF (G)	Income	0.1422	0.2191	0.0000
4	Chola Freedom Income STF (HD)	income	0.1589	-0.1116	-0.0264
5	Chola Gilt Investment Plan (G)	Gilt	0.2094	0.2917	0.2542
6	Chola Liquid Fund (G)	mm	0.0447	-0.0088	0.0650
7	Chola Opportunities Fund (G)	Equity	0.8085	0.7497	0.8324
8	Chola Opportunities Fund (QD)	Equity	0.8040	0.7608	0.4804
9	Chola Triple Ace (G)	Income	0.2372	0.2788	0.2693
10	Escorts Balanced Fund (G)	Balance	0.8905	0.8725	0.8578
11	Escorts Gilt Fund (D)	Gilt	0.1588	0.1417	0.4813
12	Escorts Gilt Fund (G)	Gilt	0.2083	0.1566	0.4165
13	Escorts Growth Plan (G)	Income	0.9297	0.9177	0.8747
14	Escorts Income Bond (G)	Income	-0.0990	-0.0467	0.5042
15	Escorts Income Plan (D)	Gilt	0.0543	0.0096	0.1243
16	Escorts Tax Plan (D)	ELSS	0.8909	0.3327	0.8600
17	J M Balanced Fund (G)	Balance	0.8464	0.9047	0.9413
18	J M Basic Fund	Equity	-0.0208	0.2717	0.8277
19	J M Equity Fund (G)	Equity	0.9111	0.9209	0.8627
20	J M Income Fund (G)	Income	0.2425	0.2415	0.2725
22	Kotak Balance	Balance	0.8445	0.8270	0.8350
23	Kotak Bond Deposit Plan (D)	Income	0.2274	0.1038	0.1901

4 . Markovitz op cit., p 5 cf., Gupta L.C. , Rates of Return on equities: The Indian Experience . Oxford, 1981, p.31.

Sr. No.	Name of the Scheme	Fund Class	2002-03	2003-04	2004-05
			$r_1$	$r_1$	$r_1$
24	Kotak Bond Deposit Plan (G)	Income	0.2340	0.2438	0.2256
25	Kotak Bond Regular Plan (AD)	Income	0.1813	0.3587	0.2259
26	Kotak Bond Short Term Plan (G)	Income	0.1617	0.2335	0.2875
27	Kotak Gilt Saving Plan (G)	Gilt	0.0964	-0.0373	0.1812
28	Kotak Liquid Regular (D)	mm	0.0777	0.1604	0.0251
29	Kotak Liquid Regular (G)	mm	0.0218	0.0394	0.1035
30	Kotak MNC	Equity	0.6057	0.5333	0.3821
31	Kotak Tech	Equity	0.7696	0.6850	0.5815
21	Kotak-30 (G)	Equity	0.9377	0.8937	0.7761
32	Reliance Banking Fund (D)	Equity	N/A	0.6019	0.5227
33	Reliance Growth Fund (D)	Equity	0.1044	0.4094	0.5240
34	Reliance Growth Fund (G)	Equity	0.7466	0.8071	0.8121
35	Reliance Income Fund (G)	Income	0.2263	0.2531	0.2568
36	Reliance Liquid Fund Treasury Plan (WD)	mm	0.0097	0.2955	0.1300
37	Reliance Medium Term Fund (G)	Income	0.0003	0.2659	0.1080
38	Reliance Monthly Income Plan (G)	Income	0.1178	-0.0650	0.7239
39	Reliance Vision Fund (G)	Equity	0.7358	0.8294	0.8951
40	RGSF - Long Term Gilt Retail (G)	Gilt	N/A	0.2687	0.2671
41	Sundaram Balanced Fund (D)	Balance	0.9169	0.4028	0.5048
42	Sundaram Gilt Fund (D)	Gilt	-0.1173	0.0787	-0.1356
43	Sundaram Gilt Fund (G)	Gilt	0.0905	-0.0544	-0.1562
44	Sundaram Growth Fund (D)	Equity	0.6115	0.4516	0.7479
45	Sundaram Income Plus (D)	Income	0.2896	-0.0045	-0.0671
46	Sundaram Income Plus (G)	Income	0.2256	0.1647	0.0757
47	Sundaram Money Fund (G)	mm	-0.0738	0.0196	0.1597
48	Sundaram Select Focus (D)	Equity	0.8380	0.4766	0.5301
49	Sundaram Tax Saver (D)	ELSS	0.9320	0.3539	0.4401
50	Sundaram Tax Saver 97	ELSS	0.9268	0.8419	0.8334
51	Tata Balanced Fund (D)	Balance	0.3844	0.5626	0.3086
52	Tata Balanced Fund (G)	Balance	0.5143	0.5589	0.3053
53	Tata Gilt Securities Fund (D)	Gilt	0.2093	-0.0596	0.1987
54	Tata Gilt Securities Fund (G)	Gilt	0.1857	0.0122	0.1758
55	Tata Income Fund (G)	Income	0.1733	-0.2314	0.1219
56	Tata Life Sci. & Tech Fund (G)	Equity	0.3163	0.2674	0.6476
57	Tata Pure Equity Fund (G)	Equity	0.3979	0.3701	0.8794
58	Tata Select Equity Fund (G)	Equity	0.4260	0.2611	0.8102
59	Tata Tax Saving Fund	ELSS	0.0874	0.7033	0.8529
60	Tata Young Citizens' Fund	Balance	0.0401	0.4482	0.8516
61	Taurus Discovery Fund	Equity	0.0732	0.7189	0.6089
62	Taurus Libra Bond	Income	0.1350	0.4368	0.1239
63	Taurus Libra Gilt	Gilt	0.0365	0.2270	0.1072
64	Taurus Libra Tax Shield	ELSS	0.6147	0.4870	-0.5139
65	Taurus Star Share	Equity	0.7923	0.7036	0.6014

**Table: 5. 20 Company Wise Frequency Distribution Of Selected Schemes According To Positive And Negative Value Of  $r_1$**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005	
		Positive	Negative	Positive	Negative	Positive	Negative
1	Benchmark MF	1	0	2	0	2	0
	%	100.00	0.00	100.00	0.00	100.00	0.00
2	Cholamandalam MF	7	0	5	2	6	1
	%	100.00	0.00	71.43	28.57	85.71	14.29
3	Escorts MF	6	1	6	1	7	0
	%	85.71	14.29	85.71	14.29	100.00	0.00
4	J M MF	3	1	4	0	4	0
	%	75.00	25.00	100.00	0.00	100.00	0.00
5	Kotak MF	11	0	10	1	11	0
	%	100.00	0.00	90.91	9.09	100.00	0.00
6	Reliance MF	7	0	8	1	9	0
	%	100.00	0.00	88.89	11.11	100.00	0.00
7	Sundaram MF	8	2	8	2	7	3
	%	80.00	20.00	80.00	20.00	70.00	30.00
8	Tata MF	10	0	8	2	10	0
	%	100.00	0.00	80.00	20.00	100.00	0.00
9	Taurus MF	5	0	5	0	5	0
	%	100.00	0.00	100.00	0.00	100.00	0.00
Total		58	4	56	9	61	4
%		93.55	6.45	86.15	13.85	93.85	6.15

Following are some attributes of table no.5.19 and 5.20.

58 (93.55%) out of 62 schemes in the year 2003 having a positive relationship and 4 schemes (6.45%) bear negative relationship with the security market (BSE Sensex). Coefficient of correlations ( $r_1$ ) of selected schemes for 2003 to 2005 were calculated between portfolio return and market return. The schemes have recorded positive relationship in from 58 schemes (93.56%) in 2003 to 61 schemes (93.85%) in the year 2005. Whereas negative  $r_1$  schemes were 4 (6.45 %) in 2003, 9 (13.85%) and 4 (6.15%) out of 65 schemes in 2004 & 2005.

During 2003, the lowest  $r_1$  in case of -0.1173 and highest 0.9743 in case of Benchmark Nifty BeES. In 2005,  $r_1$  ranged from -0.2314 lowest for Tata Income Fund (G) and 0.9797 highest for Benchmark Nifty BeES. The lowest  $r_1$  in case of Sundaram Gilt Fund (D) is -0.1562 to highest 0.9846 of Benchmark Nifty BeES in the year 2005. It is significant to note that Benchmark Nifty BeES has highest  $r_1$  among all 65 schemes during the study period. Further 52 schemes  $r_1$  has continuously positive relationship with that of market from the year 2003 to 2005.

“The correlation coefficient will always lie between +1.0 and -1.0. Returns of securities vary perfectly together when the correlation coefficient is +1.0 and in perfectly opposite direction when it is -1.0. A zero correlation coefficient implies that there is no relationship of securities”<sup>5</sup>. Moreover, 22 schemes have correlation coefficient more than 0.5 which shows a high positive correlation. Chola Freedom Income STF (G) has zero correlation.

There is relationship between mutual funds return and securities returns (BSE Sensex). There are only few schemes in case of which  $r_1$  have continuously and gradually rose. These include Benchmark Nifty BeES, Chola Opportunities Fund(G), Escorts Gilt Fund(G), J M Balanced Fund(G), Kotak Bond Short Term Plan (G) , Kotak Liquid Regular(G) , Reliance Growth Fund(D), Reliance Growth Fund(G), Reliance Income Fund (G), Reliance Vision Fund(G), Sundaram Money Fund(G), Tata Tax Saving Fund and Tata Yong Citizen’s Fund.

From the above analysis, it is clear that the schemes returns have significant relationship with market returns. It has been positive in case of majority of the schemes during the year 2003 to 2005. This shows that the NAV of the majority of the schemes has direction of stock market especially in case of equity-oriented schemes.

## **5.6 SYSTEMATIC AND UNSYSTEMATIC RISK:**

Risk which is associated with return on securities can be divided as Systematic and unsystematic. Diversification of portfolio can reduce the risk when the return of securities is unique and do not exactly vary in the same direction. “A risk which arises from the uncertainties which are unique to individual securities and which is diversifiable if large numbers of securities are combined to form well- diversified portfolios is called diversifiable risk or unsystematic or unique risk”<sup>6</sup>. The diversification risks like:

1. Labour strikes,
2. The company loses a big contract in a bid.
3. Test and preference of customers changed.
4. Development of new technology
5. More competitors entered in market
6. Advertising campaigns etc.

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5. Financial Management by I M Panday, professor of finance IIM., Ahmedabad, Eighth Edition, pp.344.

6. I M Panday –“Financial Management” eighth edition pp.350.

The risk arising from above factors can be diversified by proper portfolio management of securities i.e. changing investment portfolio.

The other part of total risk associated with return on securities is systematic risk. This kind of risk arises due to uncertainty of economical, political, environmental, sociological changes etc. It is component of total risk associated with return which can not be controlled by the diversification. "Systematic risk indicates the manner in which return change systematically with changes in market return."<sup>7</sup> There are mainly two reasons that the systematic risk can not be reduce with help of diversification of portfolio holding like first , market factors effects the price level of all the securities which are present in the market simultaneously and second the factors by which such risk arises it can not be controlled by an individual investor or institutional investors. "Investors are exposed to market risk even when they hold well diversified portfolio of securities"<sup>8</sup>. Following are the example of systematic risk:

1. Interest rate policy
2. Tax rate of corporate is rises
3. Change in credit policy.
4. Inflation rate increase

The *Beta* value is calculated with reference to BSE Sensex and weekly NAV return of selected schemes of Indian private sectors mutual funds. Beta is a measure of volatility of a portfolio return over time in relation to the market return. It may be negative or positive. "It is the slope of the regression line, i.e. length of vertical movement (portfolio return) per unit of horizontal movement (Market return). With slope at a 45° angle, beta would be 1.0. It would mean that on average every one per cent return on the market is associated during this period of time with a corresponding one per cent return in the stock or any portfolio. A shallow slope will be represented by a beta of less than 1.0."<sup>9</sup> It is generally used to symbolize risk of the managed portfolios. Here, an effort is made to explain the relation of Beta value and market return.

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7. Cohen,Jerome B., Zimbarg, Edward D and Zeikel Arthur, "Investment Analysis and portfolio Management" Irwin, 5(1987) 139

8. Ibid, pp. 441.

9. Ramesh Chander, " Performance Appraisal of Mutual Fund in India", First Edition, new Delhi, 2002, pp. 64.

**Table: 5.21 Implications Of Beta Value**

Beta value	Implications
< Zero	Inverse relation to market returns means when market falls then portfolio return will rise.
Zero	No effect on portfolio returns in case of any change in market i.e. independent of market.
One	Portfolio returns and market move in same direction,
> One	Portfolio return is more risky over the market returns More sensitive to market.

The table 5.22 to 5.26 exhibits company wise, fund-class wise, overall ranking of schemes according to beta value and frequency distribution of schemes having negative and positive value of beta. Beta can symbolically be presented as under:

$$\beta_p = \frac{Cov_{pm}}{V_m}$$

Where,

$\beta_p$  is systematic risk of mutual fund scheme,

$Cov_{pm}$  is Covariance of average weekly return of schemes and Average weekly market index

$V_m$  is the variance of the market return.

## 1. BETA ANALYSIS MUTUAL FUND COMPANY WISE:

Table no. 5.22 and 5.23 disclose company wise ranking and frequency distribution according to beta value from the period 2003 to 2005.

**Table: 5.22 Company-Wise Ranking Of Selected Schemes According To Beta Values And NAV Return**

Sr. No.	Name of Schemes	Fund-Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
1	Benchmark Nifty BeES	Equity	0.9121	1	1.0548	2	1.0714	1
2	Benchmark Junior BeES	Equity	N/A	N/A	0.4745	1	1.2128	2
6	Chola Liquid Fund (G)	MM	0.0003	1	0.0000	2	0.0003	3
3	Chola Freedom Income STF (G)	Income	0.0059	2	0.4731	5	0.0000	2
4	Chola Freedom Income STF (HD)	income	0.0066	3	-0.0206	1	-0.0015	1
9	Chola Triple Ace (G)	Income	0.0674	4	0.0399	3	0.0287	4
5	Chola Gilt Investment Plan (G)	Gilt	0.0772	5	0.0502	4	0.0429	5
8	Chola opportunity Fund (QD)	Equity	0.9231	6	0.9170	7	1.3044	7
7	Chola opportunity Fund (G)	Equity	0.9236	7	0.9016	6	0.7708	6
10	Escorts Income Bond (G)	Income	-0.1899	1	-0.0388	1	0.2489	4
11	Escorts Income Plan (D)	Equity	0.0086	2	0.0010	2	0.0124	1
12	Escorts Gilt Fund (D)	Gilt	0.0507	3	0.0258	3	0.0403	2
13	Escorts Gilt Fund (G)	Gilt	0.0532	4	0.0285	4	0.0875	3
14	Escorts Balanced Fund (G)	Balance	0.7046	5	0.7824	5	0.8098	5
15	Escorts Growth Fund (G)	Income	0.8467	6	0.8666	6	0.9734	6

Sr. No.	Name of Schemes	Fund-Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
16	Escorts Tax Plan (D)	ELSS	0.8517	7	1.0233	7	1.0131	7
17	J M Basic Fund	Equity	-0.1052	1	1.2454	4	1.2395	4
18	J M Income Fund (G)	Income	0.0696	2	0.0344	1	0.0272	1
19	J M Balanced Fund (G)	Balance	0.4726	3	0.5234	2	0.6801	2
20	J M Equity Fund (G)	Equity	0.7489	4	0.9106	3	1.0528	3
21	Kotak Liquid Regular (G)	MM	0.0002	1	0.0002	2	0.0003	2
22	Kotak Liquid Regular (D)	MM	0.0005	2	0.0006	3	0.0002	1
23	Kotak Gilt Saving Plan (G)	Gilt	0.0059	3	-0.0007	1	0.0059	3
24	Kotak Bond Short Term plan (G)	Income	0.0061	4	0.0060	4	0.0062	4
25	Kotak Bond Deposit Plan (D)	Income	0.0522	5	0.0394	6	0.0226	5
26	Kotak Bond Deposit Plan (G)	Income	0.0536	6	0.0308	5	0.0273	6
27	Kotak Bond Regular Plan (AD)	Income	0.0783	7	0.1190	7	0.0274	7
28	Kotak MNC	Equity	0.4131	8	0.5388	8	0.7272	10
29	Kotak Balance	Balance	0.4581	9	0.5894	9	0.7073	9
30	Kotak-30 (G)	Equity	0.8008	10	0.8185	10	0.9476	11
31	Kotak Tech	Equity	1.0041	11	1.1274	11	0.4575	8
32	Reliance Medium Term Fund (G)	Income	0.0001	1	0.0307	3	0.0060	2
33	Reli. Liq Fund Treasury Plan (WD)	MM	0.0017	2	0.0060	2	0.0031	1
34	Reliance Monthly Income Plan (G)	Income	0.0130	3	-0.0923	1	0.1265	5
35	Reliance income Fund (G)	Income	0.0649	4	0.0337	4	0.0288	3
36	Reliance Growth Fund (D)	Equity	0.3516	5	0.7781	7	0.7529	7
37	Reliance Growth Fund (G)	Equity	0.8525	6	0.7868	8	0.8608	8
38	Reliance Vision Fund (G)	Equity	0.8533	7	0.8304	9	0.9367	9
39	Reliance Banking Fund (D)	Equity	N/A	N/A	0.6291	6	0.6993	6
40	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0703	5	0.0589	4
41	Sundaram Gilt Fund (D)	Gilt	-0.0481	1	0.0135	5	-0.0137	3
42	Sundaram Money Fund (G)	MM	-0.0007	2	0.0001	3	0.0005	4
43	Sundaram Gilt Fund (G)	Gilt	0.0125	3	-0.0050	1	-0.0140	2
44	Sundaram Income Plus (G)	Income	0.0412	4	0.0099	4	0.0631	5
45	Sundaram Income Plus (D)	Income	0.0793	5	-0.0007	2	-0.0576	1
46	Sundaram Balanced Fund (D)	Balance	0.5009	6	0.7663	6	0.7924	6
47	Sundaram Select Focus (D)	Equity	0.6307	7	1.0009	9	1.1110	10
48	Sundaram Tax Saver 97	ELSS	0.8039	8	0.9901	8	0.8180	7
49	Sundaram Tax Saver (D)	ELSS	0.8076	9	0.8304	7	1.0852	8
50	Sundaram Growth Fund (D)	Equity	1.0881	10	1.1381	10	1.1041	9
51	Tata Income Fund (G)	Income	0.0477	1	-0.1051	1	0.2491	3
52	Tata Gilt Securities Fund (G)	Gilt	0.1089	2	0.0161	3	0.0353	1
53	Tata Gilt Securities Fund (D)	Gilt	0.1504	3	-0.0188	2	0.0392	2
54	Tata Tax Saving Fund	ELSS	0.2658	4	0.9320	9	0.8964	8
55	Tata Balanced Fund (G)	Balance	0.7697	5	0.6537	6	0.4874	4
56	Tata Balanced Fund (D)	Balance	0.7834	6	0.6128	5	0.6192	6
57	Tata pure Equity Fund (G)	Equity	1.3072	7	0.9001	7	1.0145	10
58	Tata Life Sci. & Tech Fund (G)	Equity	1.8355	8	1.4377	10	0.8479	7
59	Tata Young Citizens' Fund	Balance	2.1785	9	0.5532	4	0.5062	5
60	Tata Select Pure Equity Fund (G)	Equity	2.4505	10	0.9157	8	1.0047	9
61	Taurus Libra Gilt	Gilt	0.0064	1	0.0440	2	0.0962	2
62	Taurus Libra Bond	Income	0.0701	2	0.0428	1	0.0540	1
63	Taurus Libra Tax Shield	ELSS	0.8065	3	0.7980	3	1.3111	5
64	Taurus Star share	Equity	1.0127	4	0.9417	4	0.9842	3
65	Taurus Discovery Fund	Equity	1.4756	5	1.0218	5	1.0874	4
	Average		0.4616		0.4481		0.4791	



**Table: 5.23 Company-Wise Frequency Distribution Of Selected Schemes  
According Positive And Negative Value Of Beta**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Over all +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Benchmark MF	1	0	2	0	2	0	
	%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
2	Cholamandalam MF	7	0	6	1	6	1	
	%	100.00	0.00	85.71	14.29	85.71	14.29	90.48
3	Escorts MF	6	1	6	1	7	0	
	%	85.71	14.29	85.71	14.29	100.00	0.00	90.48
4	J M MF	3	1	4	0	4	0	
	%	75.00	25.00	100.00	0.00	100.00	0.00	91.67
5	Kotak MF	11	0	10	1	11	0	
	%	100.00	0.00	90.91	9.09	100.00	0.00	96.97
6	Reliance MF	7	0	8	1	9	0	
	%	100.00	0.00	88.89	11.11	100.00	0.00	96.30
7	Sundaram MF	8	2	8	2	7	3	
	%	80.00	20.00	80.00	20.00	70.00	30.00	76.67
8	Tata MF	10	0	8	2	10	0	
	%	100.00	0.00	80.00	20.00	100.00	0.00	93.33
9	Taurus MF	5	0	5	0	5	0	
	%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
	Total	58	4	57	8	61	4	
	%	93.55	6.45	87.69	12.31	93.85	6.15	91.70

Average beta for selected schemes was as low as 0.4616, 0.4481, and 0.4791 from 2003 up to 2005. Regarding the Benchmark mutual fund, its both the schemes have a positive beta value throughout the study period. In case of Cholamandalam mutual fund, the highest value of beta coefficient is 1.3044 for Chola Opportunities fund (QD) in the year 2005 and the lowest in respect of Chola Freedom Income STF (HD) is -0.0015 in the year 2005. The highest and lowest values both fall in the year 2005 in case of Cholamandalam mutual fund.

Regarding Escorts mutual fund, lowest beta coefficient value is -0.1899 in respect of Escorts Income Bond (D) and Escorts Tax (D) has highest beta value coefficient in the year 2004. During the study period, Escorts Tax plan (D) has highest beta value among 7 selected schemes of Escorts mutual fund. The

value of beta coefficient in case of J M mutual fund ranges from -0.1052, the lowest for J M Basic scheme to 1.2454, the highest for J M Basic fund. It shows that there is no consistency in beta value year by year. Kotak mutual fund's selected schemes beta value range -0.0007 for Kotak Gilt Saving plan (G) to 0.1190 of Kotak Bond Regular plan (AD). Further, only one scheme has registered its negative beta value during the study period.

When we analysis the data of selected schemes of Reliance mutual fund, Reliance Medium Term funds (G) has lowest beta value that is 0.0001 and highest 0.8533 for Reliance Vision fund(G) in the year 2003. In the year 2003, Reliance Monthly Income plan(G) have beta value -0.0923 lowest in the year 2004 and in 2005 Reliance Liquid Fund Treasury plan (WD) have 0.0031 beta value which is lowest among 9 schemes of Reliance mutual fund. The Reliance Vision Fund (G) possesses highest beta value during all these three years. A mere glance of the information of Sundaram mutual fund, out of 10 schemes 1 in 2003, 2 in 2004 and 3 in 2005 schemes have beta value more than one. Range of beta value is between -0.0481 to 1.1381 from year 2003 to 2005.

In case of Tata mutual fund, range of beta value of selected schemes is from -0.1051, the lowest for Tata Income Fund (G) to 2.4505, the highest beta value for the Tata Select Pure Equity Fund (G) from the year 2003 to 2005. Among the all 9 selected schemes of companies, Tata Select Pure Equity Fund (G) possesses the highest beta value during the reference years. Taurus Libra Gilt (0.0064) has lowest beta value in the year 2003. Taurus Libra Bond 0.0418 and 0.0540 in the year 2004 and 2005 respectively. The highest beta value during three year was 1.4756 and 1.2018 for Taurus Discovery Fund in 2003 & 2004 and 1.3111 for Taurus Libra Tax Shield in the year 2005. All five schemes of this mutual fund have positive beta value.

## 2. BETA ANALYSIS FUND CLASS WISE:

Table no. 5.24 and 5.25 indicates the Fund-Class wise ranking and frequency distribution based on beta value of selected schemes.

**Table: 5.24 Fund Class-Wise Ranking Of Selected Schemes According To Beta Values And NAV Return**

Sr. No.	Name of Schemes	Fund-Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
1	Kotak Balance	Balance	0.4581	1	0.5894	3	0.7073	5
2	J M Balanced Fund (G)	Balance	0.4726	2	0.5234	1	0.6801	4
3	Sundaram Balanced Fund (D)	Balance	0.5009	3	0.7663	6	0.7924	6
4	Escorts Balanced Fund (G)	Balance	0.7046	4	0.7824	7	0.8098	7
5	Tata Balanced Fund (G)	Balance	0.7697	5	0.6537	5	0.4874	1
6	Tata Balanced Fund (D)	Balance	0.7834	6	0.6128	4	0.6192	3
7	Tata Young Citizens' Fund	Balance	2.1785	7	0.5532	2	0.5062	2
8	Tata Tax Saving Fund	ELSS	0.2658	1	0.9320	3	0.8964	2
9	Sundaram Tax Saver 97	ELSS	0.8039	2	0.9901	4	0.8180	1
10	Taurus Libra Tax Shield	ELSS	0.8065	3	0.7980	1	1.3111	5
11	Sundaram Tax Saver (D)	ELSS	0.8076	4	0.8304	2	1.0852	4
12	Escorts Tax Plan (D)	ELSS	0.8517	5	1.0233	5	1.0131	3
19	J M Basic Fund	Equity	-0.1052	1	1.2454	20	1.2395	20
13	Escorts Income Plan (D)	Equity	0.0086	2	0.0010	1	0.0124	1
20	Reliance Growth Fund (D)	Equity	0.3516	3	0.7781	5	0.7529	5
21	Kotak MNC	Equity	0.4131	4	0.5388	3	0.7272	4
22	Sundaram Select Focus (D)	Equity	0.6307	5	1.0009	15	1.1110	18
23	J M Equity Fund (G)	Equity	0.7489	6	0.9106	11	1.0528	14
24	Kotak-30 (G)	Equity	0.8008	7	0.8185	7	0.9476	10
26	Reliance Growth Fund (G)	Equity	0.8525	8	0.7868	6	0.8608	8
27	Reliance Vision Fund (G)	Equity	0.8533	9	0.8304	8	0.9367	9
14	Benchmark Nifty BeES	Equity	0.9121	10	1.0548	17	1.0714	15
28	Chola opportunity Fund (QD)	Equity	0.9231	11	0.9170	13	1.3044	21
29	Chola opportunity Fund (G)	Equity	0.9236	12	0.9016	10	0.7708	6
15	Kotak Tech	Equity	1.0041	13	1.1274	18	0.4575	2
30	Taurus Star share	Equity	1.0127	14	0.9417	14	0.9842	11
16	Sundaram Growth Fund (D)	Equity	1.0881	15	1.1381	19	1.1041	17
31	Tata pure Equity Fund (G)	Equity	1.3072	16	0.9001	9	1.0145	13
32	Taurus Discovery Fund	Equity	1.4756	17	1.0218	16	1.0874	16
33	Tata Life Sci. & Tech. Fund (G)	Equity	1.8355	18	1.4377	21	0.8479	7
34	Tata Select Pure Equity Fund (G)	Equity	2.4505	19	0.9157	12	1.0047	12
17	Reliance Banking Fund (D)	Equity	N/A	N/A	0.6291	4	0.6993	3
18	Benchmark Junior BeES	Equity	N/A	N/A	0.4745	2	1.2128	19
35	Sundaram Gilt Fund (D)	Gilt	-0.0481	1	0.0135	4	-0.0137	2
36	Kotak Gilt Saving Plan (G)	Gilt	0.0059	2	-0.0007	3	0.0059	3
37	Taurus Libra Gilt	Gilt	0.0064	3	0.0440	8	0.0962	10
38	Sundaram Gilt Fund (G)	Gilt	0.0125	4	-0.0050	2	-0.0140	1
39	Escorts Gilt Fund (D)	Gilt	0.0507	5	0.0258	6	0.0403	6
40	Escorts Gilt Fund (G)	Gilt	0.0532	6	0.0285	7	0.0875	9
41	Chola Gilt Investment Plan (G)	Gilt	0.0772	7	0.0502	9	0.0429	7
42	Tata Gilt Securities Fund (G)	Gilt	0.1089	8	0.0161	5	0.0353	4
43	Tata Gilt Securities Fund (D)	Gilt	0.1504	9	-0.0188	1	0.0392	5
44	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0703	10	0.0589	8
45	Sundaram Income Plus (D)	Income	0.0793	16	-0.0007	5	-0.0576	1
46	Chola Freedom Income STF (HD)	income	0.0066	5	-0.0206	4	-0.0015	2
47	Chola Freedom Income STF (G)	Income	0.0059	3	0.4731	16	0.0000	3
48	Reliance Medium Term Fund (G)	Income	0.0001	2	0.0307	8	0.0060	4
49	Kotak Bond Short Term plan (G)	Income	0.0061	4	0.0060	6	0.0062	5
50	Kotak Bond Deposit Plan (D)	Income	0.0522	9	0.0394	12	0.0226	6

Sr. No.	Name of Schemes	Fund-Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
51	J M Income Fund (G)	Income	0.0696	13	0.0344	11	0.0272	7
52	Kotak Bond Deposit Plan (G)	Income	0.0536	10	0.0308	9	0.0273	8
53	Kotak Bond Regular Plan (AD)	Income	0.0783	15	0.1190	15	0.0274	9
54	Chola Triple Ace (G)	Income	0.0674	12	0.0399	13	0.0287	10
55	Reliance income Fund (G)	Income	0.0649	11	0.0337	10	0.0288	11
56	Taurus Libra Bond	Income	0.0701	14	0.0428	14	0.0540	12
57	Sundaram Income Plus (G)	Income	0.0412	7	0.0099	7	0.0631	13
58	Reliance Monthly Income Plan (G)	Income	0.0130	6	-0.0923	2	0.1265	14
59	Escorts Income Bond (G)	Income	-0.1899	1	-0.0388	3	0.2489	15
60	Tata Income Fund (G)	Income	0.0477	8	-0.1051	1	0.2491	16
25	Escorts Growth Fund (G)	Income	0.8467	17	0.8666	17	0.9734	17
61	Sundaram Money Fund (G)	MM	-0.0007	1	0.0001	2	0.0005	4
62	Kotak Liquid Regular (G)	MM	0.0002	2	0.0002	3	0.0003	2
63	Chola Liquid Fund (G)	MM	0.0003	3	0.0000	1	0.0003	3
64	Kotak Liquid Regular (D)	MM	0.0005	4	0.0006	4	0.0002	1
65	Reli. Liq.Fund Treasury Plan (WD)	MM	0.0017	5	0.0060	5	0.0031	5

**Table: 5.25 Fund-Class Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Value Of Beta**

Sr. No.	Fund Class	2002-03		2003-04		2004-05		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	7	0	7	0	7	0	
	%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
2	ELSS	5	0	5	0	5	0	
	%	100.00	0.00	100.00	0.00	100.00	0.00	100.00
4	Equity	18	1	21	0.00	21	0	
	%	94.74	5.26	100.00	0.00	100.00	0.00	98.25
5	Gilt	8	1	7	3	8	2	
	%	88.89	11.11	70.00	30.00	80.00	20.00	79.63
6	Income	16	1	12	5	15	2	
	%	94.12	5.88	70.59	29.41	88.24	11.76	84.31
7	Money Market	4	1	5	0	5	0	
	%	80.00	20.00	100.00	0.00	100.00	0.00	93.33
8	Total	58	4	57	8	61	4	
	%	93.55	6.45	87.69	12.31	93.85	6.15	91.70

**i) BALANCED SCHEMES:**

A reference to balanced schemes in table no 5.23 shows that Kotak balance fund has the lowest beta value 0.4581 in the year 2003 and the highest for Tata Young Citizen's fund 2.1785. During the period from year 2003 to 2005, beta range of balance schemes were 0.4874 to 2.1785. All 7 schemes have been recorded positive beta value. Almost all 7 balance schemes value of beta

coefficient has less than one or near to one. Balance schemes got 100 % positive beta value and held first rank according to overall positive beta value.

**ii) ELSS SCHEMES:**

In respect to ELSS, Tata Tax Saving fund has the lowest beta value 0.2658 and the highest for Taurus Libra Tax Shield 1.3111. There is 100% positive beta value of all 5 ELSS throughout the reference years. ELSS also held first rank with 100 % overall positive beta value.

**iii) EQUITY SCHEMES:**

The data of equity schemes reflects all schemes have positive beta value except J M Basic fund. It is significant to note that J M Basic fund has the lowest beta value (-0.1052) in year 2003 but after that reverse situation is observed. It possesses the highest beta value in the year 2004 and 2005. The beta range of equity schemes from the year 2003 to 2005 is -0.1052 to 2.4505. There is very wide gap between the lowest beta value and the highest value. 7 out of 19 in 2003, 8 out of 21 in 2004 and 13 out of 31 schemes have been provided beta value more than one which is very high compared to average beta value. These schemes involve greater risk than the market return. The highest risky scheme among the equity categories is Tata select Pure Equity Fund (2.4505), Tata Life Sci. & Tech. Fund-G (1.4377) and Chola Opportunities Fund-QD (1.3044) bearing highest beta values in 2003, 2004 and 2005 respectively. From the data it proved that equity oriented schemes are very risky compared to other kinds of schemes. Overall Positive beta value in case of equity schemes found at 98.25 % which is at second position among selected schemes categories.

**iv) GILT SCHEMES:**

8 out of 9 Gilt schemes have positive beta value. Sundaram Gilt Fund (D) has the lowest value -0.0481 and the highest 0.1504 in respect of Tata Gilt Securities Fund (D) in the year 2003. The value of beta range of Gilt schemes were between -0.0481 to 0.1504. Regarding overall positive beta value, Gilt schemes have the lowest rank. Data about income schemes of 17 schemes presented in table no 5.23 depict the lowest beta value -0.1899 in respect of Escorts Income Bond (G) and highest 0.4731 in respect of Chola Freedom Income STF (HD). Numbers of schemes having negative beta increased from 1 (5.88%) in

2003 to 5 (29.41%) in 2004 and 3 (17.65 %) in 2005. 12 out of 17 schemes have consistently registered positive beta value and beta value of 9 schemes have gone up in the year 2005 as compared to 2003. Whereas 8 schemes beta value declined in the year 2005. Overall positive performance in term of beta value seen 84.31 %.

#### **v) MONEY MARKET SCHEMES:**

The beta value of money market schemes remain very less compared to all other categories schemes throughout study period. Its beta value range remain between -0.0007 to 0.0060. It can be seen from the analysis that the values of beta coefficients are very small or negligible in case of money market schemes. Money market schemes obtained third rank in term of overall positive beta value among the selected categories.

## **2. BETA ANALYSIS OVERALL RANK WISE:**

Table: 5.26 indicate the overall ranking of selected schemes according to beta values and average weekly NAV return for the period from 2002-03 to 2004-05.

In respect of overall ranking, top 5 lowest beta value schemes were Escorts Income Bond (G) -0.1899 followed by J M Basic Fund -0.1052, Tata Income Fund (G) -0.1051, Reliance Monthly Income (G) -0.0923 and Sundaram Income Plan (D) -0.0576 throughout the study period.

Top 5 schemes possessing the highest beta value were Tata Select Pure Equity Fund (G) 2.4505 which followed by Tata Young Citizen's Fund 2.1785, Tata Life Science and Technology Fund (G) 1.8355, Taurus Discovery Fund 1.4756 and Chola Opportunities Fund (G) 1.3320 from study period 2003 to 2005. The gap between the lowest and the highest beta value is very wide during all three years.

The highest value goes down as low as 1.3320 in case of Chola Opportunities Fund (D) and the lowest value goes up as high as 0.0576. In reference to table 5.24, during the year 2003, 93.55% schemes were positive beta value, which increased up to 96.92% in the year 2005 and in case of negative beta value schemes that remains at same numbers in the year 2005 as compared to the year 2003.

Escorts Income Bond (G) goes down from 1<sup>st</sup> rank in the year 2003 to 30<sup>th</sup> rank and J M Basic Fund from 2<sup>nd</sup> rank to 62<sup>th</sup> rank in the year 2005. While Sundaram Incomen plus (D) goes up from 29<sup>th</sup> rank to 1<sup>st</sup> rank, Sundaram Gilt schemes (G) jumped from 15<sup>th</sup> rank to 2<sup>nd</sup> rank in the year 2005 as compared to the year 2003. It is observed that there is no change in rank of 6 schemes in the year 2005 as compared to 2003.

**Table: 5.26 Overall Ranking Of Selected Schemes According To  
Beta Values And NAV Return**

Sr. No.	Name of Schemes	Fund- Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
1	Sundaram Income Plus (D)	Income	0.0793	29	-0.0007	7	-0.0576	1
2	Sundaram Gilt Fund (G)	Gilt	0.0125	15	-0.0050	6	-0.0140	2
3	Sundaram Gilt Fund (D)	Gilt	-0.0481	3	0.0135	15	-0.0137	3
4	Chola Freedom Income STF (HD)	Income	0.0066	13	-0.0206	4	-0.0015	4
5	Chola Freedom Income STF (G)	Income	0.0059	10	0.4731	30	0.0000	5
6	Kotak Liquid Regular (D)	MM	0.0005	8	0.0006	11	0.0002	6
7	Kotak Liquid Regular (G)	MM	0.0002	6	0.0002	10	0.0003	7
8	Chola Liquid Fund (G)	MM	0.0003	7	0.0000	8	0.0003	7
9	Sundaram Money Fund (G)	MM	-0.0007	4	0.0001	9	0.0005	8
10	Reli.Liq.Fund Treasury Plan (WD)	MM	0.0017	9	0.0060	13	0.0031	9
11	Kotak Gilt Saving Plan (G)	Gilt	0.0059	10	-0.0007	7	0.0059	10
12	Reliance Medium Term Fund (G)	Income	0.0001	5	0.0307	19	0.0060	11
13	Kotak Bond Short Term plan (G)	Income	0.0061	11	0.0060	13	0.0062	12
14	Escorts Income Plan (D)	Equity	0.0086	14	0.0010	12	0.0124	13
15	Kotak Bond Deposit Plan (D)	Income	0.0522	20	0.0394	23	0.0226	14
16	J M Income Fund (G)	Income	0.0696	25	0.0344	22	0.0272	15
17	Kotak Bond Deposit Plan (G)	Income	0.0536	22	0.0308	20	0.0273	16
18	Kotak Bond Regular Plan (AD)	Income	0.0783	28	0.1190	29	0.0274	17
19	Chola Triple Ace (G)	Income	0.0674	24	0.0399	24	0.0287	18
20	Reliance income Fund (G)	Income	0.0649	23	0.0337	21	0.0288	19
21	Tata Gilt Securities Fund (G)	Gilt	0.1089	30	0.0161	16	0.0353	20
22	Tata Gilt Securities Fund (D)	Gilt	0.1504	31	-0.0188	5	0.0392	21
23	Escorts Gilt Fund (D)	Gilt	0.0507	19	0.0258	17	0.0403	22
24	Chola Gilt Investment Plan (G)	Gilt	0.0772	27	0.0502	27	0.0429	23
25	Taurus Libra Bond	Income	0.0701	26	0.0428	25	0.0540	24
26	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0703	28	0.0589	25
27	Sundaram Income Plus (G)	Income	0.0412	17	0.0099	14	0.0631	26
28	Escorts Gilt Fund (G)	Gilt	0.0532	21	0.0285	18	0.0875	27

Sr. No.	Name of Schemes	Fund-Class	2002-03		2003-04		2004-05	
			Beta	Rank	Beta	Rank	Beta	Rank
29	Taurus Libra Gilt	Gilt	0.0064	12	0.0440	26	0.0962	28
30	Reliance Monthly Income Plan (G)	Income	0.0130	16	-0.0923	2	0.1265	29
31	Escorts Income Bond (G)	Income	-0.1899	1	-0.0388	3	0.2489	30
32	Tata Income Fund (G)	Income	0.0477	18	-0.1051	1	0.2491	31
33	Kotak Tech	Equity	1.0041	54	1.1274	59	0.4575	32
34	Tata Balanced Fund (G)	Balance	0.7697	41	0.6537	38	0.4874	33
35	Tata Young Citizens' Fund	Balance	2.1785	60	0.5532	34	0.5062	34
36	Tata Balanced Fund (D)	Balance	0.7834	42	0.6128	36	0.6192	35
37	J M Balanced Fund (G)	Balance	0.4726	36	0.5234	32	0.6801	36
38	Reliance Banking Fund (D)	Equity	N/A	N/A	0.6291	37	0.6993	37
39	Kotak Balance	Balance	0.4581	35	0.5894	35	0.7073	38
40	Kotak MNC	Equity	0.4131	34	0.5388	33	0.7272	39
41	Reliance Growth Fund (D)	Equity	0.3516	33	0.7781	40	0.7529	40
42	Chola opportunity Fund (G)	Equity	0.9236	53	0.9016	48	0.7708	41
43	Sundaram Balanced Fund (D)	Balance	0.5009	37	0.7663	39	0.7924	42
44	Escorts Balanced Fund (G)	Balance	0.7046	39	0.7824	41	0.8098	43
45	Sundaram Tax Saver 97	ELSS	0.8039	44	0.9901	54	0.8180	44
46	Tata Life Sci. & Tech. Fund (G)	Equity	1.8355	59	1.4377	62	0.8479	45
47	Reliance Growth Fund (G)	Equity	0.8525	49	0.7868	42	0.8608	46
48	Tata Tax Saving Fund	ELSS	0.2658	32	0.9320	52	0.8964	47
49	Reliance Vision Fund (G)	Equity	0.8533	50	0.8304	45	0.9367	48
50	Kotak-30 (G)	Equity	0.8008	43	0.8185	44	0.9476	49
51	Escorts Growth Fund (G)	Equity	0.8467	47	0.8666	46	0.9734	50
52	Taurus Star share	Equity	1.0127	55	0.9417	53	0.9842	51
53	Tata Select Pure Equity Fund (G)	Equity	2.4505	61	0.9157	50	1.0047	52
54	Escorts Tax Plan (D)	ELSS	0.8517	48	1.0233	57	1.0131	53
55	Tata pure Equity Fund (G)	Equity	1.3072	57	0.9001	47	1.0145	54
56	J M Equity Fund (G)	Equity	0.7489	40	0.9106	49	1.0528	55
57	Benchmark Nifty BeES	Equity	0.9121	51	1.0548	58	1.0714	56
58	Sundaram Tax Saver (D)	ELSS	0.8076	46	0.8304	45	1.0852	57
59	Taurus Discovery Fund	Equity	1.4756	58	1.0218	56	1.0874	58
60	Sundaram Growth Fund (D)	Equity	1.0881	56	1.1381	60	1.1041	59
61	Sundaram Select Focus (D)	Equity	0.6307	38	1.0009	55	1.1110	60
62	Benchmark Junior BeES	Equity	N/A	N/A	0.4745	31	1.2128	61
63	J M Basic Fund	Equity	-0.1052	2	1.2454	61	1.2395	62
64	Chola opportunity Fund (QD)	Equity	0.9231	52	0.9170	51	1.3044	63
65	Taurus Libra Tax Shield	ELSS	0.8065	45	0.7980	43	1.3111	64



**Table: 5.27 Systematic Risk ( $\beta$ ) Of Selected Schemes Of Private Sectors Mutual Fund**

Beta Value	No. of schemes		
	2003	2004	2005
< 0	4	8	4
%	6.45	12.31	6.15
0	0	1	1
%	0.00	1.54	1.54
>0 < 1	52	48	47
	83.87	73.85	72.31
>1	6	8	13
%	9.68	12.31	20.00
Total	62	65	65
%	100	100	100

Summary of systematic risk analysis is presented in table no.5.27. It is clear from the data that maximum schemes have positive systematic risk. In the year 2003, only 4 (6.45%) schemes have experience of negative beta, 8 (12.31%) in 2004 and 4 (6.15%) in 2005. It implies that return of such schemes will improve if market return will go down.

Only one scheme, each in 2004 and 2005 having a zero beta value, which indicates that the portfolio returns and market move in same direction. This includes Chola Liquid Fund (G) in 2004 and Chola Freedom Income STF (G) in 2005. 83.87% schemes have moderate systematic risk range in 2003, 73.85 % in 2004, and 72.31 % in 2005.

37 schemes out of 62 , reported their positive beta value less than average beta value of selected schemes under the study period in 2003, whereas in 2004 and 2005 it is seen in 22 schemes and 28 schemes out of 65 schemes respectively. Portfolio return is more risky over the market returns and less volatile in case of 6 schemes (9.68%) in 2003, 8 schemes (12.31%) in 2004 and 13 schemes (20%) in 2005. It is observed that majority of the schemes having beta range of 0 to 1 during they reference years.

## 5.7 RISK ADJUSTED PERFORMANCE MEASURE:

There are few models available to measure the performance of mutual fund with reference to market. Here, an effort is made to evaluate performance

schemes of Indian Private Sector Mutual Fund's selected schemes for the year 2003 to 2005 in term of three major performance evaluation techniques. These evaluation techniques considered return and risk associated with portfolio investment, simultaneously. These techniques include Sharpe's Model, Treynor's Model and Jensen's model. By applying these measures, we can identify the outperforming and underperforming schemes. All these three technique are explained as under:

#### [A]SHARPE'S MEASURE:

William F. Sharpe developed this technique of evaluating the performance of mutual funds in 1966. "Sharpe derived a composite performance measure that considered return and risk simultaneous and used it in evaluating the performance of 34 open-ended mutual funds during period 1944-1963"<sup>10</sup>. This measure indicates the ratio of return generated by the fund over and above risk free return and the total risk associated with it measured by the standard deviation of portfolio return. According to Sharpe, the investors are concerned about total risk associated with fund. So we can say that Sharpe measure reward per unit of total risk. It can be symbolically presented as under:

$$SI = \frac{R_p - R_f}{\sigma_p}$$

Where,

- SI is Sharpe's Index, (Sharpe performance Measure),
- $R_p$  is average return on portfolio,
- $R_f$  is risk free return and
- $\sigma_p$  is Standard Deviation of the portfolio return.

The value of Sharpe measure of individual schemes is preferred to compare with that of market return to judge whether it is inferior or superior. A high & positive ratio indicates superior risk adjusted performance of a schemes or outperformed market or beaten the market and a low & negative Sharpe ratio indicates inadequate performance.

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10. Sharpe William F., "Mutual Fund Performance", Journal of Business, 39 (1966): 119-138.

## 1. MUTUAL FUND COMPANY WISE ANALYSIS UNDER SHARPE MEASURE:

**Table: 5.28 Company - Wise Sharpe's Index (SI) And It's Difference Form BSE Index Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			SI	SI-BMR	SI	SI-BMR	SI	SI-BMR
1	Benchmark Junior BeES	Equity	-5.9446	-5.8030	-9.9888	-10.3773	-3.7954	-3.8616
2	Benchmark Nifty BeES	Income	0.1489	0.2905	-1.2072	-1.5957	-1.2144	-1.2805
3	Chola Freedom Income STF (G)	Equity	1.3446	1.4863	-0.9790	-1.3675	-2.8381	-2.9043
4	Chola Freedom Income STF (HD)	Gilt	1.2378	1.3793	-0.8487	-1.2372	-1.0028	-1.0689
5	Chola Gilt Investment Plan (G)	Income	0.9200	1.0617	-0.4327	-0.8212	-1.1111	-1.1773
6	Chola Liquid Fund (G)	Income	0.1653	0.3070	-0.3037	-0.6922	-0.1055	-0.1717
7	Chola opportunity Fund (G)	Equity	0.1392	0.2809	-0.1757	-0.5642	-0.0327	-0.0989
8	Chola opportunity Fund (QD)	Income	0.3856	0.5272	-0.1343	-0.5228	-0.3459	-0.4121
9	Chola Triple Ace (G)	Income	0.3843	0.5259	-0.1341	-0.5226	-0.1135	-0.1796
10	Escorts Income Bond (G)	MM	0.6319	0.7735	-0.0203	-0.4088	-0.5929	-0.6591
11	Escorts Gilt Fund (D)	Gilt	0.0187	0.1604	-0.0931	-0.4816	-0.3677	-0.4339
12	Escorts Gilt Fund (G)	Income	0.0589	0.2005	-0.0574	-0.4459	-0.3229	-0.3891
13	Escorts Growth Fund (G)	Income	-0.0084	0.1332	-0.0447	-0.4332	-0.2363	-0.3025
14	Escorts Income Plan (D)	Income	N/A	N/A	0.0326	-0.3559	-0.0664	-0.1326
15	Escorts Balanced Fund (G)	Equity	0.2983	0.4400	-0.1322	-0.5207	0.0009	-0.0653
16	Escorts Tax Plan (D)	Gilt	-0.0224	0.1192	0.0461	-0.3424	0.0915	0.0254
17	J M Balanced Fund (G)	Income	0.2392	0.3809	0.0774	-0.3111	0.0620	-0.0041
18	J M Basic Fund	Equity	0.1833	0.3249	0.0843	-0.3042	-0.5315	-0.5977
19	J M Equity Fund (G)	Balance	0.1347	0.2763	0.0909	-0.2976	-0.1977	-0.2639
20	J M Income Fund (G)	Equity	0.1716	0.3132	0.0920	-0.2964	-0.4995	-0.5656
21	Kotak Balance	Balance	-0.0219	0.1197	0.0938	-0.2947	0.0808	0.0146
22	Kotak Bond Deposit Plan (D)	Equity	0.1237	0.2653	0.1105	-0.2780	0.0744	0.0082
23	Kotak Bond Deposit Plan (G)	Equity	0.0381	0.1797	0.1227	-0.2658	0.2070	0.1409
24	Kotak Bond Regular Plan (AD)	Equity	-0.0512	0.0904	0.1285	-0.2600	0.3018	0.2356
25	Kotak Bond Short Term plan (G)	Equity	-0.0224	0.1192	0.1306	-0.2579	-0.0336	-0.0998
26	Kotak Gilt Saving Plan (G)	Gilt	0.1256	0.2673	0.1320	-0.2565	-0.3476	-0.4137
27	Kotak Liquid Regular (D)	Gilt	-0.0110	0.1307	0.1428	-0.2457	0.0774	0.0112
28	Kotak Liquid Regular (G)	Equity	0.2022	0.3439	0.1471	-0.2414	-0.0075	-0.0737
29	Kotak MNC	Balance	0.1425	0.2842	0.1514	-0.2371	-0.3814	-0.4475
30	Kotak Tech	Balance	0.1771	0.3188	0.1544	-0.2341	-0.2818	-0.3480
31	Kotak-30 (G)	Income	0.0392	0.1808	0.1598	-0.2287	0.1743	0.1081
32	Reliance Banking Fund (D)	MM	-0.0656	0.0761	0.1729	-0.2156	-0.0522	-0.1184
33	Reliance Growth Fund (D)	Gilt	-0.0808	0.0608	0.1740	-0.2145	-0.0526	-0.1188
34	Reliance Growth Fund (G)	Equity	0.0697	0.2114	0.1761	-0.2124	0.0091	-0.0571
35	Reliance income Fund (G)	Equity	-0.1584	-0.0167	0.1808	-0.2077	0.1828	0.1166
36	Reli Liq.Fund Treasury Plan(WD)	Equity	0.1610	0.3026	0.1859	-0.2026	-0.3186	-0.3848
37	Reliance Medium Term Fund (G)	Equity	0.1821	0.3237	0.1893	-0.1992	-0.2717	-0.3379
38	Reli. Monthly Income Plan (G)	ELSS	-0.1567	-0.0151	0.1938	-0.1947	0.1388	0.0726
39	Reliance Vision Fund (G)	Income	0.1874	0.3291	0.2070	-0.1815	-0.4257	-0.4919
40	RGSF- Long Term Gilt Retail (G)	ELSS	0.4713	0.6129	0.2115	-0.1770	-0.2940	-0.3602
41	Sundaram Balanced Fund (D)	Income	0.1315	0.2731	0.2153	-0.1732	-0.1853	-0.2514

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			SI	SI-BMR	SI	SI-BMR	SI	SI-BMR
42	Sundaram Gilt Fund (D)	MM	0.0756	0.2173	0.2304	-0.1581	-0.0460	-0.1122
43	Sundaram Gilt Fund (G)	Balance	0.0962	0.2378	0.2316	-0.1569	0.2066	0.1405
44	Sundaram Growth Fund (D)	Equity	-0.0111	0.1306	0.2448	-0.1437	0.1798	0.1136
45	Sundaram Income Plus (D)	Income	0.0667	0.2083	0.2771	-0.1114	0.1083	0.0421
46	Sundaram Income Plus (G)	Equity	0.1297	0.2713	0.2808	-0.1077	0.0325	-0.0337
47	Sundaram Money Fund (G)	ELSS	0.0006	0.1422	0.3172	-0.0713	0.2057	0.1395
48	Sundaram Select Focus (D)	Gilt	0.0559	0.1975	0.3204	-0.0681	0.1549	0.0887
49	Sundaram Tax Saver (D)	Gilt	-0.0617	0.0799	0.3371	-0.0514	0.2325	0.1664
50	Sundaram Tax Saver 97	Income	0.0935	0.2351	0.3404	-0.0481	0.0672	0.0011
51	Tata Balanced Fund (D)	Income	-0.1568	-0.0152	0.3469	-0.0416	0.0530	-0.0131
52	Tata Balanced Fund (G)	ELSS	-0.0020	0.1396	0.3611	-0.0274	0.1232	0.0570
53	Tata Gilt Securities Fund (D)	Income	-0.0373	0.1043	0.3660	-0.0225	0.2180	0.1519
54	Tata Gilt Securities Fund (G)	Balance	0.0032	0.1448	0.3757	-0.0128	0.1476	0.0814
55	Tata Income Fund (G)	Gilt	-0.0078	0.1339	0.3824	-0.0061	0.1669	0.1007
56	Tata Life Sci. & Tech. Fund (G)	Equity	0.1077	0.2493	0.3852	-0.0033	-0.2436	-0.3097
57	Tata pure Equity Fund (G)	MM	-0.1023	0.0393	0.4181	0.0296	0.0610	-0.0052
58	Tata Select Pure Equity Fund (G)	Gilt	-0.0767	0.0649	0.4364	0.0479	0.0834	0.0173
59	Tata Tax Saving Fund	Equity	-0.2128	-0.0712	0.4414	0.0529	0.1182	0.0520
60	Tata Young Citizens' Fund	Income	-0.0289	0.1127	0.4617	0.0732	0.1063	0.0401
61	Taurus Discovery Fund	Balance	N/A	N/A	0.4906	0.1021	0.1549	0.0887
62	Taurus Libra Bond	MM	-0.0509	0.0907	0.5327	0.1442	0.1165	0.0503
63	Taurus Libra Gilt	Equity	0.1745	0.3161	0.5497	0.1612	0.1811	0.1150
64	Taurus Libra Tax Shield	Equity	N/A	N/A	0.5943	0.2058	0.1028	0.0367
65	Taurus Star share	ELSS	0.0671	0.2087	0.6306	0.2421	0.2765	0.2104

**Table:5.29 Company-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of SI Based On BSE Sensex And NAV Return**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Benchmark MF	0	1	2	0	2	0	
	%	0.00	100.00	100.00	0.00	100.00	0.00	66.67
2	Cholamandalam MF	5	2	4	3	2	5	
	%	71.43	28.57	57.14	42.86	28.57	71.43	52.38
3	Escorts MF	5	2	6	1	4	3	
	%	71.43	28.57	85.71	14.29	57.14	42.86	71.43
4	I M MF	2	2	4	0	3	1	
	%	50.00	50.00	100.00	0.00	75.00	25.00	75.00
5	Kotak MF	5	6	7	4	4	7	
	%	45.45	54.55	63.64	36.36	36.36	63.64	48.48
6	Reliance MF	7	0	7	2	5	4	
	%	100.00	0.00	77.78	22.22	55.56	44.44	77.78
7	Sundaram MF	6	4	6	4	2	8	
	%	60.00	40.00	60.00	40.00	20.00	80.00	46.67
8	Tata MF	8	2	10	0	8	2	
	%	80.00	20.00	100.00	0.00	80.00	20.00	86.67
9	Taurus MF	2	3	5	0	4	1	
	%	40.00	60.00	100.00	0.00	80.00	20.00	73.33
	Total	40	22	51	14	34	31	
	%	64.52	35.48	78.46	21.54	52.31	47.69	65.10

**Table: 5.30 Company-wise frequency distribution of selected schemes according to positive & negative values of SI-BMR based on BSE Sensex and NAV return**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Benchmark MF	0	1	1	1	1	1	
	%	0.00	100.00	50.00	50.00	50.00	50.00	33.33
2	Cholamandalam MF	5	2	0	7	2	5	
	%	71.43	28.57	0.00	100.00	28.57	71.43	33.33
3	Escorts MF	7	0	0	7	3	4	
	%	100.00	0.00	0.00	100.00	42.86	57.14	47.62
4	J M MF	4	0	2	2	1	3	
	%	100.00	0.00	50.00	50.00	25.00	75.00	58.33
5	Kotak MF	9	2	2	9	4	7	
	%	81.82	18.18	18.18	81.82	36.36	63.64	45.45
6	Reliance MF	7	0	3	6	4	5	
	%	100.00	0.00	33.33	66.67	44.44	55.56	59.26
7	Sundaram MF	10	0	1	9	2	8	
	%	100.00	0.00	10.00	90.00	20.00	80.00	43.33
8	Tata MF	10	0	0	10	7	3	
	%	100.00	0.00	0.00	100.00	70.00	30.00	56.67
9	Taurus MF	5	0	0	5	4	1	
	%	100.00	0.00	0.00	100.00	80.00	20.00	60.00
	Total	57	5	9	56	28	37	
	%	91.94	8.06	13.85	86.15	43.08	56.92	49.62

Table 5.28, 5.29 and 5.30 which disclose the company wise Sharpe Index and differential from BSE Sensex (Benchmark return) and weekly average NAV return of selected schemes as well as frequency distribution in regards to positive and negative performance of SI(Sharpe Index) and SI-BMR (difference between Sharpe index and benchmark return). “A higher positive value indicates successful portfolio management to augment return in investment while the reverse holds in case of negative differential return”<sup>11</sup>.

The positive benchmark reveals that the performance of schemes is better or outperforming than the stock market and negative benchmark indicate that performance of scheme is inferior to that of stock market. “SI is negative while difference between SI and BMR positive, it implies that the additional return on market over the risk free return is much less than the additional return on mutual fund schemes over the risk free return.”<sup>12</sup>

The table shows that Benchmark Juniors has positive SI and SI-BMR, which indicate its better performance than security market during the year 2004 & 2005. The result totally reverse in incase of Benchmark Nifty BeES. Benchmark Nifty BeES has inferior return as compared to benchmark return

11. Ramesh Chandra, Performance Appraisal of Mutual Funds in India, pp. 90, New Delhi, 2002.

12. M.S. Turan and B.S. Bodla, Performance Appraisal of Mutual Funds, First Edition, 2001, pp.109.

through out the study period continuously, even though it earns positive SI in 2004 and 2005. Benchmark mutual fund get 66.67 % success to achieve positive SI, while 33.33% schemes reported their higher return than stock market in term of overall performance of selected schemes.

In case of Cholamandalam mutual fund 5 (71.43%) out of 7 schemes, 4(57.14%) and 2 (28.57%) schemes have positive SI during the year 2003, 2004 and 2005 respectively. Chola Liquid Fund (G) has very high SI (2003) as well as lowest SI (2004) under the reference year, which indicates superior risk adjusted performance of a scheme. 5 schemes in 2003 and 2 schemes in 2005 have better performance as compared to security market. Overall, positive SI percentage is 52.38 and percentage of superior return than security market is 33.33.

Among the schemes of Escorts Mutual Fund, Escorts Income Plan (D) has excessive return in 2003 and afterwards its performance goes down continuously. It falls from first rank to last rank in the year 2005 among 7 schemes of such company. SI of Escorts Mutual Fund's selected schemes are 71.43 %, 85.71% and 57.14% positive performance in 2003, 2004 and 2005 respectively. The Escorts Growth Fund (G) and Escorts Income Bond (G) have reported continuously positive performance throughout the reference year. Not a single scheme succeeded to provide better performance than benchmark return continuously three years. Overall period of three years 71.43 % schemes have positive SI while 47.62 % have superior performance to security market.

Regarding the J M mutual funds schemes, 2 schemes (50%) has reported their negative SI in 2003 but in succeeding year turn into positive SI. In 2004 & 2005, 2 selected schemes have well performed which we can see based on their improved positive SI. J M Equity Fund (G) achieved superior result over stock market continuously, even in the year 2003 having negative SI. Success percentage in term of positive SI of this company is 75 % and better performance over stock market is 58.33 % as regard to overall period.

The lowest SI in case of Kotak Mutual Fund includes Kotak Liquid-D (-9.9888 %) and highest SI for 1.3446% in case of Kotak Regular (G). Kotak Balance and Kotak Bond Regular (AD) have negative SI in 2003 while Difference between SI and BMR is positive; implying that the additional return on market over the risk free return is much less, than the additional return on mutual funds schemes over the risk free return. Kotak -30 has maintained superior result over benchmark

return continuously three year irrespective of negative SI in 2003. While considering combined positive performance of three years, it shows that only 48.48 % SI and 45.45% had better return than stock market.

100% positive performance in term of SI seen incase of Reliance Mutual Funds in 2003, 77.78 % in 2004 and 55.56% in 2005. Thus, the performance of selected schemes in term of Sharp's measure gradually and continuously declined from the year 2003 to 2005. Overall positive percentage of SI is 77.78 % and outperformed to benchmark is 59.26 %. As compared to 2003, Reliance Liquid Fund Treasury Plan (WD) and Reliance Monthly Income Plan (G) turned into negative performance in 2004. 5 out of 9 schemes registered their positive SI and 4 schemes have positive SI-BMR in 2005. Reliance Growth Fund (G) and Reliance Vision Fund (G) have achieved positive SI as well as better performance than stock market through the reference years.

With Reference to Sundaram Mutual Fund, 6(60%) out of 10 schemes enjoyed positive SI in 2003 and 2004. But in the year 2005, downfall has been seen among all selected schemes in term of SI except Sundaram Growth Fund (D) and Sundaram Tax Saver 97. Sundaram Money Fund (G) has excessive positive SI that is 0.9200 % under the reference years. As compared to overall positive SI of 9 mutual funds it is at last rank and in term of SI-BMR stood 7<sup>th</sup> rank.

Tata Mutual Fund has register 80%, 100% and 80% positive performance in term of Sharpe measure in the year 2003, 2004 and 2005 respectively. 5 out of 10 schemes declared their positive return in term of SI since 2003 to 2005 which is highest among all 9 elected mutual funds. This includes Tata Balance fund (D), Tata Balance fund (G), Tata Income Fund (G), Tata Life Sci. & Tech. G) and Tata Select Pure Equity Fund (G). All these have inferior return in 2004 as compared to stock market. Tata Mutual Fund has success up to 86.67 % in reference to overall positive SI which highest among all selected mutual funds. 56.67 % have better performance than stock market in reference to overall period.

The selected scheme of Taurus Mutual Fund indicates 73.33 % overall positive SI and 60 % superior return than Security market. 5 out of 3 have negative SI in 2003. It is significant to note that all schemes reported positive SI-BMR in 2003, it implies that successful portfolio management to augment return

in investment while the reverse holds in case of negative differential return. In 2004, all Schemes enjoyed positive SI but bearing a negative differential return.

## 2. FUND CLASS WISE ANALYSIS UNDER SHARPE MEASURE:

Table 5.30, 5.31 and 5.32 depicts performance return of schemes according to fund –class wise based on Sharpe measure, difference between SI & BMR and frequency distribution according to positive-negative performance.

**Table: 5.31 Fund -Wise Sharpe's Index (SI) And It's Difference Form BSE Index  
Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04			2004-05
			SI	SI-BMR	SI	SI-BMR	SI	SI-BMR
1	Escorts Balanced Fund (G)	Balance	-5.9446	-5.8030	-9.9888	-10.3773	-3 7954	-3 8616
2	J M Balanced Fund (G)	Balance	1.3446	1.4863	-0.9790	-1.3675	-2 8381	-2.9043
3	Kotak Balance	Balance	0 1489	0 2905	-1.2072	-1.5957	-1 2144	-1.2805
4	Sundaram Balanced Fund (D)	Balance	0.9200	1.0617	-0.4327	-0.8212	-1.1111	-1.1773
5	Tata Balanced Fund (D)	Balance	1.2378	1.3793	-0.8487	-1.2372	-1 0028	-1 0689
6	Tata Balanced Fund (G)	Balance	0.6319	0.7735	-0.0203	-0.4088	-0 5929	-0.6591
7	Tata Young Citizens' Fund	Balance	0.1833	0.3249	0.0843	-0.3042	-0.5315	-0.5977
8	Escorts Tax Plan (D)	ELSS	0.1716	0.3132	0.0920	-0 2964	-0.4995	-0.5656
9	Sundaram Tax Saver (D)	ELSS	0.1874	0.3291	0 2070	-0.1815	-0.4257	-0.4919
10	Sundaram Tax Saver 97	ELSS	0.1425	0.2842	0.1514	-0.2371	-0.3814	-0.4475
11	Tata Tax Saving Fund	ELSS	0.0187	0.1604	-0 0931	-0.4816	-0 3677	-0.4339
12	Taurus Libra Tax Shield	ELSS	0.1256	0 2673	0.1320	-0 2565	-0 3476	-0.4137
13	Benchmark Junior BeES	Equity	0 3856	0.5272	-0.1343	-0.5228	-0.3459	-0 4121
14	Benchmark Nifty BeES	Equity	0 0589	0.2005	-0 0574	-0.4459	-0.3229	-0.3891
15	Chola opportunity Fund (G)	Equity	0.1610	0.3026	0.1859	-0 2026	-0.3186	-0.3848
16	Chola opportunity Fund (QD)	Equity	0.4713	0.6129	0.2115	-0.1770	-0.2940	-0.3602
17	Escorts Income Plan (D)	Equity	0.1771	0.3188	0.1544	-0.2341	-0.2818	-0.3480
18	J M Basic Fund	Equity	0.1821	0.3237	0 1893	-0.1992	-0.2717	-0.3379
19	J M Equity Fund (G)	Equity	0.1077	0.2493	0 3852	-0.0033	-0.2436	-0.3097
20	Kotak MNC	Equity	-0.0084	0 1332	-0.0447	-0.4332	-0 2363	-0.3025
21	Kotak Tech	Equity	0.1347	0.2763	0.0909	-0.2976	-0 1977	-0.2639
22	Kotak-30 (G)	Equity	0.1315	0 2731	0.2153	-0 1732	-0.1853	-0 2514
23	Reliance Banking Fund (D)	Equity	0 3843	0.5259	-0.1341	-0.5226	-0.1135	-0.1796
24	Reliance Growth Fund (D)	Equity	0.1653	0.3070	-0.3037	-0.6922	-0 1055	-0.1717
25	Reliance Growth Fund (G)	Equity	N/A	N/A	0 0326	-0.3559	-0.0664	-0.1326
26	Reliance Vision Fund (G)	Equity	-0.0808	0.0608	0.1740	-0.2145	-0.0526	-0.1188
27	Sundaram Growth Fund (D)	Equity	-0 0656	0.0761	0.1729	-0.2156	-0.0522	-0.1184



Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04			2004-05
			SI	SI-BMR	SI	SI-BMR	SI	SI-BMR
28	Sundaram Select Focus (D)	Equity	0 0756	0 2173	0 2304	-0.1581	-0 0460	-0.1122
29	Tata Life Sci. & Tech Fund (G)	Equity	-0 0224	0.1192	0.1306	-0 2579	-0.0336	-0 0998
30	Tata pure Equity Fund (G)	Equity	0 1392	0 2809	-0 1757	-0.5642	-0 0327	-0 0989
31	Tata Select Pure Equity Fund (G)	Equity	0 2022	0 3439	0 1471	-0 2414	-0.0075	-0.0737
32	Taurus Discovery Fund	Equity	0 2983	0 4400	-0.1322	-0.5207	0 0009	-0.0653
33	Taurus Star share	Equity	0.0697	0.2114	0 1761	-0.2124	0.0091	-0.0571
34	Chola Gilt Investment Plan (G)	Gilt	0.1297	0.2713	0 2808	-0.1077	0 0325	-0.0337
35	Escorts Gilt Fund (D)	Gilt	-0 1568	-0.0152	0.3469	-0 0416	0.0530	-0.0131
36	Escorts Gilt Fund (G)	Gilt	-0.1023	0 0393	0.4181	0.0296	0.0610	-0.0052
37	Kotak Gilt Saving Plan (G)	Gilt	0 2392	0 3809	0.0774	-0.3111	0.0620	-0.0041
38	RGSF- Long Term Gilt Retail (G)	Gilt	0 0935	0 2351	0.3404	-0.0481	0.0672	0.0011
39	Sundaram Gilt Fund (D)	Gilt	0 1237	0 2653	0 1105	-0.2780	0.0744	0.0082
40	Sundaram Gilt Fund (G)	Gilt	-0.0110	0 1307	0 1428	-0.2457	0.0774	0 0112
41	Tata Gilt Securities Fund (D)	Gilt	-0.0219	0 1197	0 0938	-0.2947	0.0808	0.0146
42	Tata Gilt Securities Fund (G)	Gilt	-0.0767	0 0649	0 4364	0 0479	0.0834	0.0173
43	Taurus Libra Gilt	Gilt	-0.0224	0.1192	0 0461	-0.3424	0.0915	0.0254
44	Chola Freedom Income STF (G)	Income	N/A	N/A	0 5943	0 2058	0.1028	0.0367
45	Chola Freedom Income STF (HD)	Income	-0.0289	0.1127	0 4617	0 0732	0.1063	0.0401
46	Chola Triple Ace (G)	Income	0.0667	0.2083	0 2771	-0.1114	0 1083	0.0421
47	Escorts Growth Fund (G)	Income	-0.0509	0.0907	0.5327	0.1442	0.1165	0.0503
48	Escorts Income Bond (G)	Income	-0 2128	-0.0712	0.4414	0.0529	0 1182	0.0520
49	J M Income Fund (G)	Income	-0 0020	0.1396	0.3611	-0 0274	0.1232	0.0570
50	Kotak Bond Deposit Plan (D)	Income	-0.1567	-0 0151	0 1938	-0.1947	0 1388	0.0726
51	Kotak Bond Deposit Plan (G)	Income	0 0032	0.1448	0 3757	-0.0128	0.1476	0.0814
52	Kotak Bond Regular Plan (AD)	Income	N/A	N/A	0 4906	0.1021	0.1549	0.0887
53	Kotak Bond Short Term plan (G)	Income	0.0559	0 1975	0.3204	-0.0681	0.1549	0.0887
54	Reliance income Fund (G)	Income	-0 0078	0 1339	0.3824	-0.0061	0.1669	0.1007
55	Reliance Medium Term Fund (G)	Income	0.0392	0.1808	0.1598	-0 2287	0.1743	0.1081
56	Reliance Monthly Income Plan (G)	Income	-0.0111	0.1306	0.2448	-0 1437	0.1798	0.1136
57	Sundaram Income Plus (D)	Income	0 1745	0.3161	0.5497	0.1612	0.1811	0.1150
58	Sundaram Income Plus (G)	Income	-0.1584	-0 0167	0 1808	-0.2077	0.1828	0.1166
59	Tata Income Fund (G)	Income	0.0006	0 1422	0.3172	-0.0713	0.2057	0.1395
60	Taurus Libra Bond	Income	0.0962	0.2378	0.2316	-0 1569	0 2066	0.1405
61	Chola Liquid Fund (G)	MM	0.0381	0.1797	0 1227	-0 2658	0 2070	0.1409
62	Kotak Liquid Regular (D)	MM	-0.0373	0.1043	0.3660	-0.0225	0.2180	0.1519
63	Kotak Liquid Regular (G)	MM	-0.0617	0.0799	0.3371	-0.0514	0.2325	0.1664
64	Reli.Liq.Fund Treasury Plan (WD)	MM	0 0671	0.2087	0.6306	0.2421	0.2765	0.2104
65	Sundaram Money Fund (G)	MM	-0.0512	0.0904	0.1285	-0 2600	0.3018	0.2356

**Table: 5.32 Fund Class-Wise Frequency Distribution Of Selected Schemes  
According To Positive & Negative Values Of SI Based On  
BSE Sensex And NAV Return**

Sr. No.	Fund Class	2002-03		2003-04		2004-05		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	3	4	7	0	6	1	
	%	42.86	57.14	100.00	0.00	85.71	14.29	76.19
2	ELSS	1	4	5	0	4	1	
	%	20.00	80.00	100.00	0.00	80.00	20.00	66.67
4	Equity	9	10	20	1	19	2	
	%	47.37	52.63	95.24	4.76	90.48	9.52	77.69
5	Gilt	8	1	7	3	0	10	
	%	88.89	11.11	70.00	30.00	0.00	100.00	52.96
6	Income	15	2	12	5	5	12	
	%	88.24	11.76	70.59	29.41	29.41	70.59	62.75
7	Money Market	4	1	0	5	0	5	
	%	80.00	20.00	0.00	100.00	0.00	100.00	26.67
8	Total	40	22	51	14	34	31	
	%	64.52	35.48	78.46	21.54	52.31	47.69	65.10

**Table: 5.33 Fund Class-Wise Frequency Distribution Of Selected Schemes  
According To Positive & Negative Values Of SI-BMR Based On  
BSE Sensex And NAV Return**

Sr. No.	Fund Class	2002-03		2003-04		2004-05		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	7	0	1	6	5	2	
	%	100.00	0.00	14.29	85.71	71.43	28.57	61.90
2	ELSS	5	0	1	4	4	1	
	%	100.00	0.00	20.00	80.00	80.00	20.00	66.67
4	Equity	15	4	7	14	17	4	
	%	78.95	21.05	33.33	66.67	80.95	19.05	64.41
5	Gilt	9	0	0	10	0	10	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
6	Income	17	0	0	17	2	15	
	%	100.00	0.00	0.00	100.00	11.76	88.24	37.25
7	Money Market	4	1	0	5	0	5	
	%	80.00	20.00	0.00	100.00	0.00	100.00	26.67
8	Total	57	5	9	56	28	37	
	%	91.94	8.06	13.85	86.15	43.08	56.92	49.62

**i) BALANCE SCHEMES:**

Incase of balance schemes, 42.86 % schemes have out performed in 2003, which goes up to the 100% in 2004 and 85.71% in the year 2005. Whereas

100% in 2003, 14.29 % in 2004 and 71.43 % in 2005 outperformed as compared to security market. The J M Balanced fund-G(-0.1023%) has lowest SI in 2003 which has achieved highest result in term of SI in 2004. 3 out of 7 schemes earned continuously positive SI from 2003 to 2005. However, all this failed to provide superior return than stock market during these three years. 4 schemes additional return over risk free return is higher than market return over the risk free return in 2003. Overall 76.19 % balance schemes have good result in term of SI and 61.90 % schemes declared better result than benchmark return.

## **ii) ELSS SCHEMES:**

The positive performances of ELSS remain from 20 % to 100 % through the reference years. All 5 schemes performed better than benchmark return. Out of these 4 schemes have additional return over risk free return higher than that of benchmark return in 2003. The result observed reverse in the year 2004 in term of both SI and SI-BMR. Improvements were observed in term of SI in the year 2004 and 2005 compared to year 2003. The overall success percentage to provide SI and superior return to benchmark is 66.67%.

## **iii) EQUITY SCHEMES:**

It is significant to note that equity oriented schemes performance gradually improved from 20% to 100% during the year 2003 to 2004 while 20 % declined from 2004 to 2005. Escorts Income Plan-D (0.6319%), Reliance Growth Fund-G (0.6306%) and Kotak Tech (0.3018%) have reported highest performance throughout the study period respectively. 6 out of 21 schemes get success to provide continuous positive SI for three years. Whereas in few schemes this consistency seen for two years. 4 schemes return is higher over risk free return than market return. In terms of overall positive SI and superior performance to benchmark return, equity schemes held first rank among all 7 categories. It is because these schemes more or less goes with market, but here fund manager successfully managed portfolio which added to return.

## **iv) GILT SCHEMES:**

About Gilt Schemes, 11.11%, 30% and 100 % schemes have negative performance recorded in 2003, 2004 and 2005 respectively. Upward trend seen in terms of negative performance of all gilt schemes. When compared to benchmark

return, all gilt schemes proved their superiority over stock market in the 2003. The opposite results observed in 2004 and 2005. It may be due to interest rate on various government securities decreased during the year 2004 and 2005. The overall performance of SI is 52.96 % while return more than market 33.33 % of its selected schemes.

#### v) INCOME SCHEMES:

Positive performance of Income schemes were seen in the range of 29.41 % to 88.24 %. Escorts Growth Fund (G) of income categories has constantly positive SI. In case of majority of the schemes, result may be positive or negative seen for two years. Further the data indicate that there were few schemes having negative performance in term of SI even though they earned higher return than benchmark return. It means additional return over risk free return of schemes is higher than that of market return. Overall positive performance is 62.75 % and superior performance over market is 37.25 % in case of income schemes.

#### vi) MONEY MARKET SCHEMES:

4 (80%) out of 5 money market oriented schemes outperformed with positive return in term of SI and proved their superiority over the benchmark return by presenting positive differential performance in 2003. Whereas all money market schemes performance seen inferior in 2004 & 2005 . Not a single scheme of money market has superior performance during 2004 & 2005. In year 2003, Money Market schemes are considered low in their risk perception as compared to other schemes in the year 2004 and 2005. In terms of overall positive SI and better performance than security market, it stood at bottom rank among all categories.

Analysis of mutual funds schemes according to sharpe measure presented in the following summary table.

**Table: 5.34A Sharpe's Performance Measure Of Indian Private Sectors Mutual Funds Selected Schemes Of 2003**

Sharpe Measure	No. of schemes	%
$\leq -0.23$	1	1.61
$> -0.23 \leq 0$	21	33.87
$> 0 \leq 1$	38	61.29
$> 1$	2	3.23
Total	62	100.00

Market Return = -0.23 %

**Table: 5.34B Sharpe's Performance Measure Of Indian Private Sectors Mutual Funds Selected Schemes Of 2004**

Sharpe Measure	No. of schemes	%
<0	14	21.54
≥0 <1	51	78.46
≥1 <1.17	0	0.00
≥1.17	0	0.00
Total	65	100.00

Market Return = 1.17 %

**Table: 5.34C Sharpe's Performance Measure Of Indian Private Sectors Mutual Funds Selected Schemes Of 2005**

Sharpe Measure	No. of schemes	%
<0	31	47.69
≥ 0 < 0.27	32	49.23
≥ 0.27 <1	2	3.08
≥1	0	0.00
Total	65	100.00

Market Return = 0.27%

Table 5.34A, 5.34B and 5.34C presents the Sharpe's performance measure of selected schemes for examination. It indicate that one (1.67%) scheme i.e. Kotak Liquid Regular (D) has reported their performance below the market return in terms of Sharpe's measure, remaining 98.33% having experienced superior performance in 2003. Here market return means average weekly market return based on BSE Sensex. However, in the case of 33.87% superior fund's performance has been negative. 61.29% schemes experienced to have Sharpe's value below one, while 3.23 % schemes have above one in 2003. The top schemes include Chola Liquid Fund (G) and Kotak Liquid Regular (G). About 2004, not a single scheme is superior to average weekly market return. In case 14 schemes Sharpe's value is negative and 51 schemes return in term of Sharp's measure is less than one. Market return in 2005 is 0.27% observed, based on BSE Sensex. 96.92 % experienced of inferior performance over market return in 2005. Among this 47.69 %, inferior performance schemes are negative in term of Sharpe's value. Only 3.8 % (2) schemes observed better performance than market return, these are Kotak Tech and Reliance Growth (G). Thus, majority of the sampled funds have outperformed the market portfolio in term of Sharpe's measure in 2003, while in 2004 and 2005; majority schemes underperformed the market portfolio.

With a view to examine the effectiveness of portfolio management practices, empirically differential returns in term of Sharpe's measure of performance are presented in table 5.35.

**Table: 5.35 Sharpe's Differential Return Of Selected Schemes.**

Differential Return	No. of Schemes & Percentage		
	2003	2004	2005
≤ 0	5 (8.06)	56 (86.15)	37 (56.92)
>0 ≤1	54 (87.10)	9 (13.85)	28 (43.08)
>1	3 (4.84)	0 (00.00)	0 (00.00)
Total	62 (100)	65 (100)	65 (100)

The data shows that 8.06 %, 86.15% and 56.92 % schemes have experience negative differential return in 2003, 2004 and 2005 respectively. It implies that management of this portfolio has lost returns by exposing the portfolio in different level of risk as compared to Capital Assets Price Model (CAPM) framework. Only 3 schemes have more than one differential return through out the study period.

#### **[B]TREYNOR'S MEASURE:**

Jack Treynor's has developed this measure to evaluate funds performance on the basis of market efficiency. "The Treynor measure was the first risk-adjusted performance to be known and used on a widespread basis. Treynor builds his model on the assumptions of CAPM using the security market as a benchmark"<sup>13</sup>It is ratio which indicates return on portfolio investment in over of the risk free rate of return to the volatility of return as measured by Beta Coefficient of return. It is also known as reward to volatility ratio. It is difference between portfolio return and risk free return. This technique measure the risk premium related to the systematic risk associated with return of portfolio with the assumption that unsystematic risk can be eliminated by diversification and only systematic risk (Market risk) to be measured. Symbolically represented as under:

13 Prof. Dr. Josef Zechner, "Perforamance Evaluation", November 1999, pp 5.

$$TM = \frac{R_p - R_f}{\beta_p}$$

Where,

TM is Treynor's Performance Measure,

$R_p$  is weekly average return on portfolio,

$R_f$  is weekly average risk free rate of return and

$\beta_p$  is Beta value of portfolio returns.

An effort is made to evaluate performance of selected schemes in term of Treynor's measure company wise and fund-class wise. Table 5.33 to 5.39c resents the results on Treynor's measure in relation to company wise and fund class wise of sample schemes of Indian private sectors mutual funds. It also shows differential return of Treynor's measure. Treynor's differential return is a difference between Treynor's risks adjusted measure and Benchmark return of stock market. According to Treynor's measure, additional average return of market over average risk free return is the benchmark i.e. Avg.Rm – Avg.Rp. Greater the value of Treynor's measure over the benchmark return inciacates superior performance of the fund.

## 1. COMPANY WISE ANALYSIS UNDER TREYNOR'S MEASURE:

Table 5.36, 5.37 and 5.38 indicates company-wise Treynor's Measure (TM) and it's difference form BSE index (TM-BMR) based on BSE Sensex and NAV return of selected schemes.

**Table: 5.36 Company - Wise Treynor's Measure (TM) And It's Difference Form BSE Index (TM-BMR) Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			TM	TM-MR	TM	TM-MR	TM	TM-MR
1	Benchmark Junior BeES	Equity	N/A	N/A	0 0383	-1.0301	0.0033	-0.1681
2	Benchmark Nifty BeES	Equity	-0.0039	0.3261	0 0100	-1.0583	0.0014	-0 1699
3	Chola Freedom Income STF (G)	Income	0.0649	0.3949	-0.0173	-1.0857	-74.6933	-74.8647
4	Chola Freedom Income STF(HD)	income	0.0583	0.3883	0.0341	-1.0343	0.3498	0.1784
5	Chola Gilt Investment Plan (G)	Gilt	0.0123	0.3423	0.0374	-1 0310	-0 0256	-0.1970
6	Chola Liquid Fund (G)	MM	0.6650	0.9950	2.7284	1.6601	-0.4116	-0.5830
7	Chola Opportunity Fund (G)	Equity	-0 0047	0.3253	0 0068	-1.0615	0.0058	-0.1656
8	Chola Opportunity Fund (QD)	Equity	-0.0047	0.3253	0 0072	-1.0612	0.0071	-0.1643
9	Chola Triple Ace (G)	Income	0.0144	0.3444	0.0154	-1.0530	-0.0378	-0.2092
10	Escorts Balanced Fund (G)	Balance	-0.0001	0.3299	0.0117	-1.0567	0.0038	-0.1675
11	Escorts Gilt Fund (D)	Gilt	0.0259	0.3559	0.0184	-1.0500	-0.0277	-0.1991
12	Escorts Gilt Fund (G)	Gilt	0 0155	0.3455	0.0164	-1.0519	-0 0127	-0.1841
13	Escorts Growth Fund (G)	Income	0.0001	0.3301	0.0115	-1.0568	0.0045	-0.1669
14	Escorts Income Bond (G)	Income	-0 0580	0.2720	-0.0470	-1.1153	0.0033	-0 1681

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			TM	TM-MR	TM	TM-MR	TM	TM-MR
15	Escorts Income Plan (D)	Equity	0.2794	0 6094	-0.0596	-1.1279	-0 1273	-0.2987
16	Escorts Tax Plan (D)	ELSS	-0.0003	0.3297	0 0122	-1.0562	0 0024	-0.1690
17	J M Balanced Fund (G)	Balance	-0 0029	0.3271	0.0131	-1.0553	0.0017	-0 1697
18	J M Basic Fund	Equity	-0 1495	0.1805	0.0293	-1 0391	0.0010	-0.1703
19	J M Equity Fund (G)	Equity	-0.0008	0 3292	0.0142	-1 0542	0.0033	-0.1681
20	J M Income Fund (G)	Income	0 0159	0 3459	0 0218	-1.0466	-0.0312	-0 2026
21	Kotak Balance	Balance	-0.0011	0.3289	0.0125	-1.0558	0.0070	-0 1644
22	Kotak Bond Deposit Plan (D)	Income	0.0187	0.3487	0 0421	-1.0263	-0.0396	-0 2110
23	Kotak Bond Deposit Plan (G)	Income	0.0187	0.3487	0 0220	-1.0464	-0.0321	-0 2035
24	Kotak Bond Regular Plan (AD)	Income	-0.0011	0.3289	-0.0035	-1.0719	-0.0279	-0.1993
25	Kotak Bond Short Term plan (G)	Income	0.0686	0.3986	0.0257	-1.0427	-0.0273	-0.1987
26	Kotak Gilt Saving Plan (G)	Gilt	0.0412	0.3712	0.2303	-0.8381	-0.0156	-0.1869
27	Kotak Liquid Regular (D)	MM	-1 8363	-1 5063	-1.7635	-2.8319	-4.0396	-4 2109
28	Kotak Liquid Regular (G)	MM	1 4831	1.8131	-0.7041	-1 7725	-0.7318	-0.9031
29	Kotak MNC	Equity	-0 0084	0.3216	0.0234	-1 0449	0.0083	-0.1631
30	Kotak Tech	Equity	-0.0016	0 3284	0.0053	-1.0631	0.0139	-0.1575
31	Kotak-30 (G)	Equity	-0 0013	0 3287	0.0169	-1.0515	0.0040	-0.1674
32	Reli. Liq.Fund Treasury Plan (WD)	MM	0 3700	0 7000	-0.1146	-1.1829	-0.2493	-0.4207
33	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0235	-1 0448	0.0079	-0.1635
34	Reliance Growth Fund (D)	Equity	0 0127	0 3427	0.0220	-1 0463	0.0079	-0.1635
35	Reliance Growth Fund (G)	Equity	0 0021	0 3321	0.0220	-1 0464	0 0091	-0.1623
36	Reliance Income Fund (G)	Income	0 0139	0 3439	0.0241	-1 0443	-0.0193	-0.1906
37	Reliance Medium Term Fund (G)	Income	14.4521	14.7821	0.0089	-1.0594	-0.1314	-0.3028
38	Reli. Monthly Income Plan (G)	Income	0.0602	0 3902	0.0584	-1.0100	0.0000	-0.1714
39	Reliance Vision Fund (G)	Equity	0 0056	0.3356	0.0187	-1 0497	0.0054	-0.1660
40	RGSF-Long Term Gilt Retail (G)	Gilt	N/A	N/A	0.0036	-1.0648	-0.0066	-0.1780
41	Sundaram Balanced Fund (D)	Balance	-0.0017	0.3283	0.0122	-1.0562	-0.0028	-0.1741
42	Sundaram Gilt Fund (D)	Gilt	-0 0038	0.3262	-0.0335	-1.1019	0.0724	-0.0990
43	Sundaram Gilt Fund (G)	Gilt	0.0156	0.3456	0.0299	-1.0385	0 0552	-0.1162
44	Sundaram Growth Fund (D)	Equity	-0.0009	0.3291	0.0029	-1.0655	0.0033	-0.1681
45	Sundaram Income Plus (D)	Income	0 0125	0 3425	1 1001	0.0317	0.0130	-0 1584
46	Sundaram Income Plus (G)	Income	0 0232	0.3532	0.0253	-1.0431	-0.0026	-0.1740
47	Sundaram Money Fund (G)	MM	-0.2993	0 0307	-0.6253	-1.6937	-0.1858	-0.3572
48	Sundaram Select Focus (D)	Equity	0 0024	0 3324	0.0137	-1 0547	-0.0023	-0.1737
49	Sundaram Tax Saver (D)	ELSS	-0.0021	0.3279	0.0139	-1.0545	-0.0436	-0.2149
50	Sundaram Tax Saver 97	ELSS	-0.0020	0.3280	0.0147	-1.0537	0 0027	-0.1687
51	Tata Balanced Fund (D)	Balance	0.0058	0.3358	0.0170	-1.0513	0 0058	-0.1656
52	Tata Balanced Fund (G)	Balance	0.0031	0.3331	0.0140	-1.0544	0.0095	-0.1619
53	Tata Gilt Securities Fund (D)	Gilt	0.0215	0.3515	-0.0977	-1.1661	-0 0572	-0.2286
54	Tata Gilt Securities Fund (G)	Gilt	0.0162	0.3462	0 3036	-0.7648	-0.0528	-0 2241
55	Tata Income Fund (G)	Income	0.0097	0 3397	-0.0217	-1.0901	0.0020	-0.1694
56	Tata Life Sci. & Tech. Fund (G)	Equity	0.0029	0.3329	0.0129	-1.0554	0.0085	-0.1628
57	Tata pure Equity Fund (G)	Equity	-0 0007	0.3293	0.0186	-1 0498	0.0055	-0.1659
58	Tata Select Pure Equity Fund (G)	Equity	0.0022	0.3322	0.0172	-1.0511	0.0057	-0.1656
59	Tata Tax Saving Fund	ELSS	-0 0021	0.3279	0.0153	-1.0531	0.0052	-0 1662
60	Tata Young Citizens' Fund	Balance	0.0734	0.4034	0.0069	-1.0614	0.0023	-0.1691
61	Taurus Discovery Fund	Equity	0.0315	0.3615	0.0091	-1.0593	0 0091	-0.1623
62	Taurus Libra Bond	Income	-0 0039	0.3261	0 0061	-1.0623	0.0174	-0.1540
63	Taurus Libra Gilt	Gilt	-0.0148	0.3152	0 0163	-1.0521	-0.0084	-0.1797
64	Taurus Libra Tax Shield	ELSS	0.0000	0 3300	0 0184	-1 0499	0.0107	-0.1607
65	Taurus Star share	Equity	-0.0019	0.3281	0 0136	-1.0548	0.0103	-0.1611



**Table: 5.37 Company-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of TM Based On BSE Sensex And NAV Return**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positiv	Negativ	Positiv	Negativ	Positiv	Negativ	
1	Benchmark MF	0	1	2	0	2	0	
	%	0.00	100.00	100.00	0.00	100.00	0.00	66.67
2	Cholamandalam MF	5	2	6	1	3	4	
	%	71.43	28.57	85.71	14.29	42.86	57.14	66.67
3	Escorts MF	4	3	5	2	4	3	
	%	57.14	42.86	71.43	28.57	57.14	42.86	61.90
4	J M MF	1	3	4	0	3	1	
	%	25.00	75.00	100.00	0.00	75.00	25.00	66.67
5	Kotak MF	5	6	8	3	4	7	
	%	45.45	54.55	72.73	27.27	36.36	63.64	51.52
6	Reliance MF	7	0	8	1	5	4	
	%	100.00	0.00	88.89	11.11	55.56	44.44	81.48
7	Sundaram MF	4	6	8	2	5	5	
	%	40.00	60.00	80.00	20.00	50.00	50.00	56.67
8	Tata MF	8	2	8	2	8	2	
	%	80.00	20.00	80.00	20.00	80.00	20.00	80.00
9	Taurus MF	2	3	5	0	4	1	
	%	40.00	60.00	100.00	0.00	80.00	20.00	73.33
	Total	36	26	54	11	38	27	
	%	58.06	41.94	83.08	16.92	58.46	41.54	66.53

**Table: 5.38 Company-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of TM-BMR Based On BSE Sensex And NAV Return**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Benchmark MF	1	0	0	2	0	2	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
2	Cholamandalam MF	7	0	1	6	1	6	
	%	100.00	0.00	14.29	85.71	14.29	85.71	42.86
3	Escorts MF	7	0	0	7	0	7	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
4	J M MF	4	0	0	4	0	4	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
5	Kotak MF	10	1	0	11	0	11	
	%	90.91	9.09	0.00	100.00	0.00	100.00	30.30
6	Reliance MF	7	0	0	9	0	9	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
7	Sundaram MF	10	0	1	9	0	10	
	%	100.00	0.00	10.00	90.00	0.00	100.00	36.67
8	Tata MF	10	0	0	10	0	10	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
9	Taurus MF	5	0	0	5	0	5	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
	Total	61	1	2	63	1	64	
	%	98.39	1.61	3.08	96.92	1.54	98.46	34.33

Company wise result of this measure are disclosed in the table 5.36, 5.37 and 5.38. Treynor's measure of Benchmark Junior BeES has observed positive results in 2004 and 2005. Benchmark Nifty BeES performance seen

negative in term of Treynor's measure in 2003, which improved in subsequent years and turn into positive. Overall 66.67 % schemes got success to earn positive and 33.33% schemes failed to produce their positive return in term of Treynor's measure since 2003 to 2005. In 2003, one scheme has outperformed over the market return while in subsequent years none of the scheme performed well as compare to market.

About Cholamandalam mutual fund, the number of positive Treynor's performance schemes is declined from 5 (71.43 %) in 2003 to 3 (42.86%) schemes in 2005. Chola Freedom Income STF (HD) achieved continuously positive return as per Treynor's measures. In 2003, all 7 schemes have outperformed to market return. The percentage of outperforming schemes has undergone a constant decline since 2004. It falls from 100% to 14.29 % in 2005. In 2004, Chola Liquid Fund (G) and Chola Freedom Income STF (HD) in 2005 outperformed to market. Overall average outperformance percentage is 42.86 % achieved by Cholamandalam mutual fund. However overall positive performance is 66.67 % observed.

According to Treynor's measure, Escorts mutual fund got success to earn better return than market return in case of 33.33 % schemes irrespective of years. Escorts Income Plan (D) earn highest return and better performance to market among 7 selected schemes of Escorts mutual funds during the reference years.

All 4 schemes of J M mutual funds have positive differential return in 2003, it indicate that the result of such schemes are better than that of market return. It is interesting to note that 3 schemes have negative return in term of Treynor's measure even though its returns is greater than market return. During the overall period 33.33%, schemes have declared their positive differential return while 66.67 % schemes have negative differential return.

The performance trend of Kotak mutual fund is more or less similar to J M mutual fund. 10 out of 11 schemes, performed well to market return in 2003. The performance trend is reverse in the year 2004 and 2005. The top performer

schemes are Kotak Liquid Regular –G (1.4831%), Kotak Gilt Saving Plan –G (0.2303 %) and Kotak Tech (0.0139 %) in 2003, 2004 and 2005 respectively.

A reference to Reliance mutual fund in table 5.36 shows that allover performance in term of positive Treynor's measure observed 81.48 % which is highest among all 9 selected mutual funds. Reliance Medium Term Fund–G (14.4521%) earn highest return among all schemes as per Treynor's measure. 3 out 9 schemes achieved continuously positive return through out the study period. During the study period 33.33% schemes have beat the market return while 66.67 % schemes performance remain poor as compared to market return.

Regarding the Sundaram mutual fund, Sundaram Gilt Fund (G) and Sundaram Income plus (G) declared their positive return in term of Treynor's measure since 2003. In 2003, all schemes enjoyed positive differential performance except Sundaram Money Fund (G) while performance of all such schemes was reverse in 2004 and 2005.

The trend of Tata mutual fund remained same in all three years in respect to Treynor's positive return. Through out the reference years, 80% schemes obtained positive return and 33.33 % schemes proved their superiority than the market return by declaring positive differential return. Among the all 9 mutual funds, performance of Tata mutual fund is better in term of Treynor's measure.

The performance of Taurus mutual fund improved from 40% in 2003 to 80% in 2005. While its performance compared with market return, results obtained are like other mutual fund companies. All the schemes have performed better in 2003 in term of Treynor's positive return as well as market return. In 2004 and 2005, almost all schemes performance gone down with regard to market return except 1 scheme each in 2004 and 2005.

During the year 2003, 58.06 % schemes have registered their positive return that is rise up to 83.08 % in the year 2004 and in the syear 2005 declined up to 58.46% as per treynor's meausre.

98.39 % schemes outperformed to benchmark, 3.08% in the year 2004 and 1.54 % in the year 2005 as per Treynor's measure. Thus, inferior performance of fund is observed in the year 2004 and 2005 to benchmark by Treynor's measure.

## 2. FUND-CLASS WISE ANALYSIS UNDER TREYNOR'S MEASURE:

**Table: 5.39 Fund-Class Wise Treynor's Measure (Tm) And It's Difference from BSE Index (Tm-BMR) Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			TM	TM-BMR	TM	TM-BMR	TM	TM-BMR
1	Sundaram Balanced Fund (D)	Balance	-0.0017	0.3283	0.0122	-1.0562	-0.0028	-0.1741
2	J M Balanced Fund (G)	Balance	-0.0029	0.3271	0.0131	-1.0553	0.0017	-0.1697
3	Tata Young Citizens' Fund	Balance	0.0734	0.4034	0.0069	-1.0614	0.0023	-0.1691
4	Escorts Balanced Fund (G)	Balance	-0.0001	0.3299	0.0117	-1.0567	0.0038	-0.1675
5	Tata Balanced Fund (D)	Balance	0.0058	0.3358	0.0170	-1.0513	0.0058	-0.1656
6	Kotak Balance	Balance	-0.0011	0.3289	0.0125	-1.0558	0.0070	-0.1644
7	Tata Balanced Fund (G)	Balance	0.0031	0.3331	0.0140	-1.0544	0.0095	-0.1619
8	Sundaram Tax Saver (D)	ELSS	-0.0021	0.3279	0.0139	-1.0545	-0.0436	-0.2149
9	Escorts Tax Plan (D)	ELSS	-0.0003	0.3297	0.0122	-1.0562	0.0024	-0.1690
10	Sundaram Tax Saver 97	ELSS	-0.0020	0.3280	0.0147	-1.0537	0.0027	-0.1687
11	Tata Tax Saving Fund	ELSS	-0.0021	0.3279	0.0153	-1.0531	0.0052	-0.1662
12	Taurus Libra Tax Shield	ELSS	0.0000	0.3300	0.0184	-1.0499	0.0107	-0.1607
13	Escorts Income Plan (D)	Equity	0.2794	0.6094	-0.0596	-1.1279	-0.1273	-0.2987
14	Sundaram Select Focus (D)	Equity	0.0024	0.3324	0.0137	-1.0547	-0.0023	-0.1737
15	J M Basic Fund	Equity	-0.1495	0.1805	0.0293	-1.0391	0.0010	-0.1703
16	Benchmark Nifty BeES	Equity	-0.0039	0.3261	0.0100	-1.0583	0.0014	-0.1699
17	Sundaram Growth Fund (D)	Equity	-0.0009	0.3291	0.0029	-1.0655	0.0033	-0.1681
18	Benchmark Junior BeES	Equity	N/A	N/A	0.0383	-1.0301	0.0033	-0.1681
19	J M Equity Fund (G)	Equity	-0.0008	0.3292	0.0142	-1.0542	0.0033	-0.1681
20	Kotak-30 (G)	Equity	-0.0013	0.3287	0.0169	-1.0515	0.0040	-0.1674
21	Reliance Vision Fund (G)	Equity	0.0056	0.3356	0.0187	-1.0497	0.0054	-0.1660
22	Tata pure Equity Fund (G)	Equity	-0.0007	0.3293	0.0186	-1.0498	0.0055	-0.1659
23	Tata Select Pure Equity Fund (G)	Equity	0.0022	0.3322	0.0172	-1.0511	0.0057	-0.1656
24	Chola opportunity Fund (G)	Equity	-0.0047	0.3253	0.0068	-1.0615	0.0058	-0.1656
25	Chola opportunity Fund (QD)	Equity	-0.0047	0.3253	0.0072	-1.0612	0.0071	-0.1643
26	Reliance Growth Fund (D)	Equity	0.0127	0.3427	0.0220	-1.0463	0.0079	-0.1635
27	Reliance Banking Fund (D)	Equity	N/A	N/A	0.0235	-1.0448	0.0079	-0.1635
28	Kotak MNC	Equity	-0.0084	0.3216	0.0234	-1.0449	0.0083	-0.1631

Sr. No.	Name of Mutual funds	Fund-Class	2002-03		2003-04		2004-05	
			TM	TM-BMR	TM	TM-BMR	TM	TM-BMR
29	Tata Life Sci & Tech. Fund (G)	Equity	0 0029	0.3329	0.0129	-1.0554	0.0085	-0.1628
30	Taurus Discovery Fund	Equity	0 0315	0.3615	0.0091	-1.0593	0.0091	-0.1623
31	Reliance Growth Fund (G)	Equity	0.0021	0.3321	0.0220	-1.0464	0.0091	-0.1623
32	Taurus Star share	Equity	-0 0019	0 3281	0.0136	-1.0548	0 0103	-0.1611
33	Kotak Tech	Equity	-0 0016	0 3284	0 0053	-1.0631	0 0139	-0.1575
34	Tata Gilt Securities Fund (D)	Gilt	0.0215	0.3515	-0.0977	-1.1661	-0 0572	-0.2286
35	Tata Gilt Securities Fund (G)	Gilt	0 0162	0.3462	0 3036	-0.7648	-0.0528	-0.2241
36	Escorts Gilt Fund (D)	Gilt	0.0259	0.3559	0.0184	-1.0500	-0 0277	-0.1991
37	Chola Gilt Investment Plan (G)	Gilt	0.0123	0.3423	0.0374	-1.0310	-0 0256	-0.1970
38	Kotak Gilt Saving Plan (G)	Gilt	0.0412	0.3712	0.2303	-0.8381	-0 0156	-0.1869
39	Escorts Gilt Fund (G)	Gilt	0.0155	0.3455	0.0164	-1.0519	-0.0127	-0.1841
40	Taurus Libra Gilt	Gilt	-0.0148	0.3152	0.0163	-1.0521	-0.0084	-0 1797
41	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	N/A	0 0036	-1 0648	-0.0066	-0.1780
42	Sundaram Gilt Fund (G)	Gilt	0 0156	0 3456	0.0299	-1 0385	0 0552	-0 1162
43	Sundaram Gilt Fund (D)	Gilt	-0.0038	0 3262	-0.0335	-1 1019	0 0724	-0 0990
44	Chola Freedom Income STF (G)	Income	0 0649	0.3949	-0.0173	-1 0857	-74.6933	-74.8647
45	Reliance Medium Term Fund (G)	Income	14.4521	14.7821	0 0089	-1 0594	-0.1314	-0.3028
46	Kotak Bond Deposit Plan (D)	Income	0 0187	0.3487	0 0421	-1 0263	-0 0396	-0.2110
47	Chola Triple Ace (G)	Income	0.0144	0 3444	0 0154	-1.0530	-0.0378	-0.2092
48	Kotak Bond Deposit Plan (G)	Income	0 0187	0 3487	0.0220	-1.0464	-0.0321	-0.2035
49	J M Income Fund (G)	Income	0 0159	0 3459	0 0218	-1 0466	-0.0312	-0.2026
50	Kotak Bond Regular Plan (AD)	Income	-0 0011	0.3289	-0.0035	-1.0719	-0.0279	-0.1993
51	Kotak Bond Short Term plan (G)	Income	0.0686	0.3986	0.0257	-1.0427	-0.0273	-0.1987
52	Reliance income Fund (G)	Income	0.0139	0.3439	0.0241	-1.0443	-0.0193	-0.1906
53	Sundaram Income Plus (G)	Income	0 0232	0.3532	0.0253	-1.0431	-0 0026	-0.1740
54	Reliance Monthly Income Plan (G)	Income	0.0602	0.3902	0 0584	-1 0100	0.0000	-0.1714
55	Tata Income Fund (G)	Income	0.0097	0 3397	-0.0217	-1.0901	0.0020	-0.1694
56	Escorts Income Bond (G)	Income	-0.0580	0 2720	-0 0470	-1 1153	0.0033	-0.1681
57	Escorts Growth Fund (G)	Income	0 0001	0 3301	0 0115	-1.0568	0.0045	-0.1669
58	Sundaram Income Plus (D)	Income	0.0125	0 3425	1.1001	0.0317	0.0130	-0.1584
59	Taurus Libra Bond	Income	-0 0039	0.3261	0.0061	-1.0623	0.0174	-0.1540
60	Chola Freedom Income STF (HD)	income	0.0583	0.3883	0 0341	-1.0343	0.3498	0.1784
61	Kotak Liquid Regular (D)	MM	-1.8363	-1.5063	-1 7635	-2.8319	-4.0396	-4.2109
62	Kotak Liquid Regular (G)	MM	1.4831	1.8131	-0.7041	-1.7725	-0.7318	-0.9031
63	Chola Liquid Fund (G)	MM	0.6650	0 9950	2.7284	1.6601	-0.4116	-0.5830
64	Reli. Liq.Fund Treasury Plan (WD)	MM	0 3700	0.7000	-0.1146	-1.1829	-0.2493	-0.4207
65	Sundaram Money Fund (G)	MM	-0.2993	0.0307	-0.6253	-1.6937	-0.1858	-0.3572

**Table: 5.40 Fund Class-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of TM Based On BSE Sensex And NAV Return**

Sr. No.	Fund Class	2002-03		2003-04		2004-05		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	3	4	7	0	6	1	
	%	42.86	57.14	100.00	0.00	85.71	14.29	76.19
2	ELSS	1	4	5	0	4	1	
	%	20.00	80.00	100.00	0.00	80.00	20.00	66.67
4	Equity	8	11	20	1	19.00	2	
	%	42.11	57.89	95.24	4.76	90.48	9.52	75.94
5	Gilt	7	2	8	2	2	8	
	%	77.78	22.22	80.00	20.00	20.00	80.00	59.26
6	Income	14	3	13	4	7	10	
	%	82.35	17.65	76.47	23.53	41.18	58.82	66.67
7	Money Market	3	2	1	4	0	5	
	%	60.00	40.00	20.00	80.00	0.00	100.00	26.67
8	Total	36	26	54	11	38	27	
	%	58.06	41.94	83.08	16.92	58.46	41.54	66.53

**Table:5.41 Fund Class-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of TM-BMR Based On BSE Sensex And NAV Return**

Sr. No.	Fund Class	2002-03		2003-04		2004-05		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	7	0	0	7	0	7	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
2	ELSS	5	0	0	5	0	5	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
4	Equity	19	0	0	21	0	21	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
5	Gilt	9	0	0	10	0	10	
	%	100.00	0.00	0.00	100.00	0.00	100.00	33.33
6	Income	17	0	1	16	1	16	
	%	100.00	0.00	5.88	94.12	5.88	94.12	37.25
7	Money Market	4	1	1	4	0	5	
	%	80.00	20.00	20.00	80.00	0.00	100.00	33.33
8	Total	61	1	2	63	1	64	
	%	98.39	1.61	3.08	96.92	1.54	98.46	34.33

Mere glances of Fund-Class wise performance of selected schemes given in table 5.39, 5.40 & 5.41 predict that average 66.53 % schemes have observed positive Treynor's value across all categories under the reference years.

**i) BALANCE SCHEMES:**

60 schemes outperformed in 2003 by producing positive differential return. The performance after wards found reverse i.e only 1 balance scheme has outperformed during the 2004 and 2005. 3 schemes out of 7 balance schemes have registered their positive performance constantly. The performance of 6 schemes improved and 1 scheme's performance declined in 2004 as compared to 2003. As compared to performance level of 2004, the performance level decreased in case of all selected balance schemes in 2005.

**ii) ELSS SCHEMES:**

About ELSS, 1 (20%), 5 (100%) and 4 (80%) schemes reported positive performance in 2003, 2004 and 2005 respectively. Like others schemes, 100% out performed to market return registered in 2003 and in subsequent year's inverse trend seen. Overall 66.67% schemes have reposted positive result in term of Treynor's measure.

**iii) EQUITY SCHEMES:**

The performance of Equity oriented schemes were 100 % better than the market return in 2003. After this year, all 21 selected schemes have reported inferior performance to market return. 6 schemes have reported their positive performance throughout the study period. The Escorts Income Plan (D) has highest return in 2003, Benchmark Junior BeES in 2004 and Kotak Tech in 2005 held first rank. The performance of 14 Schemes is improved in 2005 compared to 2003.

**iv) GILT SCHEMES:**

In case of Gilt schemes, the positive return remained about 80% in 2003 and 2004 while in 2005 it observed only 20%. It is positive returns ranged from 0.0123% to 0.2303%. Overall 33.33 % schemes performed better than market return that is similar to other categories. The increasing trend observed up to 2004. In 2005, its performance drastically came down.

**v) INCOME SCHEMES:**

In case of Income schemes Reliance Medium Term Fund (G) 14.4521% out performed in 2003, Sundaram Income plus (D) 1.1001% in 2004 and Chola Freedom Income STF (G) 0.1784% in 2005. With reference to Money

market schemes, the result indicates that performance gradually goes down from 60% to Zero %. According to Treynor's measure, it holds last rank in term of positive performance.

#### vi) SUMMARY:

Treynor's performancne measure's data compiled and presented in the table 5.42A, 5.42B and 5.42C. Also, its defferenceial performamacne of selected schemes disclosed in table 5.43.

**Table: 5.42 A Treynor's Performance Measure Of Selected Schemes Of 2003**

Treynor's Measure	No. of schemes	%
$\leq -0.23$	2	3.23
$> -0.23 \leq 0$	25	40.32
$> 0 \leq 1$	33	53.23
$> 1$	2	3.23
Total	62	100.00

Market Return = -0.23 %

**Table: 5.42 B Treynor's Performance Measure Of Selected Schemes Of 2004**

Treynor's Measure	No. of schemes	%
$< 0$	11	16.92
$\geq 0 < 1$	52	80.00
$\geq 1 < 1.17$	1	1.54
$\geq 1.17$	1	1.54
Total	65	100.00

Market Return = 1.17 %

**Table: 5.42 C Treynor's Performance Measure Of Selected Schemes Of 2005**

Treynor's Measure	No. of schemes	%
$< 0$	27	41.54
$\geq 0 < 0.27$	37	56.92
$\geq 0.27 < 1$	1	1.54
$\geq 1$	0	0.00
Total	65	100.00

Market Return = 0.27 %

Table 5.42A, 5.42B and 5.42C reveals that 96.77% (60) schemes have superior performance than that of market return (Average weekly market return). Among these superior schemes 24 schemes have negative performance, 34 schemes' returns were between 0 to 1 % and 2 schemes result is more than 1. While in 2004 and 2005, 1.54% (1) scheme has achieved better return than the market return. It means as compared to average weekly market return in term of



Treynor’s measure, all the selected schemes performed inferior except one-one scheme in both year.

**Table: 5.43 Treynor's Differential Return Of Selected Schemes**

Differential Return	No. of Schemes & Percentage		
	2003	2004	2005
≤ 0	1 (1.61)	63 (96.92)	64 (98.46)
>0 ≤1	59 (95.16)	1 (1.54)	1 (1.54)
>1	2 (3.23)	1 (1.54)	0 (0.00)
Total	62 (100)	65 (100)	65 (100)

Table 5.43 shows that only 2 schemes have reported their negative differential return which raise up to 64 in 2004 and 2005. In the year 2003, 60 schemes (96.77%) proved their superiority over market return. These include 58 schemes having differential return in range of 0 – 1 % and 2 schemes earned greater than 1% return. While 1 scheme each in 2004 and 2005 has beaten the market return. The performance trend observed inverse in 2004 and 2005. About 98.46 % schemes have inferior return over market return in 2004 and 2005. The portfolio return and differential return in term of Treynor’s measure arrived almost same.

Sharpe measure and Treynor’s measure are similar in case of both divide the risk premium by a numerical risk measure. The different among both the measure is that Sharpe measure taken total risk as measured by standard deviation of portfolio return whereas Treynor’s measure considered only systematic risk or market risk or undiversified risk as measured by beta value of portfolio returns.

**[C]JENSEN MEASURE:**

“Jensen Model focused on evaluation of a portfolio manager’s ability to successfully predict security prices which yield high returns.”<sup>14</sup> Jensen Model attempts to construct a measure of absolute performance on a risk-adjusted basis. This model works on the assumption that portfolio will be fully invested, it means fund manger invested 100% funds which are collected from investors under specific schemes. However, in practice, mutual funds do not invest total funds,

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14. Ramesh Chandra, Performance Appraisal of Mutual Funds in India, pp. 104,First Edition, New Delhi, 2002.

some amount kept in cash or in money market to catch profitability opportunity at any time. This is also considered as an investment in this evaluation tools. Therefore, this measure constructs an absolute performance on a risk-adjusted basis. It evaluates the fund manager's ability that up to what extent fund manager successfully predict the security price that give up high return.

"Jensen also uses the assumptions of CAPM and the SLM as a benchmark. He defines his measure of portfolio performance as the differential between the actual returns on a portfolio in any particular holding period and the expected returns on that portfolio conditional on the risk-free, its level of systematic risk and the actual returns on the market portfolio. Jensen alpha is the arithmetic difference of portfolio return and security return line with same beta"<sup>15</sup>.

"It is imperative to note that the Jensen ratio involves the problem that is rankings often do not accurately adjust for fund's risk. As a suitable measure of performance, the Jensen ratio should not instead depend on the skills of the fund's manager rather than on the fund's risk and the performance of the market.

Like a bull market where realized returns are unexpectedly high. Under this circumstances, high-beta funds are expected to have much greater return than low-beta funds. However, it would not be rational to expect even excess returns of high-beta stock to be much larger than those of a low-beta stock"<sup>16</sup>.

By applying this model, we can calculate the differential return between actual return and expected return on portfolio investment. Therefore, it also known as Differential Return Method. Alpha is to be calculated as performance parameter. It is the different between benchmark return and average return on portfolio investment. Higher or positive alpha indicate superior performance of the fund than the benchmark due to better management talent of a random selection buy and hold strategy or by a immature investment in a portfolio having identical systematic risk. Lower or negative alpha represent average return on portfolio investment is lower than benchmark or market index, which indicate that manager has not done well or it is unmanaged portfolio of equal systematic risk and Zero value of alpha reveals that management has done as well as an unmanaged market portfolio.

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15 . Prof. Dr. Zechner, " Performance Evaluation", November 1999, pp 6

16 . Huagen 1993, Performance Evaluation, pp. 8

According to Jensen Model, Benchmark Return calculated as  $BMR = R_f + (R_m - R_f)B_p$ . The important aspect of this model is to provide guideline or idea regarding the return that should be expected at certain level of risk and this should be compared with actual return earned at given period. It enables analyst to define that whether the alpha has occurred by chance and is significantly different from Zero or not. It considered only systematic risk not the entire risk associated with the fund and ordinary investor can not alleviate unsystematic risk because of ordinary investors don't have proper and perfect market knowledge or it may of primary level. It is presented symbolically as under:

$$R_i = R_f + B_i ( R_m - R_f )$$

Where,

- $R_i$  is portfolio return,
- $R_f$  is risk free return,
- $B_i$  is a measure of systematic risk and
- $R_m$  is return on market portfolio.

1. COMPANY WISE ANALYSIS UNDER JENSEN’S MEASURE:

The performance of selected schemes in respect Jensen alpha values are presented in table 5.44 and Frequency distributions of positive and negative value of Alpha are disclosed in table 5.45.

**Table: 5.44 Company - Wise Jensen Measure (ALPHA) Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03	2003-04	2004-05
			ALPHA	ALPHA	ALPHA
1	Benchmark Junior BeES	Equity	N/A	1.7928	0.3971
2	Benchmark Nifty BeES	Equity	-0.3488	1.0473	0.1524
3	Chola Freedom Income STF (G)	Income	0.5973	-0.8427	-400.3397
4	Chola Freedom Income STF (HD)	income	0.5416	0.4495	1.1296
5	Chola Gilt Investment Plan (G)	Gilt	0.1381	-0.0251	-0.1498
6	Chola Liquid Fund (G)	mm	10.9526	287.1666	-6.2298
7	Chola opportunity Fund (G)	Equity	-0.4307	0.6039	0.4453
8	Chola opportunity Fund (QD)	Equity	-0.4284	0.6498	0.9209
9	Chola Triple Ace (G)	Income	0.1462	-0.2062	-0.1682
10	Escorts Balanced Fund (G)	Balance	0.0009	0.9032	0.3084
11	Escorts Gilt Fund (D)	Gilt	0.1965	-0.3673	-0.1542
12	Escorts Gilt Fund (G)	Gilt	0.1446	-0.3276	-0.1305
13	Escorts Growth Fund (G)	Income	0.0109	0.9862	0.4367
14	Escorts Income Bond (G)	Income	1.0846	0.4577	0.0749
15	Escorts Income Plan (D)	Equity	0.6248	-10.6658	-0.2961
16	Escorts Tax Plan (D)	ELSS	-0.0213	1.2331	0.2417

Sr. No.	Name of Mutual funds	Fund-Class	2002-03	2003-04	2004-05
			ALPHA	ALPHA	ALPHA
17	J M Balanced Fund (G)	Balance	-0.1302	0.6644	0.1151
18	J M Basic Fund	Equity	1.5416	3.6354	0.1283
19	J M Equity Fund (G)	Equity	-0.0527	1.2809	0.3447
20	J M Income Fund (G)	Income	0.1583	-0.2359	-0.1479
21	Kotak Balance	Balance	-0.0414	0.7204	0.4906
22	Kotak Bond Deposit Plan (D)	Income	0.1608	-0.1056	-0.1653
23	Kotak Bond Deposit Plan (G)	Income	0.1617	-0.2794	-0.1506
24	Kotak Bond Regular Plan (AD)	Income	0.0334	-0.1317	-0.1390
25	Kotak Bond Short Term plan (G)	Income	0.5848	-1.7593	-0.2936
26	Kotak Gilt Saving Plan (G)	Gilt	0.5801	15.3783	-0.3016
27	Kotak Liquid Regular (D)	MM	6.0889	-19.0761	-7.0550
28	Kotak Liquid Regular (G)	MM	21.6175	-61.4663	-6.7462
29	Kotak MNC	Equity	-0.3405	1.2428	0.5981
30	Kotak Tech	Equity	-0.1571	0.5892	0.6301
31	Kotak-30 (G)	Equity	-0.1003	1.3681	0.3779
32	Reliance Banking Fund (D)	Equity	N/A	1.4642	0.5508
33	Reliance Growth Fund (D)	Equity	0.4573	1.7003	0.5920
34	Reliance Growth Fund (G)	Equity	0.1854	1.7167	0.7805
35	Reliance income Fund (G)	Income	0.1414	-0.2359	-0.1150
36	Reli. Liquid Fund Treasury Plan (WD)	MM	2.0434	-1.8562	-0.6253
37	Reliance Medium Term Fund (G)	Income	57.8000	-0.3200	-0.3632
38	Reliance Monthly Income Plan (G)	Income	0.3322	-0.4236	-0.0131
39	Reliance Vision Fund (G)	Equity	0.48524	1.5362	0.5042
40	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	-0.1270	-0.0682
41	Sundaram Growth Fund (D)	Equity	-0.0927	0.3193	0.3592
42	Sundaram Tax Saver 97	ELSS	-0.1556	1.4420	0.2166
43	Sundaram Gilt Fund (G)	Gilt	0.2837	2.1094	0.0446
44	Sundaram Gilt Fund (D)	Gilt	-0.0502	-0.8392	0.0266
45	Sundaram Income Plus (G)	Income	0.1758	-1.0584	-0.0438
46	Sundaram Income Plus (D)	Income	0.1404	16.2384	-0.0452
47	Sundaram Balanced Fund (D)	Balance	-0.0794	0.9173	-0.2211
48	Sundaram Select Focus (D)	Equity	0.1540	1.3590	-0.2589
49	Sundaram Money Fund (G)	MM	-5.0031	-109.6290	-3.2622
50	Sundaram Tax Saver (D)	ELSS	-0.1640	1.1431	-4.7291
51	Tata Balanced Fund (D)	Balance	0.4616	1.0259	0.3573
52	Tata Balanced Fund (G)	Balance	0.2439	0.8958	0.4581
53	Tata Gilt Securities Fund (D)	Gilt	0.3453	0.7520	-0.2678
54	Tata Gilt Securities Fund (G)	Gilt	0.2072	-0.1716	-0.2349
55	Tata Income Fund (G)	Income	0.1153	0.3296	0.0426
56	Tata Life Sci & Tech Fund (G)	Equity	0.5323	1.8503	0.7216
57	Tata pure Equity Fund (G)	Equity	-0.0848	1.6635	0.5519
58	Tata Select Pure Equity Fund (G)	Equity	0.5423	1.5657	0.5752
59	Tata Tax Saving Fund	ELSS	-0.0437	1.4150	0.4664
60	Tata Young Citizens' Fund	Balance	15.9894	0.3647	0.1147
61	Taurus Discovery Fund	Equity	4.6577	0.9215	0.9836
62	Taurus Libra Bond	Income	0.0198	-0.2238	0.0622
63	Taurus Libra Gilt	Gilt	0.5025	-0.1715	-0.0983
64	Taurus Libra Tax Shield	ELSS	0.0059	1.4580	1.3994
65	Taurus Star share	Equity	-0.1860	1.2661	1.0141

**Table:5.45 Company-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of ALPHA Based On BSE Sensex And NAV Return**

Sr. No.	Mutual Fund	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Benchmark MF	0	1	2	0	2	0	
	%	0.00	100.00	100.00	0.00	100.00	0.00	66.67
2	Cholamandalam MF	5	2	4	3	3	4	
	%	71.43	28.57	57.14	42.86	42.86	57.14	57.14
3	Escorts MF	6	1	4	3	4	3	
	%	85.71	14.29	57.14	42.86	57.14	42.86	66.67
4	J M MF	2	2	3	1	3	1	
	%	50.00	50.00	75.00	25.00	75.00	25.00	66.67
5	Kotak MF	7	4	5	6	4	7	
	%	63.64	36.36	45.45	54.55	36.36	63.64	48.48
6	Reliance MF	7	0	4	5	4	5	
	%	100.00	0.00	44.44	55.56	44.44	55.56	62.96
7	Sundaram MF	4	6	7	3	4	6	
	%	40.00	60.00	70.00	30.00	40.00	60.00	50.00
8	Tata MF	8	2	9	1	8	2	
	%	80.00	20.00	90.00	10.00	80.00	20.00	83.33
9	Taurus MF	4	1	3	2	4	1	
	%	80.00	20.00	60.00	40.00	80.00	20.00	73.33
	Total	43	19	41	24	36	29	
	%	69.35	30.65	63.08	36.92	55.38	44.62	62.61

The data depict that 43 out of 62 schemes (69.35%) have positive alpha values as Jensen performance measure in year 2003. It reveals that these schemes have superior average return because of superior management talent of fund managers. On the other hand, 19 schemes (30.65%) reported their negative alpha values in 2003, which indicate inferior performance.

In relation of benchmark mutual fund, benchmark Junior BeES recorded positive alpha in 2004 and 2005. About Benchmark Nifty BeES has inferior result that has reported positive alpha value in subsequent years. It means performance is improved in case of Benchmark Nifty BeES as compared to 2003. The percentages of outperforming schemes have increased from 0 % to 100 % in case of Benchmark mutual fund. Overall three years performance seen 66.67 % positive alpha and 32.33 % failed to do such.

71.43 % schemes in 2003, 57.14 % in 2004 and 42.86 % in 2005 of Cholamandalam mutual fund have enjoyed positive alpha value. In term of Jensen

measure, its performance result has observed down trend from 2003 to 2005. Chola Freedom Income STF (HD) has continuously earned positive alpha. Fund manager get success in this scheme to manage it proficiently. A very large level of downfall occurred in the performance of Chola Liquid Fund (G) i.e. 287 % in 2004 to -6.2298 % in 2005. Average 57.14 % schemes outperform while in case 42.86 % schemes fund manager has not done well as an unmanaged portfolio of equal systematic risk.

85.71 % schemes of Escorts mutual fund declared superior investment performance in year 2003 and 57.14 % in 2004 & 2005 both year. This result has goes down because of inferior performance in case of Escort Gilt (D) and Escorts Gilt (G) and Escorts Income Plan (D) in 2005. The incidence of superior performance has been highest in case of Escorts Income Bond (1.0846 %) in 2003; Escorts Growth Fund-G (0.9862 % and 0.4367 %) in 2004 and 2005. The highest inferior result seen in case of Escorts Income Plan-D (-10.6658 %) in 2004.

In reference to J M mutual fund, J M Basic Fund scheme has positive alpha value for average period of three years constantly. Consistency in term of superior performance seen for two years in case of J M Balanced Fund and J M Equity Fund (G) while inferior performance observed for two years in case of J M Income Fund (G). 85.71 % schemes have shown their superiority over benchmark return in 2003, this percentage declined in 2004 and 2005 to 57.14 %.

Out of 11 schemes, 4 in 2003 and 6 schemes in 2004 and 7 schemes in 2005 have earned inferior return in case of Kotak mutual fund. It indicates that the performance of selected schemes declined year by years. The superior ratio of this fund remains from 36.36 % to 63.64%. Not a single scheme has consistency in superior or inferior performance for three years. Those showing consistently better performance during last 2 years includes Kotak Balance, Kotak MNC, Kotak Tech and Kotak -30 (G). According to overall three years average positive performance, Kotak Mutual Fund has get success 48.48 %, which is lowest among selected mutual funds.

Reliance mutual fund manager also get success to provide positive value, 100% schemes in 2003 and 44.44 % in 2004 and 2005 both year. More than 50% schemes have experienced negative alpha value, which indicate inferior performance by these schemes. The highest loser scheme is Reliance Medium Term Fund (G) in regard of alpha value among selected schemes of Reliance

mutual fund from period of 2003 to 2005. In 2004, the performance of Reliance Growth Fund (G) and Reliance Vision Fund (G) improved as compared to the performance of 2003 and all selected schemes performance declined in 2005. The investment performance found 62.96 % positive and 37.04% negative; the average positive performance arrived due to 100 % superior performance in 2003 by these schemes.

The data of Sundaram mutual fund indicate that the percentage of superior performance schemes improved in 2004 and declined in 2005. Its positive alpha value remained in range of 40 % to 70 % under the reference period. In term of overall investment performance, it gets success to produced positive alpha up 50 %. The maximum loser schemes are Sundaram Money Fund (G) in 2003 and 2004, while Sundaram Tax Saver (D) in 2005. The top gainer schemes are Sundaram Gilt (0.2837 %), Sundaram Income Plus-D (16.2384%) and Sundaram Growth Fund-D (0.3592%) in 2003, 2004 and 2005 respectively.

8 schemes in 2003 & 2005, and 9 out of 10 schemes of Tata mutual fund have reported positive alpha value. As compared to other selected mutual fund, the performance of Tata mutual fund's selected schemes having highest rank. 83.33% schemes have superior performance in respect of overall average performance since 2003. The Tata Young Citizen's Fund proved highest superiority in term of positive alpha value among all selected schemes of Tata mutual fund throughout the analysis period.

With reference to Taurus mutual fund, 2 schemes consistently show good performance during study period. This includes Taurus Discovery Fund and Taurus Libra Tax Shield. In term of overall average performance, its positive alpha value is 73.33 %, which is second highest among nine selected mutual funds. Taurus Discovery Fund, Taurus Libra Tax Shield and Taurus Star Share are mainly top performance in respective years.

## **2. FUND-CLASS WISE ANALYSIS UNDER JENSEN'S MEASURE:**

Fund class wise alpha values of selected schemes is given in table 5.45 and frequency distribution according to positive & negative values of alpha based on BSE sensx and NAV return presented in 5.46.

**Table: 5.46 Fund Class - Wise Jensen Measure (ALPHA) Based On BSE Sensex And NAV Return Of Selected Schemes**

Sr. No.	Name of Mutual funds	Fund-Class	2002-03	2003-04	2004-05
			ALPHA	ALPHA	ALPHA
1	Tata Young Citizens' Fund	Balance	15.9894	0.3647	0.1147
2	Tata Balanced Fund (D)	Balance	0.4616	1.0259	0.3573
3	Tata Balanced Fund (G)	Balance	0.2439	0.8958	0.4581
4	Escorts Balanced Fund (G)	Balance	0.0009	0.9032	0.3084
5	Kotak Balance	Balance	-0.0414	0.7204	0.4906
6	Sundaram Balanced Fund (D)	Balance	-0.0794	0.9173	-0.2211
7	J M Balanced Fund (G)	Balance	-0.1302	0.6644	0.1151
8	Taurus Libra Tax Shield	ELSS	0.0059	1.4580	1.3994
9	Escorts Tax Plan (D)	ELSS	-0.0213	1.2331	0.2417
10	Tata Tax Saving Fund	ELSS	-0.0437	1.4150	0.4664
11	Sundaram Tax Saver 97	ELSS	-0.1556	1.4420	0.2166
12	Sundaram Tax Saver (D)	ELSS	-0.1640	1.1431	-4.7291
13	Taurus Discovery Fund	Equity	4.6577	0.9215	0.9836
14	J M Basic Fund	Equity	1.5416	3.6354	0.1283
15	Escorts Income Plan (D)	Equity	0.6248	-10.6658	-0.2961
16	Tata Select Pure Equity Fund (G)	Equity	0.5423	1.5657	0.5752
17	Tata Life Sci. & Tech. Fund (G)	Equity	0.5323	1.8503	0.7216
18	Reliance Vision Fund (G)	Equity	0.4852	1.5362	0.5042
19	Reliance Growth Fund (D)	Equity	0.4573	1.7003	0.5920
20	Reliance Growth Fund (G)	Equity	0.1854	1.7167	0.7805
21	Sundaram Select Focus (D)	Equity	0.1540	1.3590	-0.2589
22	J M Equity Fund (G)	Equity	-0.0527	1.2809	0.3447
23	Tata pure Equity Fund (G)	Equity	-0.0848	1.6635	0.5519
24	Sundaram Growth Fund (D)	Equity	-0.0927	0.3193	0.3592
25	Kotak-30 (G)	Equity	-0.1003	1.3681	0.3779
26	Kotak Tech	Equity	-0.1571	0.5892	0.6301
27	Taurus Star share	Equity	-0.1860	1.2661	1.0141
28	Kotak MNC	Equity	-0.3405	1.2428	0.5981
29	Benchmark Nifty BeES	Equity	-0.3488	1.0473	0.1524
30	Chola opportunity Fund (QD)	Equity	-0.4284	0.6498	0.9209
31	Chola opportunity Fund (G)	Equity	-0.4307	0.6039	0.4453
32	Rehance Banking Fund (D)	Equity	N/A	1.4642	0.5508
33	Benchmark Junior BeES	Equity	N/A	1.7928	0.3971
34	Kotak Gilt Saving Plan (G)	Gilt	0.5801	15.3783	-0.3016
35	Taurus Libra Gilt	Gilt	0.5025	-0.1715	-0.0983
36	Tata Gilt Securites Fund (D)	Gilt	0.3453	0.7520	-0.2678
37	Sundaram Gilt Fund (G)	Gilt	0.2837	2.1094	0.0446
38	Tata Gilt Securities Fund (G)	Gilt	0.2072	-0.1716	-0.2349
39	Escorts Gilt Fund (D)	Gilt	0.1965	-0.3673	-0.1542
40	Escorts Gilt Fund (G)	Gilt	0.1446	-0.3276	-0.1305
41	Chola Gilt Investment Plan (G)	Gilt	0.1381	-0.0251	-0.1498
42	Sundaram Gilt Fund (D)	Gilt	-0.0502	-0.8392	0.0266
43	RGSF- Long Term Gilt Retail (G)	Gilt	N/A	-0.1270	-0.0682



Sr. No.	Name of Mutual funds	Fund-Class	2002-03	2003-04	2004-05
			ALPHA	ALPHA	ALPHA
44	Reliance Medium Term Fund (G)	Income	57.8000	-0.3200	-0.3632
45	Escorts Income Bond (G)	Income	1.0846	0 4577	0 0749
46	Chola Freedom Income STF (G)	Income	0.5973	-0.8427	-400 3397
47	Kotak Bond Short Term plan (G)	Income	0.5848	-1.7593	-0.2936
48	Chola Freedom Income STF (HD)	income	0.5416	0 4495	1 1296
49	Reliance Monthly Income Plan (G)	Income	0.3322	-0.4236	-0.0131
50	Sundaram Income Plus (G)	Income	0.1758	-1.0584	-0.0438
51	Kotak Bond Deposit Plan (G)	Income	0.1617	-0.2794	-0.1506
52	Kotak Bond Deposit Plan (D)	Income	0.1608	-0 1056	-0.1653
53	J M Income Fund (G)	Income	0.1583	-0 2359	-0 1479
54	Chola Triple Ace (G)	Income	0.1462	-0 2062	-0.1682
55	Reliance income Fund (G)	Income	0.1414	-0.2359	-0.1150
56	Sundaram Income Plus (D)	Income	0.1404	16.2384	-0.0452
57	Tata Income Fund (G)	Income	0.1153	0 3296	0.0426
58	Kotak Bond Regular Plan (AD)	Income	0.0334	-0.1317	-0.1390
59	Taurus Libra Bond	Income	0.0198	-0.2238	0 0622
60	Escorts Growth Fund (G)	Income	0.0109	0 9862	0.4367
61	Kotak Liquid Regular (G)	MM	21.6175	-61 4663	-6 7462
62	Chola Liquid Fund (G)	MM	10.9526	287 1666	-6 2298
63	Kotak Liquid Regular (D)	MM	6 0889	-19 0761	-7.0550
64	Reli Liquid Fund Treasury Plan (WD)	MM	2 0434	-1 8562	-0 6253
65	Sundaram Money Fund (G)	MM	-5.0031	-109 6290	-3 2622

**Table:5.47 Fund Class-Wise Frequency Distribution Of Selected Schemes According To Positive & Negative Values Of ALPHA Based On BSE Sensex And NAV Return**

Sr. No.	Fund Class	2002-2003		2003-2004		2004-2005		Overall +ve %
		Positive	Negative	Positive	Negative	Positive	Negative	
1	Balance	4	3	7	0	6	1	
	%	57.14	42.86	100.00	0.00	85.71	14.29	80.95
2	ELSS	1	4	5	0	4	1	
	%	20.00	80.00	100.00	0.00	80.00	20.00	66.67
3	Equity	9	10	20	1	19	2	
	%	47.37	52.63	95.24	4.76	90.48	9.52	77.69
4	Gilt	8	1	3	7	2	8	
	%	88.89	11.11	30.00	70.00	20.00	80.00	46.30
5	Income	17	0	5	12	5	12	
	%	100.00	0.00	29.41	70.59	29.41	70.59	52.94
6	Money Market	4	1	1	4	0	5	
	%	80.00	20.00	20.00	80.00	0.00	100.00	33.33
	Total	43	19	41	24	36	29	
	%	69.35	30.65	63.08	36.92	55.38	44.62	62.61

**i) BALANCE SCHEMES:**

The table depicts that positive value is 57.14%, 100% and 85.71 % in the case of Balance schemes in the year 2003, 2004 and 2005 respectively. 4 out of 7 balance schemes have achieved positive alpha continuously during three years.

**ii) ELSS SCHEMES:**

Regarding ELSS, 20 % schemes outperformed in 2003 that increased up 80% in 2005. All the schemes have performed well during 2004. The overall average out performance observed in 66.67 % schemes.

**iii) EQUITY SCHEMES:**

Table reveals that performances of equity-oriented schemes have improved their performance as per Jensen's measure. In 2003, 9 schemes have better performed which goes up to 20 in 2004. Only one scheme has reported their inferior result. Among all categories, in respect to the overall performance equity schemes stood at second rank with 77.69 % positive alpha value of their selected schemes.

**iv) GILT SCHEMES:**

In case of Gilt scheme, number of underperformed schemes continuously increased. 11.11 % schemes have negative alpha value, which climbed to 80 % in 2005.

**v) INCOME SCHEMES:**

The similar trend observed in case of income schemes under the reference years. The highest loser schemes in 2005 were Reliance Medium Term Fund (G) and Chola Freedom Income STF (G) as compared to 2003. The Reliance Medium Term Fund (G), Sundaram Income Plus (D) and Chola Freedom Income STF (HD) are the top outperformed schemes in 2003, 2004 and 2005.

**vi) MONEY MARKET SCHEMES:**

All Money market schemes have outperformed in 2003 except Sundaram Money Fund (G). Very high downfall observed in case of Chola Liquid Fund (G) and Sundaram Money fund (G). 33.33 % Money market schemes have overall average positive alpha values.

**vii) SUMMARY:**

Above discussion of Jensen’s performancne measure is compiled and presented in the table 5.45A, 5.48B and 5.48C

**Table: 5.48A Jensen's Performance Measure Of Selected Schemes Of 2003**

Jenson's Measure	No. of schemes	%
$\leq -0.23$	5	8.06
$> -0.23 \leq 0$	14	22.58
$> 0 \leq 1$	34	54.84
$> 1$	9	14.52
Total	62	100.00

Market Return = -0.23 %

**Table: 5.48B Jensen's Performance Measure Of Selected Schemes Of 2004**

Jenson's Measure	No. of schemes	%
$< 0$	24	36.92
$\geq 0 < 1$	16	24.62
$\geq 1 < 1.17$	3	4.62
$\geq 1.17$	22	33.85
Total	65	100.00

Market Return = 1.17 %

**Table: 5.48C Jensen's Performance Measure Of Selected Schemes Of 2005**

Jenson's Measure	No. of schemes	%
$< 0$	29	44.62
$\geq 0 < 0.27$	11	16.92
$\geq 0.27 < 1$	22	33.85
$\geq 1$	3	4.62
Total	65	100.00

Market Return = 0.27 %

Table 5.48A, 5.48B and 5.48C indicates the frequency distribution of selected schemes with reference to market return. There were 8.06 % schemes have negative alpha value as well as inferior return as compared to average weekly market return based on BSE Sensex in 2003. 91.94 % sample schemes have outperformed than market return. Among this, 54.84 % schemes alpha value is between zero and less than one, while 14.52 % schemes enjoyed more than one positive alpha value in term of Jensen measure in 2003. The trend seen reverse in the year 2004, it is significant to note that 66.16 % schemes have below performance as compared to the market portfolio. 22 schemes out of 65, over the

market return in 2004, which implies the superior performance over the security market.

The majority schemes have registered their poor performance even less than market returns in the year 2005. 40 out of 65 have inferior performance. Only 3 schemes (4.628 %) have superior performance having alpha value more than one in 2005. This includes Taurus Libra Tax Shield (1.3994 %), Chola Freedom Income STF-HD (1.1296%) and Taurus Star Share (1.0141%).

## 5.8 COMPARISON OF SHARPE MEASURE, TREYNOR'S MESURE AND JENSEN MODEL'S PERFORMANCE:

The measure of different models may give different performance i.e. when we applied Sharpe model, then performance will be different from other models like Treynor's model and Jensen's models for same schemes. Following table no. 5.49 reveals performance measure as per Sharpe, Treynor's and Jensen's measure.

**Table: 5.49 Comparative Performance of mutual fund as per Share, Treynor's and Jensen's Models.**

Sr. No.	Schemes	2003			2004			2005		
		SI	TM	JM	SI	TM	JM	SI	TM	JM
1	Benchmark Junior BeES	N/A	N/A	N/A	0 5943	0 0383	1 7928	0 1028	0 0033	0 3971
2	Benchmark Nifty BeES	-0 1568	-0 0039	-0 3488	0 3469	0 0100	1 0473	0 0530	0 0014	0 1524
3	Chola Freedom Income STF (G)	0 3843	0 0649	0 5973	-0 1341	-0 0173	-0 8427	-0 1135	-74.6933	-400 3397
4	Chola Freedom Income STF (HD)	0 3856	0 0583	0 5416	-0 1343	0 0341	0 4495	-0 3459	0 3498	1 1296
5	Chola Gilt Investment Plan (G)	0 1077	0 0123	0 1381	0 3852	0 0374	-0 0251	-0 2436	-0 0256	-0 1498
6	Chola Liquid Fund (G)	1 2378	0 6650	10 9526	-0 8487	2 7284	287 1666	-1 0028	-0 4116	-6 2298
7	Chola opportunity Fund (G)	-0 1584	-0 0047	-0 4307	0 1808	0 0068	0 6039	0 1828	0 0058	0 4453
8	Chola opportunity Fund (QD)	-0 1567	-0 0047	-0 4284	0 1938	0 0072	0 6498	0 1388	0 0071	0 9209
9	Chola Triple Ace (G)	0 1425	0 0144	0 1462	0 1514	0 0154	-0 2062	-0.3814	-0 0378	-0 1682
10	Escorts Balanced Fund (G)	-0 0020	-0 0001	0 0009	0 3611	0 0117	0 9032	0 1232	0 0038	0 3084
11	Escorts Gilt Fund (D)	0 1716	0 0259	0 1965	0 0920	0 0184	-0 3673	-0 4995	-0 0277	-0 1542
12	Escorts Gilt Fund (G)	0 1347	0 0155	0 1446	0 0909	0 0164	-0 3276	-0 1977	-0 0127	-0 1305
13	Escorts Growth Fund (G)	0 0032	0 0001	0 0109	0 3757	0 0115	0 9862	0 1476	0 0045	0 4367
14	Escorts Income Bond (G)	0 2392	-0 0580	1 0846	0 0774	-0 0470	0 4577	0 0620	0 0033	0 0749
15	Escorts Income Plan (D)	0 6319	0 2794	0 6248	-0 0203	-0 0596	-10 6658	-0 5929	-0 1273	-0 2961
16	Escorts Tax Plan (D)	-0 0110	-0 0003	-0 0213	0 1428	0 0122	1 2331	0 0774	0 0024	0 2417
17	J M Balanced Fund (G)	-0 1023	-0 0029	-0.1302	0 4181	0 0131	0 6644	0 0610	0 0017	0 1151
18	J M Basic Fund	0 1297	-0 1495	1 5416	0 2808	0 0293	3 6354	0 0325	0 0010	0 1283
19	J M Equity Fund (G)	-0 0289	-0 0008	-0 0527	0 4617	0 0142	1 2809	0 1063	0 0033	0 3447
20	J M Income Fund (G)	0 1610	0 0159	0 1583	0 1859	0 0218	-0 2359	-0.3186	-0 0312	-0 1479
21	Kotak Balance	-0 0373	-0 0011	-0 0414	0 3660	0 0125	0 7204	0 2180	0 0070	0 4906
22	Kotak Bond Deposit Plan (D)	0 1771	0 0187	0 1608	0 1544	0 0421	-0 1056	-0 2818	-0 0396	-0 1653

Sr. No.	Schemes	2003			2004			2005		
		SI	TM	JM	SI	TM	JM	SI	TM	JM
23	Kotak Bond Deposit Plan (G)	0 1821	0 0187	0 1617	0 1893	0 0220	-0 2794	-0 2717	-0 0321	-0 1506
24	Kotak Bond Regular Plan (AD)	-0 0084	-0 0011	0 0334	-0 0447	-0 0035	-0 1317	-0 2363	-0 0279	-0 1390
25	Kotak Bond Short Term plan (G)	0 4713	0 0686	0 5848	0 2115	0 0257	-1 7593	-0 2940	-0 0273	-0 2936
26	Kotak Gilt Saving Plan (G)	0 1653	0 0412	0 5801	-0 3037	0 2303	15 3783	-0 1055	-0 0156	-0 3016
27	Kotak Liquid Regular (D)	-5 9446	-1 8363	6 0889	-9 9888	-1 7635	-19 0761	-3 7954	-4 0396	-7 0550
28	Kotak Liquid Regular (G)	1 3446	1 4831	21 6175	-0 9790	-0 7041	-61 4663	-2 8381	-0 7318	-6 7462
29	Kotak MNC	-0 2128	-0 0084	-0 3405	0 4414	0 0234	1 2428	0 1182	0 0083	0 5981
30	Kotak Tech	-0 0512	-0 0016	-0 1571	0 1285	0 0053	0 5892	0 3018	0 0139	0 6301
31	Kotak-30 (G)	-0 0509	-0 0013	-0 1003	0 5327	0 0169	1 3681	0 1165	0 0040	0.3779
32	Reliance Banking Fund (D)	N/A	N/A	N/A	0 4906	0 0235	1 4642	0 1549	0 0079	0 5508
33	Reliance Growth Fund (D)	0 0559	0 0127	0 4573	0 3204	0 0220	1 7003	0 1549	0 0079	0 5920
34	Reliance Growth Fund (G)	0 0671	0 0021	0 1854	0 6306	0 0220	1.7167	0 2765	0 0091	0 7805
35	Reliance income Fund (G)	0 1315	0 0139	0 1414	0 2153	0 0241	-0 2359	-0 1853	-0 0193	-0 1150
36	Reli Liq Fund Treasury Plan (WD)	0 1489	0 3700	2 0434	-1 2072	-0 1146	-1 8562	-1 2144	-0 2493	-0 6253
37	Reliance Medium Term Fund (G)	0 1833	14 4521	57 8000	0 0843	0 0089	-0.3200	-0 5315	-0 1314	-0 3632
38	Reliance Monthly Income Plan (G)	0 2983	0 0602	0 3322	-0 1322	0 0584	-0 4236	0.0009	0 0000	-0 0131
39	Reliance Vision Fund (G)	0 1745	0 0056	0 4852	0 5497	0 0187	1 5362	0 1811	0 0054	0 5042
40	RGSF- Long Term Gilt Retail (G)	N/A	N/A	N/A	0 0326	0 0036	-0 1270	-0 0664	-0 0066	-0 0682
41	Sundaram Balanced Fund (D)	-0 0656	-0 0017	-0 0794	0 1729	0 0122	0 9173	-0 0522	-0 0028	-0 2211
42	Sundaram Gilt Fund (D)	0 0187	-0 0038	-0 0502	-0 0931	-0 0335	-0 8392	-0 3677	0 0724	0 0266
43	Sundaram Gilt Fund (G)	0 0589	0 0156	0 2837	-0 0574	0 0299	2 1094	-0 3229	0 0552	0 0446
44	Sundaram Growth Fund (D)	-0 0224	-0 0009	-0 0927	0 0461	0 0029	0 3193	0 0915	0 0033	0.3592
45	Sundaram Income Plus (D)	0 1392	0 0125	0 1404	-0 1757	1 1001	16 2384	-0 0327	0 0130	-0 0452
46	Sundaram Income Plus (G)	0 2022	0 0232	0 1758	0 1471	0 0253	-1 0584	-0 0075	-0.0026	-0 0438
47	Sundaram Money Fund (G)	0 9200	-0 2993	-5 0031	-0 4327	-0 6253	-109 6290	-1 1111	-0 1858	-3 2622
48	Sundaram Select Focus (D)	0 0756	0 0024	0 1540	0 2304	0 0137	1 3590	-0 0460	-0 0023	-0 2589
49	Sundaram Tax Saver (D)	-0 0808	-0 0021	-0 1640	0 1740	0 0139	1 1431	-0 0526	-0 0436	-4 7291
50	Sundaram Tax Saver 97	-0 0767	-0 0020	-0 1556	0 4364	0 0147	1 4420	0 0834	0 0027	0 2166
51	Tata Balanced Fund (D)	0 0935	0 0058	0 4616	0 3404	0 0170	1 0259	0 0672	0 0058	0 3573
52	Tata Balanced Fund (G)	0 0667	0 0031	0 2439	0 2771	0 0140	0 8958	0.1083	0 0095	0 4581
53	Tata Gilt Securities Fund (D)	0 1874	0 0215	0 3453	0 2070	-0 0977	0 7520	-0 4257	-0 0572	-0 2678
54	Tata Gilt Securities Fund (G)	0 1256	0 0162	0 2072	0 1320	0 3036	-0 1716	-0 3476	-0 0528	-0 2349
55	Tata Income Fund (G)	0 0697	0 0097	0 1153	0 1761	-0 0217	0 3296	0 0091	0 0020	0 0426
56	Tata Life Sci & Tech Fund (G)	0 0381	0 0029	0 5323	0 1227	0 0129	1 8503	0 2070	0 0085	0 7216
57	Tata pure Equity Fund (G)	-0 0111	-0 0007	-0 0848	0 2448	0 0186	1 6635	0 1798	0 0055	0 5519
58	Tata Select Pure Equity Fund (G)	0 0392	0 0022	0 5423	0 1598	0 0172	1 5657	0 1743	0 0057	0 5752
59	Tata Tax Saving Fund	-0 0078	-0 0021	-0 0437	0 3824	0 0153	1 4150	0 1669	0 0052	0 4664
60	Tata Young Citizens' Fund	0 1237	0 0734	15 9894	0 1105	0 0069	0 3647	0 0744	0 0023	0 1147
61	Taurus Discovery Fund	0 0962	0 0315	4 6577	0 2316	0 0091	0 9215	0 2066	0 0091	0 9836
62	Taurus Libra Bond	-0 0219	-0 0039	0 0198	0 0938	0 0061	-0 2238	0 0808	0 0174	0 0622
63	Taurus Libra Gilt	-0 0224	-0 0148	0 5025	0 1306	0 0163	-0 1715	-0 0336	-0 0084	-0 0983
64	Taurus Libra Tax Shield	0 0006	0 0000	0 0059	0 3172	0 0184	1 4580	0 2057	0 0107	1 3994
65	Taurus Star share	-0 0617	-0 0019	-0 1860	0 3371	0 0136	1 2661	0 2325	0 0103	1 0141

When we analyze data of table 5.49, it is observed that the performance of schemes as per Sharpe measure is superior to Treynor's performance. It is because Sharpe measure considers total risk taken by the fund in comparison to market. While Treynor's consider only systematic risk. A mutual fund scheme has better performance according to Treynor's, that may indicate inferior performance according to Sharpe measure. The reason is that the portfolio may have a relatively large amount of unique risk and Treynor's model is not affected by such risk. Only market risk is affected to Treynor's measure. Performance as per Jensen's measure is superior than Sharpe performance as well as Treynor's performance.

Tables 5.50A, 5.50B and 5.50C are the summary table of comparison of three models.

**Table: 5.50A SI Measure Compared With TM & JM**

Sharpe Measure ↓	Treynor's measure			Jensen's Measure		
	2003	2004	2005	2003	2004	2005
More then	58	58	61	7	13	15
Less Then	4	7	4	55	52	50
	62	65	65	62	65	65

The table 5.50A indicates that performance of mutual fund schemes is superior as per Sharpe measure. 4 schemes Out of 62 in 2003, 7 schemes out of 65 in 2004 and 4 schemes in 2005 have under performed as compared to Treynor's measure. This is may be due to large amount of unique risk involved by such schemes.

**Table: 5.50B Treynor's Measure Compared With SI & JM**

Treynor's Measure ↓	Sharpe measure			Jensen's Measure		
	2003	2004	2005	2003	2004	2005
More then	4	7	4	0	15	0
Less Then	58	58	61	62	50	65
	62	65	65	62	65	65

The table 5.50B indicates that performance of mutual funds schemes are inferior as per Treynor's measure as compared to Jensen's Measure in case 62 schemes in 2003, 50 schemes out of 65 in 2004 and 65 (100%) in 2005.

**Table: 5.50C Jensen's Measure Compared With SI & TM**

Treydor's Measure ↓	Sharpe measure			Treydor's Measure		
	2003	2004	2005	2003	2004	2005
More then	55	52	50	62	50	65
Less Then	7	13	15	0	15	0
	62	65	65	62	65	65

The table 5.50C indicates that performance of mutual funds schemes are Superior as per Jensen's measure as compared to Sharpe measure as well as Treynor's Measure during the study period. The reason behind this is that the Jensen's models measure absolute performance while Sharpe and Treynor's models relatively measure performance on risk-return basis. Thus, the investment performance is influenced by the performance measure used in the evaluation of investment performance.

## 5.9 ANALYSIS OF SAMPLE SURVEY OF INVESTORS AND INTERMEDIARIES:

The survey was conducted with the aim to know and examine the perception of investors about performance of mutual funds in India. The primary data has collected by conducting sample survey of 196 investors and 64 intermediaries from cities of Gujarat like Ahmedabad, Baroda, Rajkot, Khambhat, Surat, Gandhinagar and city out of Gujarat like Bombay. The survey of investors and intermediaries has been carried out with the help of prearranged questionnaire to collect necessary information directly from investors as well as intermediaries. The investment pattern and size of investment done by investors are studied in respect to various aspect and factors like age, occupation, income, level of risk , level of satisfaction, different investment avenues, objective, etc. and analysis carried out on the basis of such characters of sample investors & intermediaries .

The analysis is discussed as under:

### [A] PROFILE:

The survey has been conducted mainly in reference to Income groups, age structures and occupational groups.

#### 1. INCOME:

The sample investors are classified into yearly income groups as under:

1. Up to 2 lakh
2. Above 2 lakh

It is necessary to mention that above classification is purely random and used for the purpose of analysis so it becomes useful and easy to understand. The table 5.51 indicates that out of 196 respondents 164 (83.67%) have yearly income Rs. 2 lakh or less than Rs. 2 lakh. Where as 32 respondents (16.32%) have more than Rs.2 lakh yearly income. From the data it is cleared that the majority investors are from middle income group.

**Table: 5.51 Income Group – Wise Distribution Of Investors.**

Income Group	No. of Investors	%
≤ 2 lakh	164	83.67
> 2 lakh	32	16.32
Total	196	100.00

## 2. OCCUPATION:

The occupation of sample investors is divided among three groups:

1. Service
2. Business
3. Others.

The other includes person working in agriculture sectors, profession and labour contactors etc. Once again to disclose that this classification is purely arbitrary to come to meaningful comparison and conclusion. The respondents of agriculture and profession were very less therefore it is included in others category. The Maximum investors are from service sectors which is 47.96% (94) of total respondents. 33.67% of respondents (66) having their own business whereas 18.36 % (36) from others category. Among others: 6 are professionals, 8 from agriculture and 22 from others.

**Table: 5.52 Occupation – Wise Distribution Of Investors:**

Occupation	No. of Investors	%
Service	94	47.96
Business	66	33.67
Other	36	18.36
Total	196	100.00



**Table 5.53 Cross-Classification Of Investors According To Occupation And Income**

Income	Occupation						Total	
	Service		Business		Others		No.	%
	No. of Investors	%	No. of Investors	%	No. of Investors	%		
≤ 2 lakh	80	85.11	50	75.76	34	94.44	164	83.67
> 2 lakh	14	14.89	16	24.24	2	5.56	32	16.33
Total	94	100.00	66	100.00	36	100.00	196	100.00

Table 5.53 presents classification between occupation and income of sampled respondents. Irrespective of nature of occupation maximum investors fall in middle income group. Total 164 respondents in the income group up to 2 lakh, out of this highest number in case of other category followed by service sector and last Business sector. Whereas reverse result seen in higher income group like highest numbers fall in respect of business which is followed by service and others.

### 3. AGE GROUP:

The sample investors have been divided into following three age groups:

1. ≤ 35 years
2. > 35 yrs. ≤ 50 years.
3. > 50 yrs

Normally, up to the age of 35 years people are spending more and saving less. This age group is preferred to takes more risk for investment. At second stage, the investment profile changed. It is due to rise in the family expenses raised and fewer funds available to invest. Therefore, these age group investors invest in such instrument having a modest risk level. After the age of 50 years, people want safety and steady income i.e. they will prefer fixed income bearing investment instruments.

**Table: 5.54 Age- Wise Distribution Of Investors:**

Age-Group	No. of Investors	%
≤ 35 years	102	52.04
> 35 yrs. ≤ 50 years.	64	32.65
Other> 50 yrs	30	15.31
Total	196	100.00

The table shows that the majority of sample investors fall in first categories i.e. 52.04 % of total sample investors, 32.65 % respondents in second categories and 15.31 % in third categories.

**[B] SAVING PATTERN:**

Saving define as fund set aside and sacrifice present spending which turned to gain in future. Saving is the important factor for development of any country. Without saving it is quit difficult to achieved faster growth rate. Large amount of saving result in to more funds available for investment in various industries. If this saving is properly mobilized and channelised in productive way than country can achieve faster development. So it is important to assess and analysis the saving and investment trend of investors. Saving pattern has been assessed in three categories like Age-wise, Occupation-wise and Income group wise. Following tables indicates the saving pattern of sample investors.

**1. AGE GROUP WISE SAVING PATTERN:**

**Table: 5.55    Age Group wise Saving pattern**

Classification	High		Modest		Low		Total	%	Chi-Square Result & Probable value
	Number of Investors	%	Number of Investors	%	Number of Investors	%			
< 35 yrs.	2 (3.92)	2.04	74 (72.55)	37.76	24 (23.53)	12.24	102	52.04	14.66165 (0.00546)
> 35 yrs. ≤ 50 yrs.	12 (18.75)	6.12	28 (43.75)	14.29	24 (37.50)	12.24	64	32.65	
> 50 yrs	8 (26.67)	4.08	8 (26.67)	4.08	14 (46.67)	7.14	30	15.31	
Total	24		110		62		196	100.00	

# Figures in bracket indicate the percentage to total of particular age group.

# Figures in Percentage Column indicates percentage to total investors.

Table 5.55 depicts that are there total 196 respondents, out of these 102 are less than 35 years age, 64 are from 35 to 50 years and 30 are above 50 years of age. Among the age group up to 35 years, 3.92 % have high saving habits, 72.55 % have modest saving habit and 23.53 % have low saving habit. About the age group 35 to 50 years, 18.75 % have high, 43.75% have modest and 37.50 % have low saving habit. While incase of above 50 years, 26.67% have high, 26.67 % have modest and 46.67 % have low saving habit. Chi-square result arrived 0.00546 which less than 0.05. It means there is association between age group and

saving habits. The table indicates that at the age up to 35 year saving habit is 2.04 % which less than age group of 35 to 50 years. After the age of 50 years saving habit decline may be due retirements, sources of income decrease and expenses increased.

## 2. OCCUPATION WISE SAVING PATTERN :

**Table: 5.56 Occupation Wise Saving pattern**

Classification	High		Modest		Low		Total	%	Chi-Square Result & Probable value
	Number of Investors	%	Number of Investors	%	Number of Investors	%			
Service	12 (12.77)	6.12	48 (51.06)	24.49	34 (36.17)	17.35	94	47.96	4.63986 (0.32628)
Business	12 (18.18)	6.12	38 (57.58)	19.39	16 (24.24)	8.16	66	33.67	
Others	0	0.00	24 (66.67)	12.24	12 (33.33)	6.12	36	18.37	
Total	24		110		62		196	100.00	

# Figures in bracket indicate the percentage to total of particular Occupation group.

# Figures in Percentage Column indicates percentage to total investors.

According to the Chi-square test, value of the result is more than 0.05, so there is no association between saving and occupation. Service and Business group have equal high saving habit. 6.12 % of each service and business categories have high saving habit and others category respondents don't have high saving habit. 24.49 %, 19.39 % and 12.24 % of service group, business group and others group have modest saving habit respectively. While 17.35 % of service category, 8.16 % of Business category and 6.12 % of others category registered their low saving habit. This trend shows that the saving habit is independent of occupation.

## 3. INCOME WISE INVESTMENT PATTERN:

**Table: 5.57 Income Group Wise Saving pattern**

Classification	High		Modest		Low		Total	%	Chi-Square Result & Probable value
	Number of Investors	%	Number of Investors	%	Number of Investors	%			
≤ 2 lakh	12 (7.32)	6.12	96 (58.54)	48.98	56 (34.15)	28.57	164	83.67	11.48517 (0.00321)
> 2 lakh	12 (37.5)	6.12	14 (43.75)	7.14	6 (18.75)	3.06	32	16.33	
Total	24		110		62		196	100.00	

# Figures in bracket indicate the percentage to total of particular income group.

# Figures in Percentage Column indicates percentage to total investors.

Out of 164 investors of income up to 2 lakh, 7.32 % have high saving habit, 58.54 % have modest and 34.15 % have low saving habits. In case of investors having yearly income more than 2 lakh, 37.5 % have high, 43.75% have modest and 18.75% have low saving habit. When we considered percentage of saving to total respondents, it is cleared that investors of income up to 2 lakh have more saving habit than high income group. Chi-square result also indicate same trend with result 0.00321 which is less than 0.05. Therefore we can say that saving habit is associated with level of income.

**[C] INVESTMENT PATTERN:**

Investment means the sacrifice of current consumption for future. Investment is the employment of funds on assets with the aim of earning income or capital appreciation. Survey has been covered investment trend of respondents in different investment avenue including mutual fund. The result of survey are presented and analysed according to age, occupation and occupation across the various investment instruments. Following tables disclose the investment pattern of respondents.

**Table: 5.58 Investment in Different Avenues.**

Investment Avenue	No. of respondents	%
Bank	96	49.48
Equity Shares	136	70.10
Debentures	34	17.53
Govt. Securities	48	24.74
Mutual Fund	74	38.14
Gold & Silvers	14	7.22
Real-Easted	24	12.37

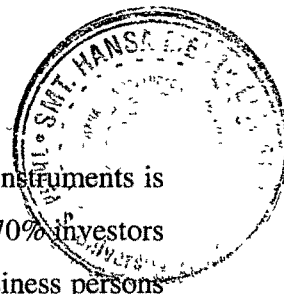
The table 5.58 indicate that highest respondents have invested their funds in equity market (70.10%) followed by Bank (49.48%), Mutual fund (38.14%), Govt. Securities (24.74%). The least investment seen in case of Gold & Silver from sample investors. Many respondents have invested more than one instrument which considered in this table.

**Table: 5.59 Distribution Of Investors According To The Types Of Investment Avenue And Different Groups.**

Classification	Bank		Equity Shares		Debentures		Govt. Securities		Mutual Fund		Gold & Silvers		Real Estate		Total	
	No	%	No	%	No	%	No.	%	No	%	No.	%	No	%	No	%
<b>AGE-Wise</b>																
< 35 yrs	50	49.02	78	76.47	14	13.73	26	25.49	36	35.29	10	9.80	8	7.84	102	100
> 35 ≤ 50 yrs.	38	59.38	36	56.25	12	18.75	18	28.13	30	46.88	2	3.13	4	6.25	64	100
> 50	8	28.57	22	78.57	8	28.57	4	14.29	8	28.57	2	7.14	12	42.86	28	100
<b>Total</b>	96	49.48	136	70.10	34	17.53	48	24.74	74	38.14	14	7.22	24	12.37	194	100
<b>Occupation-Wise</b>																
Service	58	61.70	56	59.57	12	12.77	32	34.04	46	48.94	6	6.38	6	6.38	94	100
Business	32	48.48	52	78.79	16	24.24	10	15.15	22	33.33	8	12.12	12	18.18	66	100
Others	6	17.65	28	82.35	6	17.65	6	17.65	6	17.65			6	17.65	34	100
<b>Total</b>	96	49.48	136	70.10	34	17.53	48	24.74	74	38.14	14	7.22	24	12.37	194	100
<b>Income-Wise</b>																
≤ 2 lakh	92	56.79	110	67.90	28	17.28	44	27.16	58	35.80	10	6.17	16	9.88	162	100
> 2 lakh	4	12.50	26	81.25	6	18.75	2	6.25	16	50.00	4	12.50	8	25.00	32	100
<b>Total</b>	96	49.48	136	70.10	34	17.53	48	24.74	74	38.14	14	7.22	24	12.37	194	100

### 1. IN RELATION TO AGE:

In term of age group the most popular instrument is equity shares and second is bank instrument. Mutual Fund stood at third followed by govt.securities and debentures for to 35 year's age group. Among the age group 35 to 50 years, first priority is bank. It has attracted 59.38 % investors while equity shares stood at second with holding 56.25 % which followed by mutual fund. Lowest number of this age group has invested in gold & silver. The investors having age above 50 years, maximum respondents have invested in equity shares (78.57%) and real estate attracted 42.86 % investors of the same age group. Further from the table it is cleared that around half of the investors of all three age categories have invested in equity. It is significant to note that the highest age group's investment is totally different from rest of age-group. It indicates that age factor does not have significant effect on the investing behaviour of the investors. This is also confirmed by Chi-square test.



## 2. IN RELATION OF OCCUPATION:

Table 5.59 reveal that among the service occupation most popular instruments is bank deposits as per survey result. Fixed Deposits have attracted 61.70% investors of service sector. Equity share is the second popular instrument. Business persons give lowest preference to investment in gold & silver and real estate. The investment of other category investors is totally in different than rest of two category. Equity share is also popular investment instrument in case of others. However, equity shares remained more popular among all categories which cached nearly 60 to 82 % investors. The trends of different occupation's investors indicate that nature of occupation affected the decision of investor regarding the selection of investment instruments. As per Chi-square test, it has applied at 5 % and 1 % levels of significance. It is true at 5 % level of significance but not at 1 % level of significance.

## 3. IN RELATION TO INCOME:

Investment with reference to income does not have much different from other categories. It is more or less same like age and occupation categories pattern. Equity shares remain first priority, Bank at second, mutual fund at third and govt. securities at fourth position in regard to choice of investors having yearly income up to Rs. 2 lakh. The preference of investors having income more than Rs. 2 lakh is different than first category. But an equity share has been first priority for them, Mutual fund is second, real estate third and Debenture fourth most popular instrument for income group of more than Rs.2 lakh. The pattern indicates that the investor's behaviour for selection of investment instrument significantly depends on level of Income.

## [D] OBJECTIVE OF INVESTMENTS IN MUTUAL FUNDS:

Investors have a specific objective to invest their savings in mutual funds. Investor interest to invest in mutual funds is varying in nature. Here we have classified investors in various categories as per their prime objective to invest in mutual funds. For the convenience it has been divided as under:

- |                    |                    |           |
|--------------------|--------------------|-----------|
| 1.a Regular income | 1.b Growth         | 1.c Both  |
| 2.a Highly liquid  | 2.b Profitable     | 2.c Both  |
| 3.a Tax saving     | 3.b Non-Tax saving | 3.c Both. |

**Table: 5.60 Distribution Of Investors According To Objective of Investment In M. F.**

Objective	No. of Investors	%
1-A Regular Income	30	16.13
1-B Growth	72	38.71
1- C Both	84	45.16
Total	186	100
2- A Highly Liquid	14	7.53
2- B Profitable	88	47.31
2 -C Both	84	45.16
Total	186	100
3- A Tax Saving	88	47.31
3- B Non-Tax Saving	34	18.28
3- C Both	58	31.18
Total	180	100

Table 5.60 present the data according to investment objective of sample investors. It reveals that Maximum investors prefer to invest in regular income and income-growth. 47.31% have invested with objective of profitability and 45.16 % choose highly liquid and profitability both. While only high liquid objective attracted 7.53%. Least priority given to liquidity and high priority to profitability. Regarding tax rebate, majority of investors have selected instruments having tax -saving objective. 34 % prefer non-tax saving while investing in mutual funds.

**Table: 5.61 Distribution Of Investors According To Age And Objective.**

Objective	Age-Structure						Total	%
	< 35 yrs.		>35 ≤ 50 yrs.		> 50 ≤ 60 yrs.			
	No of Investors	%	No. of Investors	%	No of Investors	%		
1-A Regular Income	6	6.12	20	32.26	4	15.38	30	16.13
1-B Growth	48	48.98	20	32.26	4	15.38	72	38.71
1- C Both	44	44.90	22	35.48	18	69.23	84	45.16
Total	98	100.00	62	100.00	26	100.00	186	100
2- A Highly Liquid	2	2.04	6	9.68	6	23.08	14	7.53
2- B Profitable	54	55.10	28	45.16	6	23.08	88	47.31
2 -C Both	42	42.86	28	45.16	14	53.85	84	45.16
Total	98	100.00	62	100.00	26	100.00	186	100
3- A Tax Saving	50	52.08	32	53.33	6	25.00	88	48.89
3- B Non -Tax Saving	16	16.67	14	23.33	4	16.67	34	18.89
3- C Both	30	31.25	14	23.33	14	58.33	58	32.22
Total	96	100.00	60	100.00	24	100.00	180	100

Table 5.61 reveals the pattern of investment according to age structure and prime objective of investing in mutual fund. Review of table shows the fact that majority of investor have accepted both jointly regular income and growth in income except age group of up to 35 years. While almost equal priority is given separately to Regular income and Growth. The Liquidity of investment is important objective of mutual funds, 2.04%, 9.68 % and 23.08 % of sample respondents considered as prime objective of investments which is very less as compared to rest. Majority of respondents among all age groups have treated both liquidity and profitability as prime objective of investment. Tax saving objective remain more favourable among the first two age group, whereas tax saving and non tax saving both are found a choice among the age group above 50 years.

**Table: 5.62 Distribution Of Investors According To Occupation And Objective Of Investment:**

Objective	Occupation							
	Service		Business		Others		Total	%
	No. of Investors	%	No of Investors	%	No of Investors	%		
1-A Regular Income	18	19.57	8	12.50	4	13.33	30	16.13
1-B Growth	46	50.00	18	28.13	8	26.67	72	38.71
1- C Both	28	30.43	38	59.38	18	60.00	84	45.16
Total	92	100.00	64	100.00	30	100.00	186	100.00
2- A Highly Liquid	8	8.70	6	9.38	0	0.00	14	7.53
2- B Profitable	54	58.70	22	34.38	12	40.00	88	47.31
2- C Both	30	32.61	36	56.25	18	60.00	84	45.16
Total	92	100.00	64	100.00	30	100.00	186	100.00
3- A Tax Saving	54	60.00	22	35.48	12	42.86	88	48.89
3- B Non-Tax Saving	6	6.67	20	32.26	8	28.57	34	18.89
3- C Both	30	33.33	20	32.26	8	28.57	58	32.22
	90	100.00	62	100.00	28	100.00	180	100.00

The investment objectives with reference to occupation presented in table 5.62. The trend shows that the majority of investors from the business and other category have given priority to both Regular income and growth in income, while half of service sectors investors' prime objective is for growth in income. The percentage of investors those who have prime objective of regular income and growth income is nearly double than growth objective in case of business and others. Regarding regular income objective, reverse trend has been observed.



From the objective pattern, it is made clear that objective of investing in mutual funds is significant to occupational investors.

Among the highly liquid and profitable objective, the profitable objective remain more popular among all occupational investors. Preference to liquidity compared to profitability is very low, it is nearly 9 % only. Whereas profitability secured about 35% to 58 % as prime objective. The combination of liquidity and profitability is at first priority among business and others categories. The data indicate that there is association between investment objective and occupation.

Priority between tax saving and non-tax saving objective, the majority respondents have selected tax saving. Amongst that higher percentage fall in service sector. Business and others category investors have invested more in non tax saving instruments as compared to service sectors. 33.33% of service sectors investors gave priority to both tax saving and non tax saving objective, 32.26 % and 28.57% by business and others categories respectively. Service sectors investors are highly associated with objective of tax saving where as rest category investors investment does not.

**Table: 5.63    Distribution Of Investors According To Income And Objective Of Investment:**

Objective	Income					
	≤ 2 lakh		> 2 lakh		Total	%
	No.	%	No.	%		
1-A Regular Income	26	16.88	4	12.50	30	16.13
1-B Growth	58	37.66	14	43.75	72	38.71
1- C Both	70	45.45	14	43.75	84	45.16
Total	154	100.00	32	100.00	186	100.00
2- A Highly Liquid	8	5.19	6	18.75	14	7.53
2- B Profitable	74	48.05	14	43.75	88	47.31
2 -C Both	72	46.75	12	37.50	84	45.16
Total	154	100.00	32	100.00	186	100.00
3- A Tax Saving	80	54.05	8	25.00	88	48.89
3- B Non -Tax Saving	28	18.92	6	18.75	34	18.89
3- C Both	40	27.03	18	56.25	58	32.22
	148	100.00	32	100.00	180	100.00

Table 5.63 shows weather the objective of investment is significantly associated or not with different level of income group. Around 45 % investors

form both category have preferred regular income and growth objective as prime objective. Second priority is given to growth income and third to regular income objective. It is associated with investment objective.

When we analysed highly liquid and profitable objective, the preferred objective is profitable objective and combination of highly liquid & profitable objective comes afterwards. Investors have selected only liquidity as prime objective.

Further, the tax saving and non-tax saving also examined across different income group. Tax saving objective has been important for income group up to Rs.2 lakh, while combination of tax saving and non-tax saving objective for income group above Rs. 2 lakh. The table disclose the fact that 80% of income group up to Rs.2 lakh goes towards tax benefits objective while that is 25% in case of income group above Rs. 2lakh. From above observation, tax saving and non tax saving objective significantly associated to income level.

**[E] SECTOR PREFERENCE OF INVESTORS:**

Table 5.64 gives brief idea about preference for mutual fund among different age groups of respondents. Higher priority is given to bank sponsored mutual fund by first two groups and above 50 years group gave highest priority to private sectors mutual fund. Institutional sectors remain at bottom level. Overall private sector mutual funds secured 40 % investors, 38.89 % by bank sponsored mutual fund and 21.11 % by institutional sponsored mutual funds. The chi-square test at 0.05 level of significance factors that selection of sector depends on age of investors.

**Table: 5.64 Sector -Wise Preference Of Investors Based On Age Groups.**

Sector	Age Group			
	Upto 35 yrs.	35-50 yrs.	50 yrs.& above	Total
Private Sector	34	22	16	72
	38.64	34.38	57.14	40
Bank Sponsored	36	30	4	70
	40.91	46.88	14.29	38.89
Institutional Sponsored	18	12	8	38
	20.45	18.75	28.57	21.11
Total	88	64	28	180
%	100.00	100.00	100.00	100.00

Table 5.65 gives vivid trend about selection of mutual fund sector according to different occupations of investors. Private sector is prefer maximum by others categories ( 57.14%) followed by business and service, same observation found in case of institutional sponsored mutual funds. Reverse result are observed in case of bank sponsored mutual funds. Bank sponsored funds seem to have attracted service sectors investors. While Private sector funds and institutional funds attracted others categories investors like professionals, agriculturist etc. It is evident from the table that Private sector funds and institutional funds are significantly associated with others and business. Whereas bank sponsored funds is significantly associated with service sectors investors.

**Table: 5.65 Sector -Wise Preference Based On Occupation**

Sector	Occupation			
	Service	Business	Others	Total
Private Sector	22	34	16	72
	26.83	48.57	57.14	40
Bank Sponsored	52	16	2	70
	63.41	22.86	7.14	38.89
Institutional Sponsored	8	20	10	38
	9.76	28.57	35.71	21.11
Total	82	70	28	180
%	100.00	100.00	100.00	100.00

**[F] SOURCE OF INFORMATION FOR INVESTORS:**

Investors get the information from brokers, agents, T.V. news paper, friends and relatives etc. Investor gets such information to take decision about selection of investment instruments. Therefore information must be correct, reliable and timely. Sources of information evaluated according to age, occupation and income. The age-wise, occupation wise and income group-wise varies among the sample investors with regards to their choice about the importance of various sources of information presented in table 5.66.

**Table: 5.66 Sources of Information.**

Classification	News-paper & Magazine		Agent & Broker		T.V		Fact-Sheet & Prospectus		Friends & Relatives		Total	%
	No.	%	No	%	No	%	No.	%	No.	%		
AGE-Wise												
< 35 yrs.	76	77.55	22	22.45	8	8.16	24	24.49	22	22.45	98	100
> 35 ≤ 50 yrs.	38	63.33	34	56.67	20	33.33	12	20.00	6	10.00	60	100
> 50 ≤ 60 yrs.	16	61.54	14	53.85	10	38.46	12	46.15	2	7.69	26	100
Total	130	70.65	70	38.04	38	20.65	48	26.09	30	16.30	184	100
Occupation-Wise												
Service	74	75.51	36	36.73	24	24.49	18	18.37	18	18.37	98	100
Business	42	70.00	28	46.67	14	23.33	20	33.33	6	10.00	60	100
Others	14	53.85	6	23.08	0	0.00	10	38.46	6	23.08	26	100
Total	130	70.65	70	38.04	38	20.65	48	26.09	30	16.30	184	100
Income-Wise												
≤ 2 lakh	110	72.37	52	34.21	30	19.74	38	25.00	28	18.42	152	100
> 2 lakh	20	62.50	18	56.25	8	25.00	10	31.25	2	6.25	32	100
Total	130	70.65	70	38.04	38	20.65	48	26.09	30	16.30	184	100

## 1. IN RELATION TO AGE:

Table 5.66 present that highest investors (77.55%) receive information from news-paper and magazines, it is most popular among the age group up to 35 years. 22.45 % .8.16 %,24.49 % and 22.45 % of investors get information from agent & brokers, T.V, fact-sheet, and friends & relatives respectively. Almost same pattern is observed regarding rest of group. The analysis can be put as information sources does not significantly associated with age groups.

## 2. IN RELATION TO OCCUPATION:

According to occupation analysis brings similar results for age groups. News-paper & Magazine is important sources irrespective of any occupational categories. It is significant to note that in case of others, T.V. failed to provide information about mutual funds. Agent and broker considered second important sources of information in case of business and service sectors investors. Thus, the order of importance of sources remains more or less same to age groups.

### 3. IN RELATION TO INCOME:

Result received regarding income groups is similar to result of age and occupation. In terms of percentage, the importance of brokers has increased as compared to age groups and occupational groups. 52 % of sample investors are obtaining information from agents and brokers about investment in mutual funds. Thus sources of information do not have impact over the income groups for their investment behaviours.

Overall, 70.65 % of investors have assign importance to news-paper and magazines, followed by broker/sub-brokers (38.65%), fact-sheet and prospectus (26.09%), T.V. (20.65%) and Friends and relatives (16.03%).

### [G] RANKING OF SELECTED SCHEMES:

The survey of sample intermediaries carried out with different objectives. Intermediary is the link between the investors and mutual funds company. Therefore it is important to study their views and opinion regarding various aspect of investment in mutual funds. Ranking of selected schemes is one of important aspect. For survey purpose, all schemes are divided in 8 different categories like:

1. Equity Fund
2. Tax saving fund
3. Income fund
4. Growth fund
5. Balanced fund
6. Sector fund
7. Money Market fund
8. Gilt fund

Table 5.67 presents the preference of sample intermediary towards various schemes. Here an effort is made to give rank to different schemes with the help of mean. The scheme which has less mean gets highest rank and vice-versa. The mean of Equity fund has 1.5 which is lowest among all categories, therefore first preference given by intermediaries for investment to it. Growth fund occupied second position with mean 2, followed by tax saving fund (2.1), balanced fund (3.8), income fund (4.1), sector fund (5.1), money market fund (5.1), and gilt fund (5.9). Importance of gilt fund is declined, may be, because of rate of interest on

government securities decreased. Sector fund is still popular in India, it is at primary stage.

**Table: 5.67    Ranking of Various Types of Fund based on Mean**

Types of Fund	MEAN
Equity Fund	1.5
Tax Saving Fund	2.1
Income Fund	4.1
Growth Fund	2
Balanced Fund	3.8
Sector Fund	5.1
Money Market Fund	5.1
Gilt Fund	5.9

**[H] INTERMEDIARY’S INSIGHT ABOUT FUTURE PROSPECTS OF  
MUTUAL FUND INDUSTRY IN INDIA.**

It is very difficult to forecast or to make prediction about future of mutual fund in the fast changing domestic and international financial environment. Growth of mutual funds depends on performance of equity market. Equity market depends upon various factors. Frequent changes occur in these factors. In such situation, how fund manger manage their funds tact fully is important. But even though, the belief of intermediaries in this respect can be expected to offer a rational direction. The response in this regard divided in four alternatives. The result of survey indicates that 46.88 % of sample intermediaries have perception that mutual funds industry has very bright future. 43.75 % have their opinion about future is bright. While not a single intermediary has thought of dark future of mutual fund. Further, 9.38 % doesn’t have any idea about the future of mutual funds.

**Table: 5.68 Opinion of Intermediaries Regarding The Future Of Mutual Fund Industry in India.**

Opinion	No. of Intermediaries	%
Very Bright	30	46.88
Bright	28	43.75
Dark	0	0.00
Can't say	6	9.38
Total	64	100.00

## 5.10 CONCLUSION:

Number of attempts have been made to evaluate investment performance of selected schemes of Indian private sectors mutual funds in respect to Sharpe Measure, Treynor's Measure and Jensen's measure. The investment performance of selected schemes is evaluated in term of risk and return. The investment performance measure examined, evaluated and analyzed as per different categories viz company wise, fund-class wise and overall rank wise. In addition, investment performance has evaluated in term of differential return of Sharpe measure and Treynor's measure. Here differential return means different between performance as per particular model and benchmark return.

A significant majority (98.39 %) of selected schemes have produced superior performance in term of Sharpe measure in 2003 as compared to average weekly market return, whereas reverse trends observed in 2004. While only 3.08 % schemes have reported superior performance in term of Sharpe Measure in 2005. Sharpe differential return also show same trend like in 2003, 91.94 % schemes have declared their result better than benchmark return. In 2004, 86.15 % schemes have experienced inferior performance. While in 2005, 43.08 % schemes get success to earned more than that of benchmark return.

96.77 % schemes in 2003, 1.54 % schemes in 2004 & 2005 experienced superior return over average weekly market return as per Treynor's measure. The same holds in term of Treynor's differential return. 76.19 % balance schemes, 66.67 % of ELSS & Income schemes, 75.94 % Equity schemes, 59.56 % Gilt schemes and 26.67 % money market schemes have experienced superior performance in term of Treynor's measure in reference to overall average performance. Almost all categories have represented about 66.67 % inferior performance as compared to benchmark return in reference to overall average performance.

As per Jensen measure, 91.94 % schemes in 2003, 33.85 % schemes in 2004 and 38.47 % schemes in 2005 have registered their superior result as compared to average weekly market return. Balance schemes experienced 80.95 % superior performance, which is highest among all categories and money market schemes have registered 33.33 % superior performance that is lowest among all categories.

All three models, the performance Tata mutual fund's selected schemes is better in term of overall percentage than rest of selected company. It is interesting to note that among fund class categories, all three models disclose different types of schemes having top performance in term of overall performance. Balance schemes are at top in case of Sharpe's measure and Jensen's measure, while equity schemes are at top in case of Treynor's measure. The investment performance of same selected schemes is different as per different measure. Thus, the investment performance is influenced by the performance measure used in the evaluation of investment performance.

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