



## Test of Sharpe And Treynor Ratio on Selected Mutual Fund Schemes

### KEYWORDS

Financial market, mutual funds, portfolio returns, performance, risk measures.

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**ABSTRACT** *Mutual Fund is one of the most preferred investment alternatives for the small investors as it offers an opportunity to invest in a diversified, professionally managed portfolio at a relatively low cost. The paradigm shift towards mutual funds assumed greater importance ever since the financial sector gained momentum under the globalized and liberalized environment. Each mutual fund has its own investment objective such as capital appreciation, high current income or money market income. A mutual fund generally states its own investment objectives and investors as a part of their own investment strategies; choose the appropriate mutual fund for investment. The performance of the mutual funds products becomes more complex in context of accommodating both risk and return measurement while giving due importance to investment objectives.*

### INTRODUCTION

A mutual fund is just the connecting bridge or a financial intermediary that allows a group of investors to pool their money together with a predetermined investment objective. The mutual fund will have a fund manager who is responsible for investing the gathered money into specific securities (stocks or bonds). When you invest in a mutual fund, you are buying units or portions of the mutual fund and thus on investing becomes a shareholder or unit holder of the fund.

Mutual funds are considered as one of the best available investments as compare to others they are very cost efficient and also easy to invest in, thus by pooling money together in a mutual fund, investors can purchase stocks or bonds with much lower trading costs than if they tried to do it on their own. But the biggest advantage to mutual funds is diversification, by minimizing risk & maximizing returns.

### Structure of Mutual Funds

Mutual Fund is set-up in the form of a trust, which has

- Sponsor
- Trustees
- Asset Management Company (AMC)
- Custodian

The trust is established by sponsor(s), who is like the promoter of a company. The trustees of the mutual funds hold its property for the benefit of the unit holders. The AMC manages the funds by making investments in various types of securities. The custodian holds the securities of various schemes of the fund in the custody. The trustees are vested with the general power of supervision and direction over AMC and they monitor the performance and compliance of the SEBI regulations by the mutual funds.

The flow chart below describes broadly the working of a mutual fund:



### REVIEW OF LITERATURE

**Singh and Singla (2000)** in their study evaluated the investment performance of 12 growth oriented mutual funds on a monthly basis from 1992 to 1996 by applying mean return, Sharpe, Treynor and Jensen measures. The BSE National Index was used as the proxy for market index. The study highlighted that average monthly return for the sample schemes was -.0766 as against monthly market return of .0027. On the basis of Sharpe index the average value of 12 mutual funds was -0.142 and the same was -0.926 in case of market index.

**Raju and Rao (2008)** in their paper evaluated the performance of selected Indian mutual fund schemes in terms of five performance measures (a) Sharpe ratio (b) Treynor ratio (c) Jensen measure (d) Sharpe differential return measure (e) Fama's components of investment performance using adjusted monthly NAV of 60 schemes from 10 mutual funds for the five year period, that is, from April 2000 to March 2005.

**Gill and Arshdeep (2012)** in their study investigated the selectivity and market timing ability of mutual fund managers in India by using the Jensen, Treynor and Mazuy and Henriksson and Merton models for the period 2002-06. The study was based on a sample of 97 open-ended mutual fund schemes consisting of 56 growth schemes and 41 schemes of dividend option. The empirical evidence revealed that fund managers of some of the selected mutual fund schemes were engaged in micro forecasting.

### RESEARCH METHODOLOGY

For the purpose of the study, data has been collected from secondary sources which include the Capital Market, Chartered Financial Analyst, Outlook, SEBI annual reports, RBI Reports on Currency and Finance, RBI Bulletin, Management Accountant, Portfolio Organizer, Economic and Political Weekly, Finance India etc. For evaluating market return and risk, S&P CNX Nifty, BSE Sensex, BSE 100, BSE 200 have been taken as benchmark indices. The study covers the period from 2005-06 to 2013-14. For analysis of data, percentage, average weighted scores, Chi-square test and Kendall's coefficient of Concordance (W) have been used.

**ANALYSIS AND DISCUSSION****COMPARISON OF SHARPE MEASURE WITH BENCHMARK INDICES**

The selected schemes under study have been evaluated using the Sharpe measure and results have been compared with the benchmarks to know whether selected schemes outperformed or underperformed the market. As per Table 1, majority of the schemes outperformed benchmark on the basis of Sharpe measure up to year 2008-09 except in the year 2005-06 and 2008-09 when these schemes underperformed BSE 200 and BSE Sensex respectively. From 2009-10 onwards majority of schemes underperformed all the benchmarks except S&P CNX Nifty in 2011-12, BSE Sensex in 2010-11, 2011-12 and 2012-13, BSE 100 and BSE 200 from 2011-12 to 2013-14.

**COMPARISON OF TREYNOR MEASURE WITH BENCHMARK INDICES**

The schemes under study have been evaluated using the Treynor measure and results have been compared with the benchmarks to know whether the selected schemes outperformed or underperformed the market. Table 2 highlights that majority of the schemes outperformed all the benchmark indices on the basis of Treynor measure upto year 2008-09 except in 2005-06 when these schemes underperformed BSE 200. From 2009 -10 onwards, majority of schemes underperformed the benchmark S&P CNX Nifty and BSE Sensex except in 2010-11 (in case of S&P CNX Nifty and BSE Sensex) and 2012-13 (in case of BSE Sensex). On the other hand, majority of schemes underperformed the benchmark BSE 100 and BSE 200 during most part of the study except 2011-12 (in case of BSE 200), 2012-13 (in case of BSE 100 and BSE 200) and 2013-14 (in case of BSE 100).

**Table 1**  
**Comparison of Sharpe's Measure with Benchmark Indices**

Year↓	SI- S&P CNX Nifty		SI-BSE Sensex		SI-BSE 100		SI-BSE 200		Total No. Of Schemes
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	
2005-06	39(86.67)	6(13.33)	41(91.11)	4(8.89)	30(66.67)	15(33.33)	18(40.00)	27(60.00)	45
2006-07	43(86.00)	7(14.00)	41(82.00)	9(18.00)	37(74.00)	13(26.00)	28(56.00)	22(44.00)	50
2007-08	42(84.00)	8(16.00)	40(80.00)	10(20.00)	36(72.00)	14(28.00)	36(72.00)	14(28.00)	50
2008-09	33(66.00)	17(34.00)	21(42.00)	29(58.00)	33(66.00)	17(34.00)	37(74.00)	13(26.00)	50
2009-10	19(38.00)	31(62.00)	4(8.00)	46(92.00)	17(34.00)	33(66.00)	20(40.00)	30(60.00)	50
2010-11	23(46.00)	27(54.00)	38(76.00)	12(24.00)	23(46.00)	27(54.00)	23(46.00)	27(54.00)	50
2011-12	27(54.00)	23(46.00)	32(64.00)	18(36.00)	32(64.00)	18(36.00)	32(64.00)	18(36.00)	50
2012-13	20(40.81)	29(59.18)	30(61.22)	19(38.77)	32(65.30)	17(34.69)	31(63.26)	18(36.73)	49
2013-14	16(33.33)	32(66.67)	20(41.67)	28(58.33)	28(58.33)	20(41.67)	25(52.08)	23(47.92)	48

**Note:**

1. Figures in table show the number of mutual fund schemes
2. Figures in parentheses denote percentage with respect to total number of schemes.
3. SI-S&P CNX Nifty means difference of Sharpe value of scheme and S&P CNX Nifty.
4. SI-BSE Sensex means difference of Sharpe value of scheme and BSE Sensex.
5. SI-BSE 100 means difference of Sharpe value of scheme and BSE 100.
6. SI-BSE 200 means difference of Sharpe value of scheme and BSE 200.

**Table 2**  
**Comparison of Treynor's Measure with Benchmark Indices**

Year↓	TI- S&P CNX Nifty		TI-BSE Sensex		TI-BSE 100		TI-BSE 200		Total No. Of Schemes
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	
2005-06	33(73.33)	12(26.67)	35(77.78)	10(22.22)	28(62.22)	17(37.78)	17(37.78)	28(62.22)	45
2006-07	50(100.00)	0	46(92.00)	4(8.00)	40(80.00)	10(20.00)	30(60.00)	20(40.00)	50
2007-08	40(80.00)	10(20.00)	39(78.00)	11(22.00)	36(72.00)	14(28.00)	36(72.00)	14(28.00)	50
2008-09	34(68.00)	16(32.00)	27(54.00)	23(46.00)	33(66.00)	17(34.00)	37(74.00)	13(26.00)	50
2009-10	20(40.00)	30(60.00)	4(8.00)	46(92.00)	19(38.00)	31(62.00)	20(40.00)	30(60.00)	50
2010-11	26(52.00)	24(48.00)	40(80.00)	10(20.00)	24(48.00)	26(52.00)	24(48.00)	26(52.00)	50
2011-12	20(40.00)	30(60.00)	21(42.00)	29(58.00)	23(46.00)	27(54.00)	27(54.00)	23(46.00)	50
2012-13	22(44.89)	27(55.10)	32(65.31)	17(34.69)	35(71.43)	14(28.57)	32(65.31)	17(34.69)	49
2013-14	16(33.33)	32(66.67)	17(35.42)	31(64.58)	27(56.25)	21(43.75)	24(50.00)	24(50.00)	48

**Note:**

1. Figures in table show the number of mutual fund schemes
2. Figures in parentheses denote percentage with respect to total number of schemes.
3. TI-S&P CNX Nifty means difference of Treynor value of scheme and S&P CNX Nifty.
4. TI -BSE Sensex means difference of Treynor value of scheme and BSE Sensex.
5. TI -BSE 100 means difference of Treynor value of scheme and BSE 100.
6. TI -BSE 200 means difference of Treynor value of scheme and BSE 200.

**CONCLUSION**

The models devised by Sharpe, Treynor have been applied to evaluate the performance of sample schemes. The performance measure suggested by Treynor (1965) is based on the concept of characteristics lines. It is interpreted as stating the reward (return minus the risk-free rate) in relation to a systematic risk, i.e. beta risk. The performance measure evolved by Sharpe (1966) is based on capital asset pricing model (CAPM). It is an excess return earned over risk free return per unit of risk involved i.e. per unit of standard deviation. The Sharpe measure adjusts portfolio performance by total risk rather than beta risk. Sharpe's logic for introducing total risk instead of beta lies with the assumption behind the beta risk.

**REFERENCE**

Singh, Pritpal and Singla, S.K. (2000), "Evaluation of Performance of Mutual Funds using Risk Return Relationship Models", The Indian Journal of Commerce, Vol. 53, No. 3, pp. 54-59. | Raju, B. Phaniswara and Rao, K. Mallikarjuna (2008), "Performance Evaluation of Selected Indian Mutual Fund Schemes", The Indian Journal of Commerce, Vol. 61, No. 3, pp. 70-82. | Gill, Suveera and Arshdeep (2012), "Selectivity and Market Timing Ability of Mutual Fund Managers in India: An Empirical Investigation", Prajnan, Vol. XLI, No. 1, pp. 21-41. | [www.amfindia.com](http://www.amfindia.com) | [www.birlasunlife.com](http://www.birlasunlife.com) | [www.bseindia.com](http://www.bseindia.com) | [www.camsonline.com](http://www.camsonline.com) | [www.capitalmarket.com](http://www.capitalmarket.com) |