A STUDY ON APPLICATIONS OF RETURN AND RISK- ADJUSTED THEORETICAL PARAMETERS OF MUTUAL FUNDS IN INDIA

M. Gangu Naidu* P. Raja Babu** and V. Isreal Raju***

Abstract: *Mutual fund provides a readymade option to households for portfolio diversification as well as relative risk aversion through collecting and investing their saving in different risk-return profile instruments. Its performance depends on the performance of underlying portfolio. If one or more schemes perform badly in the portfolio, that can effect or hurt the investment decisions of investors and may get them out from the scenario of wealth creation process. For saving investors' money from such a hazard, it becomes necessary to evaluate the performance of mutual fund portfolio so that investors can take/judge their investment decisions rationally. This evaluation would help in checking the prime idea of "putting all eggs in different baskets" behind mutual funds and guessing that how far this idea is doing well for investors. Therefore, our study has attempted to evaluate the comparative performance of among UTI, SBI, ICICI, HDFC mutual fund schemes in terms of risk-return measures (Average returns, Standard Deviation and Beta) and Risk-Adjusted theoretical parameters suggested by Sharpe (1966) and Treynor (1965). Therefore it becomes important to examine the performance of the mutual fund in the changed environment. This paper has evaluated the performance of Indian Mutual fund scheme from 1st April.2007 to 31 March 2012.To examine the funds sensitivity to the market fluctuations in terms of beta. To appraise investment performance of mutual funds with risk adjustment the theoretical parameters as suggested by Sharpe, Treynor and Jensen, to rank the funds according to Sharpes, Treynors and Jensons performance measure.*

Keywords: *Mutual fund Performance, investment, NAV, risk-return Treynor Ratio, sharpe Ratio.*

INTRODUCTION

A mutual fund is a professionally managed type of collective investment scheme that pools money from investors and invests their money in bonds, short term money market instruments and other securities. Mutual funds have a fund manager who invests the money on behalf of the investors by buying / selling stocks, bonds etc. Mutual funds serve as a key financial intermediary. They pool investments by

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* Research Scholar, K L U Business School, Department of Management Studies, K L University, Green field, Guntur,

** Associate Professor, K L U Business School, Department of Management Studies, K L University, Green field, Guntur,

*** Professor, K.C. Reddy P.G College, Guntur.

individual investors and use the funds to accommodate financing needs of government and corporations in the primary market. They also frequently invest in secondary market. A mutual fund hires portfolio managers to invest in a portfolio of securities that satisfies the desires of investors. Like other portfolio managers, the managers of mutual funds analyze economic and industry trends and forecasts and assess the potential impact of various conditions on companies. They adjust the compositions of their portfolio in response to changing economic conditions.

TYPES OF MUTUAL FUND SCHEMES IN INDIA

1. Equity fund
2. Debt funds
3. Balanced funds
4. Tax Saving Schemes
5. Index Schemes
6. Sector Specific Schemes
7. Open - Ended Schemes
8. Close - Ended Schemes
9. Interval Schemes

OVERVIEW OF MUTUAL FUND INDUSTRY

The most important trend in the Mutual Fund (MF) Industry is the aggressive expansion of the foreign owned MF companies and the decline of the companies floated by nationalized banks and smaller private sector players. Many nationalized banks got into the Mutual Fund business in the early nineties and got off to a good start due to the stock market boom prevailing then. The Mutual Fund industry in India started in 1963 with the formation of Unit Trust of India, at the initiative of the Government of India and Reserve Bank of India. The history of Mutual Funds in India can be broadly divided into four distinct phases:

FIRST PHASE – 1964-87

Unit Trust of India (UTI) was established on 1963 by an Act of Parliament. It was set up by the Reserve Bank of India and functioned under the Regulatory and administrative control of the Reserve Bank of India. In 1978 UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. The first scheme launched by UTI was Unit Scheme 1964. At the end of 1988 UTI had Rs.6,700 crores of assets under management.

SECOND PHASE – 1987-1993 (ENTRY OF PUBLIC SECTOR FUNDS)

1987 marked the entry of non- UTI, public sector Mutual Funds set up by public sector banks and Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC). SBI Mutual Fund was the first non- UTI Mutual Fund established in June 1987 followed by Can bank Mutual Fund (Dec 87), Punjab National Bank Mutual Fund (Aug 89), Indian Bank Mutual Fund (Nov 89), Bank of India (Jun 90), Bank of Baroda Mutual Fund (Oct 92). LIC established its Mutual Fund in June 1989 while GIC had set up its Mutual Fund in December 1990. At the end of 1993, the Mutual Fund industry had assets under management of Rs.47,004 crores.

THIRD PHASE – 1993-2003 (ENTRY OF PRIVATE SECTOR FUNDS)

With the entry of private sector funds in 1993, a new era started in the Indian Mutual Fund industry, giving the Indian investors a wider choice of fund families. Also, 1993 was the year in which the first Mutual Fund Regulations came into being, under which all Mutual Funds, except UTI were to be registered and governed. The erstwhile Kothari Pioneer (now merged with Franklin Templeton) was the first private sector Mutual Fund registered in July1993.The 1993 SEBI (Mutual Fund) Regulations were substituted by a more comprehensive and revised Mutual Fund Regulations in 1996. The industry now functions under the SEBI (Mutual Fund) Regulations 1996.

FOURTH PHASE – SINCE FEBRUARY 2003

In February 2003, following the repeal of the Unit Trust of India Act 1963 UTI was bifurcated into two separate entities. One is the Specified Undertaking of the Unit Trust of India with assets under management of Rs.29,835 crores as at the

end of January 2003, representing broadly, the assets of US 64 scheme, assured return and certain other schemes. The second is the UTI Mutual Fund, sponsored by SBI, PNB, BOB and LIC. It is registered with SEBI and functions under the Mutual Fund Regulations. With the bifurcation of the erstwhile UTI which had in March 2000 more than Rs.76, 000 crores of assets under management and with the setting up of a UTI Mutual Fund, conforming to the SEBI Mutual Fund Regulations, and with recent mergers taking place among different private sector funds, the Mutual Fund industry has entered its current phase of consolidation and growth. The graph indicates the growth of assets over the years. (AMFI, 2013).

BENEFITS OF MUTUAL FUNDS

Mutual Fund (MF) is a mechanism for pooling the resources by issuing to the investors and investing funds in securities in accordance with objectives as disclosed in offer document. Investments in securities are spread across a wide cross-section of industries and sectors and thus the risk is reduced. Mutual Fund issues units to the investors in accordance with quantum of money invested by them. The profits or losses are shared by the investors in proportion to their investments. The Mutual Funds normally come out with a number of schemes with different investment objectives which are launched from time to time. Among the different schemes, the scheme which is quite popular for its tax advantages is known as tax saving MF. MF according to investment objectives, comprise of, pure growth scheme, balanced schemes and tax saving schemes. Among the three types, tax saving scheme is more profitable because its act as a tax shield. (SEBI)

OBJECTIVES

The major objectives of the study are:-

1. To evaluate Mutual Fund Schemes in respect of their risk & return.
2. Analyzing the performance of mutual fund schemes with their benchmark
3. Finding the Volatility of mutual fund schemes by using beta.
4. Provide information about pros and cons of investing in Mutual Funds

RESEARCH METHODOLOGY

Mutual funds which have been operating for greater than five years and performing during the period of study (i.e. 2007 –2012) were selected for the present research. There were 340 such mutual funds belonging to categories - Money market category funds, Debt Category Funds, Equity category funds and balanced category funds, etc. Type of research is Descriptive research, which is Quantitative in nature. The whole study can be termed as critical study of risk & return of investment in mutual funds. It is purely a quantitative study of available secondary data. Method of sampling is convenience sampling. Four mutual funds and their schemes are

selected. The present study is a sample study. Samples were selected from top & representative mutual funds offered by domestic and foreign AMC's operating in India. Samples drawn for the study includes six funds & their schemes from AMCs, operating in India.

Mutual Funds over the years have gained immensely in their popularity. Apart from the many advantages that investing in mutual funds provide like diversification, professional management, the ease of investment process has proved to be a major enabling factor. However, with the introduction of innovative products, the world of mutual funds nowadays has a lot to offer to its investors. With the introduction of diverse options, investors needs to choose a mutual fund that meets his risk acceptance and his risk capacity levels and has similar investment objectives as the investor. With the plethora of schemes available in the Indian markets, an investors needs to evaluate and consider various factors before making an investment decision. Since not everyone has the time or inclination to invest and do the analysis himself, the job is best left to a professional. Since Indian economy is no more a closed market, and has started integrating with the world markets, external factors which are complex in nature affect us too. Factors such as an increase in short-term US interest rates, the hike in crude prices, or any major happening in Asian market have a deep impact on the Indian stock market. Although it is not possible for an individual investor to understand Indian companies and investing in such an environment, the process can become fairly time consuming. Mutual funds (whose fund managers are paid to understand these issues and whose Asset Management Company invests in research) provide an option of investing without getting lost in the complexities. Most importantly, mutual funds provide risk diversification: diversification of a portfolio is amongst the primary tenets of portfolio structuring, and a necessary one to reduce the level of risk assumed by the portfolio holder. Most of us are not necessarily well qualified to apply the theories of portfolio structuring to our holdings and hence would be better off leaving that to a professional. Mutual funds represent one such option. Lastly, Evaluate past performance, look for stability and although past performance is no guarantee of future performance, it is a useful way to assess how well or badly a fund has performed in comparison to its stated objectives and peer group. A good way to do this would be to identify the five best performing funds (within your selected investment objectives) over various periods, say 3 months, 6 months, one year, two years and three years. Shortlist funds that appear in the top 5 in each of these time horizons as they would have thus demonstrated their ability to be not only good but also, consistent performers. An investor can choose the fund on various criteria according to his investment objective, to name a few:

- Thorough analysis of fund performance of schemes over the last few years managed by the fund house and its consistent return in the volatile market.

- The fund house should be professional, with efficient management and administration.
- The corpus the fund is holding in its scheme over the period of time.
- Proper adequacies of disclosures have to see and also make a note of any hidden charges carried by them.
- The price at which you can enter/exit (i.e. entry load / exit load) the scheme and its impact on overall return

LITERATURE REVIEW

Barua and Verma (1991) provided empirical evidence of equity mutual fund performance in India. They studied the investment performance of India's first 7year close-end equity mutual fund, Master share. They found that the fund performed satisfactory for large investor in terms of rate of return. Ippolito (1992) expressed that fund/scheme selection by investors is based on past performance of the funds and money flows into winning funds more rapidly than they flow out of losing funds.

Sarkar and Majumdar (1995) evaluated financial performance of five closeended growth funds for the period February 1991 to August 1993, concluded that the performance was below average in terms of alpha values (all negative and statistically not significant) and funds possessed high risk.

Jaydev (1996) evaluated performance of two schemes during the period, June 1992 to March 1994 in terms of returns / benchmark comparison, diversification, selectivity and market timing skills. He concluded that the schemes failed to perform better than the market portfolio (ET's ordinary share price index)

Gupta and Sehgal (1997) evaluated mutual fund performance over a four year period, 1992-96. The sample consisted of 80 mutual fund schemes. They concluded that mutual fund industry performed well during the period of study. The performance was evaluated in terms of benchmark comparison, performance from one period to the next and their risk-return characteristics.

Mishra (2001) evaluated performance over a period, April 1992 to December 1996. The sample size was 24 public sector sponsored mutual funds. The performance was evaluated in terms of rate of return, Treynor, Sharpe and Jensen measures of performance. The study concluded dismal performance of PSU mutual funds in India, in general, during the period, 1992-96

Zakri Y. Bello (2005) matched a sample of socially responsible stock mutual funds matched to randomly select conventional funds of similar net assets to investigate differences in characteristics of assets held, degree of portfolio diversification and variable effects of diversification on investment performance. The study found that socially responsible funds do not differ significantly from

conventional funds in terms of any of these attributes. Moreover, the effect of diversification on investment performance is not different between the two groups. Both groups underperformed the Domini 400 Social Index and S & P 500 during the study period.

Mayank V. Bhatt and Chetan C. Patel (2008) studied the performance comparison of different mutual funds schemes in India through Sharpe index model and concluded that mutual funds are the most popular and safe parameter for an investor to invest.

Kavita Chavali and Shefali Jain (2009) evaluated the performance of equity linked savings schemes and concluded that the fund chosen by the investor should match the risk appetite of the investor. Narayan Rao and M. Ravindran evaluated performance of Indian mutual funds in a bear market through relative performance index, risk-return analysis, Treynor ratio, Sharpe ratio, Jensen measure, and Fama's measure. The results of performance measures suggested that most of mutual fund schemes in the sample of 58 were able to satisfy investor's expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk. Saini, *et al.*, (2011) analyzed investor's behavior, investors' opinion and perception relating to various issues like type of Mutual Fund scheme, its objective, role of financial advisors / brokers, sources of information, deficiencies in the provision of services, investors' opinion relating to factors that attract them to invest in mutual and challenges before the Indian Mutual Fund industry etc. The study found that investors seek for liquidity, simplicity in offer documents, online trading, regular updates through SMS and stringent follow up of provisions laid by AMFI.

Singh (2012) conducted an empirical study of Indian investors and observed that most of the respondents do not have much awareness about the various function of Mutual Funds and they are bit confused regarding investment in Mutual Funds. The study found that some demographic factors like gender, income and level of education have their significant impact over the attitude towards Mutual Funds. On the contrary age and occupation have not been found influencing the investor's attitude. The study noticed that return potential and liquidity have been perceived to be most lucrative benefits of investment in Mutual Funds and the same are followed by flexibility, transparency and affordability.

THE BASIC CONCEPTS

Return Portfolio Returns, Fundamentally, return on a portfolio or a fund is:

$$Rp = \frac{NAV(t) - NAV(t-1)}{NAV(t-1)} \times 100$$

where,

rp   is return on portfolio

NAV   is the Net Asset Value of the Fund

't'   is the time period.

Monthly returns based on the NAVs of the two funds for the period are taken and simple averages of such returns (ARp) are calculated Market Return; Similarly, returns on the market index (Rm) are taken to arrive at the average market return (ARm).

$$Rm = \frac{Market\ Index(t) - Market\ Index(t-1)}{Market\ Index(t-1)} \times 100$$

Risk free Return; further it is assumed that, the monthly risk free return (r_t) is one percent. The reason for this is post office monthly income deposits offer as annual return of 13 percent. Thus, although the average monthly risks free return (AR_f) works out to more than one per cent, it is rounded upto one percent.

Risk is the variability of returns. Total risk is measured with the help of standard deviation of returns for both the portfolio $\bar{O}p$ and the market ($\bar{O}_m$)

$$\bar{O}_p = \frac{\sqrt{\Sigma(r_p - r_f) - (\overline{r_p - r_f})]^2}}{N-1}$$

$\bar{O}$ is total risk of the Portfolio

$(r_p - r_f)$ Average excess return of Portfolio over risk free return.

N   Number of observations

$$\bar{O}_m = \frac{\sqrt{\Sigma(r_m - r_f) - (\overline{r_m - r_f})]^2}}{N-1}$$

Where,

$\bar{O}$ is total risk of the Market Index.

$(r_m - r_f)$ Average excess return of Market over risk free return.

The two components of total risk are systematic risk and unique risk. Systematic risk is measured as follows:

where,

eqation is not clear

where,

β_p is Beta, systematic risk of the portfolio

er_{mt} = r_{mt} – r_{ft}

er_{pt} = r_{pt} – r_{ft}

t   is time period 1,2...........N

N   is Total number of observations

Systematic risk includes all types of factors which influence all securi-ties available in the market. Thus, systematic risk of the market is always one; systematic risk of risk free investment is zero, and portfolio or fund systematic risk can be greater than or less than one.

Unique risk is the risk of the portfolio in particular. It is measured with the help of Standard Deviation of Error term (SDEt). Unique risk can be altered by better portfolio management.

$$SDEP_t = \sqrt{\frac{\Sigma(E_{pt} - E_{pt})^2}{N-1}}$$

where,

SDEPt   = Unique risk of the portfolio.

Ept   = Error terms of the portfolio for period 't'

Ept   = Average of error terms.

These measures are introduced and tested by Jenson (1968). Treynor (1965) and sharpe (1966). Basically, these measures are developed on the assumptions of 'The Capital Asset Pricing Model' (CAPM) profounded by Sharpe, Lintner and others. The CAPM specifies that in equilibrium the return and risk are in linear relationship called as Security Market Line (SML).

$$r_p = r_f + ? \, (r_m - r_f)$$

where,

r_p is expected return on security portfolio

r_m is expected market return

r_f is risk free return

β is the measure of systematic risk of the security or portfolio.

For a well diversified portfolio, the above relationship can be specified in terms of the total risk $\bar{O}_p$ of portfolio return, called as Capital Market Line (CML).

$$r_p = r_f + \bar{O}_p\, r_m - r_f \bar{O}_m$$

where,

$\bar{O}_m$ is the total risk of Market Index

Though, SML and CML are for the purpose of security return, every security of the portfolio must be ploted on SML and CML. However, well diversified portfolios plot on both the CML and SML, undiversified portfolios plot only on the SML.

The following first two measures are based on the SML, where as the third one is based on the CML

Jensen Measure

According to Jensen (1968), equilibrium average return on a portfolio would be a benchmark. Equilibrium average return is the return of the portfolio by the market with respect to systematic risk (volatility) of the portfolio. This is a return the portfolio should earn with the given systematic risk.

$$EAR_p = AR_f + (AR_m - AR_f)\, B_p$$

where,

EAR_p is Equilibrium average return.

Difference between equilibrium average return and average return of the portfolio indicates superior performance of the fund. This is called as alpha (α)

$$A_p = AR_p - EAR_p$$

If the alpha is positive, the portfolio has performed better and if alpha is negative it has not shown performance upto the bench mark, i.e., the market index.

Reward to Voltality Ratio (Treynor)

This is introduced by Treynor (1965) and similar to the above discussed Jensen measure. Here, additional returns of the portfolio over the risk free return is expressed in relation to portfolio's systematic risk;

$$RVOL_p = \frac{AR_p - AR_f}{B_p}$$

RVOLp is reward to volatility of the portfolio.

Here, additional returns of market over risk free return ($AR_m - AR_f$) are the benchmark. Greater value of the portfolio over the market indicates a superior performance of the fund.

The analysis on the basis of above two measures may lead to the same conclusion. This is so because both the measures are based on only systematic risk and exclude unique risk of the portfolio. Hence, it is necessary to evaluate the performance of the fund in terms of its total risk. The following measure is used for the purpose.

Reward to Variability

It was developed by William F. Sharpe (1966). Here, additional portfolio return over risk free return is related with the total risk of the portfolio.

$$RVAR_p = \frac{AR_p - AR_f}{\bar{O}_p}$$

The bench mark is additional return of market over risk free return related with market portfolio's total risk.

$$RVAR_m = \frac{AR_m - AR_f}{\bar{O}_m}$$

A fund which performed better according to first two measures namely Jensen and Treynor measures and not according to the third measures indicates the direction in which fund manager has to change the portfolio structure.

HYPOTHESES OF THE STUDY

(1) There is no significant difference between the returns of different mutual fund schemes of respective mutual fund categories.

(2) There is no significant difference between the returns of mutual funds of different mutual funds categories. The broader hypothesis for the study would be as under.

Ho: There would be no significant difference in performance of various selected six Mutual Funds in various sectors.

H1: There would be significant difference in performance of various selected six Mutual Funds in various sectors.

Above Hypothesis would be expected to review with following sub – parameters which are as under.

(a) Level of Risk

(b) Level of Return

(c) Values of Book Value Ratio and Price Earnings Ratio.

(d) Assets under Management

(e)   Diversification of Assets

(f)   Net Assets Value.

STUDY OF RETURNS OF GROWTH SCHEMES

Scheme Name	1month %	3month %	6month %	1year %	3 year %	5 years %	Since Inception	Category	Structure
HDFC Growth Fund - Growth	-4.24	-7.56	-16.41	-20.86	20.76	8.68	19.28	Equity	Open Ended
ICICI Prudential Eq. & Deri. Fund – IO - IP - Growth	0.56	1.48	3.00	7.54	6.11	7.44	7.52	Equity	Open Ended
UTI Equity Fund-Growth	0.51	-3.96	-11.14	-11.30	24.46	8.20	9.09	Equity	Open Ended
SBI Magnum Equity Fund - Growth	1.05	-3.79	-11.54	-10.56	25.29	6.67	10.52	Equity	Open Ended

Calculations and studies of different measures of risk
S.D., Beta, Sharpe & Treynor of Equity & Growth Schemes as on 31st March, 2012

Scheme Name	S.D.	Beta	Sharpe	Treynor
HDFC Growth Fund - Growth	3.46	0.80	0.06	0.28
ICICI Prudential Eq. & Deri. Fund – IO - IP - Growth	0.25	0.74	0.07	0.02
UTI Equity Fund – Growth	3.08	0.73	0.08	0.33
SBI Magnum Equity Fund - Growth	3.76	0.88	0.06	0.24

STUDY OF RETURNS OF DIVIDEND SCHEME

Scheme Name	1month %	3month %	6month %	1year %	3 year %	5 years %	Since Inception	Category	Structure
HDFC Growth Fund - Dividend	-4.24	-7.56	-16.41	-20.80	20.81	8.72	15.20	Equity	Open Ended
ICICI Prudential Eq. & Deri. Fund – IO - IP - Dividend	0.59	1.52	3.08	7.60	6.23	7.47	6.87	Equity	Open Ended
UTI Equity Fund - Dividend	0.51	-3.95	-11.13	-11.30	24.43	8.03	8.94	Equity	Open Ended
SBI Magnum Equity Fund - Dividend	1.05	-3.78	-11.55	-11.55	25.48	6.76	10.60	Equity	Open Ended

Calculations and studies of different measures of risk

S.D., Beta, Sharpe & Treynor of Growth dividend Schemes as on 31st March, 2012

Scheme Name	S.D.	Beta	Sharpe	Treynor
HDFC Growth Fund - Dividend	3.47	0.80	0.06	0.28
ICICI Prudential Eq. & Deri. Fund – IO - IP - Dividend	0.30	0.39	0.06	0.05
UTI Equity Fund – Dividend	3.08	0.73	0.08	0.33
SBI Magnum Equity Fund - Dividend	3.75	0.88	0.06	0.25

STUDY OF RETURNS OF BALANCED SCHEMES

Scheme Name	1month %	3month %	6month %	1year %	3 year %	5 years %	Since Inception	Category	Structure
HDFC Balance d Fund - Dividend	0.10	-5.10	-9.42	-3.47	27.56	10.15	12.08	Equity & Debt	Open Ended
ICICI Prudential Balanced - Dividend	-0.13	-2.62	-7.72	-3.15	20.01	4.60	9.52	Equity & Debt	Open Ended
UTI Balanced Fund- Dividend	0.73	-4.65	-11.67	-12.47	18.33	4.75	9.39	Equity & Debt	Open Ended
SBI Magnum Balanced Fund - Dividend	1.13	-3.71	-12.41	-14.97	16.09	4.02	12.96	Equity & Debt	Open Ended
HDFC Balanced Fund - Growth	0.10	-5.10	-9.42	-3.48	27.56	10.12	15.76	Equity & Debt	Open Ended
ICICI Prudential Balanced - Growth	-0.18	-2.60	-7.74	-3.22	20.01	4.59	12.96	Equity & Debt	Open Ended
UTI Balanced Fund- Growth	0.70	-4.64	-11.64	-12.47	18.55	4.90	12.85	Equity & Debt	Open Ended
SBI Magnum Balanced Fund - Growth	1.13	-3.70	-12.40	-14.96	16.19	4.05	13.72	Equity & Debt	Open Ended

Calculations and studies of different measures of risk

S.D., Beta, Sharpe & Treynor of Balanced Schemes as on 31st March, 2012

Scheme Name	S.D.	Beta	Sharpe	Treynor
HDFC Balanced Fund - Dividend	2.52	0.88	0.11	0.32
ICICI Prudential Balanced-Dividend	2.57	0.90	0.07	0.21
UTI Balanced Fund - Dividend	2.72	0.98	0.06	0.17
SBI Magnum Balanced Fund - Dividend	2.97	1.08	0.04	0.10
HDFC Balanced Fund – Growth	2.52	0.88	0.11	0.32
ICICI Prudential Balanced - Growth	2.56	0.90	0.07	0.21
UTI Balanced Fund - Growth	2.72	0.98	0.06	0.17
SBI Magnum Balanced Fund - Growth	2.97	1.08	0.04	0.10

STUDY OF RETURNS OF LIQUID SCHEMES

Scheme Name	1month %	3month %	6month %	1year %	3 year %	5 years %	Since Inception	Category	Structure
HDFC Liquid Fund–Daily Div	0.62	1.79	3.57	6.97	5.01	5.66	5.16	Short Term Debt	Open Ended
ICICI Prudential Liquid Plan – Daily Div	0.57	1.66	3.28	6.40	4.52	5.28	3.96	Short Term Debt	Open Ended
UTI Liquid Fund – Cash Plan - Daily Div	0.65	1.88	3.74	7.24	5.11	5.72	4.54	Short Term Debt	Open Ended
SBI Premier Liquid Fund – IP - Daily Div	0.62	1.80	3.57	6.99	5.00	5.51	4.41	Short Term Debt	Open Ended
HDFC Liquid Fund–Growth	0.78	2.28	4.54	8.90	6.43	7.24	6.71	Short Term Debt	Open Ended
ICICI Prudential Liquid Plan – Growth	0.72	2.11	4.19	8.21	5.82	6.79	7.02	Short Term Debt	Open Ended
UTI Liquid Fund – Cash Plan - Growth	0.74	2.16	4.31	8.41	6.09	6.89	6.28	Short Term Debt	Open Ended
SBI Premier Liquid Fund – IP - Growth	0.79	2.29	4.56	8.97	6.41	7.06	6.49	Short Term Debt	Open Ended

Calculations and studies of different measures of risk
S.D., Beta, Sharpe & Treynor of Liquid Schemes of Selected Mutual Funds as on 31st March, 2012.

Scheme Name	S.D.	Beta	Sharpe	Treynor
HDFC Liquid Fund – Daily Div	0.03	0.43	-0.43	-0.03
ICICI Prudential Liquid Plan -Daily Div	0.03	0.45	-0.70	-0.04
UTI Liquid Fund – Cash Plan -Daily Div	0.03	0.50	-0.32	-0.02
SBI Premier Liquid Fund – IP - Daily Div	0.03	0.44	-0.45	-0.03
HDFC Liquid Fund – Growth	0.04	0.55	0.39	0.03
ICICI Prudential Liquid Plan –Growth	0.04	0.59	0.12	0.01
UTI Liquid Fund – Cash Plan -Growth	0.04	0.58	0.24	0.01
SBI Premier Liquid Fund – IP –Growth	0.04	0.57	0.34	0.02

STUDY OF RETURNS OF INCOME SCHEMES

Scheme Name	1month %	3month %	6month %	1year %	3 year %	5 years %	Since Inception	Category	Structure
HDFC Income Fund - Dividend	1.86	1.83	3.48	5.76	3.99	6.70	5.53	Debts	Open Ended
ICICI Prudential Income Fund-Dividend	2.06	2.88	4.59	6.51	3.02	7.97	5.88	Debts	Open Ended
UTI Bond Fund - Dividend	1.24	2.74	5.53	10.26	2.87	7.95	7.34	Debts	Open Ended
SBI Magnum Income Fund - Dividend	1.63	2.82	4.61	8.15	3.22	3.94	4.73	Debts	Open Ended
HDFC Income Fund-Growth	2.04	2.01	3.86	6.34	4.62	7.43	7.99	Debts	Open Ended
ICICI Prudental Income Fund-Growth	2.06	2.87	4.83	7.00	3.74	8.78	9.23	Debts	Open Ended
UTI Bond Fund-Growth	1.59	3.10	6.16	11.21	3.63	7.37	8.56	Debts	Open Ended
SBI Magnum Income Fund - Growth	1.63	2.82	4.83	8.62	3.64	4.94	7.23	Debts	Open Ended

Calculations and studies of different measures of risk

S.D., Beta, Sharpe & Treynor of Income Schemes of Selected Mutual Funds as on 31st March, 2012.

Scheme Name	S.D.	Beta	Sharpe	Treynor
HDFC Income Fund - Dividend	0.77	1.96	0.07	0.03
ICICI Prudential Income Fund - Dividend	0.91	2.28	0.07	0.03
UTI Bond Fund – Dividend	0.82	1.78	0.05	0.02
SBI Magnum Income Fund - Dividend	0.62	1.44	0.01	0.01
HDFC Income Fund – Growth	0.77	1.97	0.09	0.03
ICICI Prudential Income Fund - Growth	0.91	2.28	0.08	0.03
UTI Bond Fund – Growth	0.82	1.79	0.07	0.03
SBI Magnum Income Fund - Growth	0.62	1.43	0.02	0.01

RESEARCH FINDINGS

This research work has find out the following facts and figures about the risk and returns of selected Mutual Funds Schemes as on 31st December, 2011.

❖ ICICI Pru. Equity & Deri. Fund.Grth gives the best return, i.e. ICICI Pru. Equity & Deri. Fund.Grth is the best option on the short-term basis. Hence, on the basis of recent returns, UTI Equity-G and HDFC Growth-G are the best options and on the basis of far previous year returns, HDFC Growth-G is the best options. Therefore on overall basis HDFC Growth-G is the best option.

❖ ICICI Pru. Equity & Deri. Fund.D gives the best return, i.e. ICICI Pru. Equity & Deri. Fund.D is the best option on the short-term basis. On the basis of recent returns, UTI Equity-D and HDFC Growth-D are the best options and on the basis of far previous year returns, HDFC Growth-D is the best options. Therefore on overall basis HDFC Growth-D is the best option.

❖ Returns are positive for 1 month of, SBI Mag. Bal. Fund D&G and UTI Bal. Fund D&G including HDFC Bal. Fund-D&G. All other give negative return for short-term up to 1 year. That is on the basis of 1 month return SBI Mag. Bal. Fund D&G is the best option. Options with negative returns are not selected. On the basis of long-term returns, HDFC Bal. Fund-D&G are the best options and on the basis of returns since inception, HDFC Bal. Fund-G is the best option. Therefore on overall basis HDFC Bal. Fund-G is the best option.

❖ The top four selected liquid schemes are SBI Pre. Liq. Fund-IP.G, HDFC Liq. Fund-G, UTI Liq. Fund.CP-G and ICICI Pru. Liq. Plan-G in their descending order for short-term up to 1 year, i.e. best one is SBI Pre. Liq.

Fund-IP.Gon the basis of short-term, i.e. up to 1 year. On the basis of 3 yrs., 5 yrs. and return since inception, maximum return is secured by the HDFC Liq. Fund-G, SBI Pre. Liq. Fund-IP.G, UTI Liq. Fund.CP-G and ICICI Pru. Liq. Plan-G in their descending order for 3 yrs., 5 yrs. returns and ICICI Pru. Liq. Plan-G, HDFC Liq. Fund-G, SBI Pre. Liq. Fund-IP.G and UTI Liq. Fund.CP-G for return since inception. Therefore,ICICI Pru. Liq. Plan-G is the best one on overall basis long-term and short-term both.

❖ On the basis of all the short-term period up to 1 year, we see that UTI has performed well on the basis of 3 months, 6 months and 1 year. But in the last 1 month ICICI and HDFC have performed well comparative to others in their descending order. Hence, best option is UTI Bond Fund-G on short-term basis. ICICI Pru. Income Fund-G is the best one on the basis long-term. But HDFC Income Fund-D&G have secured more returns for 5 years period comparative to others .

❖ UTI Equity Fund-D, and HDFC Equity Fund-D have created their good NAV value through their overall long term better performance in descending order and all these top two have beaten the average performance of similar category funds.

❖ HDFC Equity Fund-G have created their good NAV value due to their better long term performance in their descending order and both the funds have beaten the average performance of similar category funds.

❖ On the basis of Standard Deviation., SBI Mag. Equity Fund.G,, HDFC Growth-G, UTI Equity Fund-G and ICICI Pru. Eq. & Deri. Fund-G is most risky in their descending order. ICICI Pru. Eq. & Deri. Fund-G is least risky on all risk bases. On the basis of Beta the pattern is almost similar to the previous one. As per Sharpe and Treynor, returns are good enough or compensate the risk taken by investors by investing in these. The best options, in their descending order, are UTI Equity Fund-G and HDFC Growth-G.

❖ On the basis of Standard Deviation., SBI Mag. Equity Fund.D, HDFC Growth-D, UTI Equity Fund-D and ICICI Pru. Eq. & Deri. Fund-D is most risky in their descending order. ICICI Pru. Eq. & Deri. Fund-D is least risky on all risk bases. On the basis of Beta the pattern is almost similar to the previous one. As per Sharpe and Treynor, returns are good enough or compensate the risk taken by investors by investing in these. The best options, in their descending order, are UTI Equity Fund-D and HDFC Growth-D.

❖ On the basis of Standard Deviation. SBI Mag. Balance Fund. D&G, UTI Balance Fund-D&G, ICICI Pru. Balance Fund-D, ICICI Pru. Balance Fund-G, HDFC Balance Fund-D&G and are most risky in their descending order.

FT India Balance Fund-D&G are least risky on all risk bases. On the basis of Beta the pattern is almost similar to the previous one. As per Sharpe and Treynor, returns are good enough or compensate the risk taken by investors by investing in these. The best options, in their descending order, are HDFC Balance Fund-D&G and ICICI Pru. Balance Fund-D&G. Therefore, on overall basis HDFC Balance Fund-D&G are the best options.

❖ On the basis of Standard Deviation. SBI Pre. Liq. Fund-IP.Dly D, HDFC Liq. Fund-Dly D, UTI Liq. Fund.CP-Dly D, ICICI Pru. Liq. Plan-Dly D and are least risky with same risk. Schemes with dividend option are least risky on all risk bases. On the basis of Beta the pattern is little bit different. The pattern is ICICI Pru. Liq. Plan-G, SBI Pre. Liq. Fund-IP.Dly D and HDFC Liq. Fund- Dly D in their descending order of risk. HDFC Liq. Fund-Dly D is the least risky. Sharpe and Treynor are positive only for HDFC Liq. Fund-G, SBI Pre. Liq. Fund-IP.G, UTI Liq. Fund.CP-G and ICICI Pru. Liq. Plan-G. That shows that the returns are good enough or compensate the risk taken by investors by investing only for/in HDFC Liq. Fund-G, SBI Pre. Liq. Fund-IP.G, UTI Liq. Fund. CP-G and ICICI Pru. Liq. Plan-G and returns / compensations are in the above mentioned descending order. Therefore the best one is HDFC Liq. Fund-G and the worst one is ICICI Pru. Liq. Plan-Dly D .

❖ On the basis of Standard Deviation. ICICI Pru. Income Fund297 D&G, UTI Bond Fund-D&G, HDFC Income Fund-D&G, SBI Mag. Income Fund. D&G and are most risky in their descending order. On the basis of Beta. The pattern is almost similar to the previous one. As per Sharpe and Treynor, returns are somewhat enough or compensate the risk taken by investors by investing in these. The best options, in their descending order, are HDFC Income Fund-G and ICICI Pru. Income Fund-G. Therefore, on overall basis HDFC Income Fund-G is the best options.

LIMITATION OF THE STUDY

This report gives an insight about mutual funds and mutual fund Schemes but with few limitations as follows: The big question is how to judge a mutual fund before investing? It is important for an investor to consider a fund's performance over several years. The report only analyses mutual fund schemes of only some funds. There are around 44 AMCs offering wide range of schemes but to analyze all of them is a tedious task. Information is mainly collected regarding top and representative mutual funds. Different fund managers adopt different strategies to improve performance. While one fund manager may have invested in speculative stocks over a period, another one who have invested in speculative stocks may have struck gold in that year to outperform the former by a long way.

CONCLUSIONS

This research work has find out the following facts and figures about the risk and returns of selected Mutual Funds Schemes as on 31st March, 2012. On these risk and returns we conclude that. The major market of Mutual Fund is in Income schemes, Growth schemes and Liquid schemes, out of which Growth market is mostly leaded by HDFC, UTI on the basis of, mainly, returns up to 5 years. No doubt that in Growth SBI performed well, out of which one is private Indian MF and other is Bank sponsored MF. ICICI is also performing well on a continuous basis with a positive return over all the periods. The situation is same in both, dividend & growth options of Equity & Growth schemes of selected Mutual Funds. In Balanced schemes, HDFC, ICICI Prudential and then UTI & SBI are also performing well. On overall basis HDFC is the best option. In Liquid & Money Market schemes, the situation are little bit different with the leading Mutual Funds HDFC, SBI, UTI and ICICI are performing well in their descending order. Therefore, ICICI is the best one on overall basis long-term and short-term both. In Income & Bond schemes, leading players ICICI, UTI and HDFC are performing well in their descending order. SBI has also performed well with other on the same criteria, i.e. on the basis of returns. With Dividend option, UTI Equity Fund-D and HDFC Equity Fund-D are best on the basis of NAV creation through their overall long term better performance in descending order. With Growth option, HDFC Equity Fund-G isS best on the basis of NAV creation through their overall long term better performance in descending order.

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