A Study of Selected Dividend Mutual Fund Schemes with Jenson's Alpha Model

***Dr. Sandeep Bansal**

Abstract

Mutual fund industry in India has shown significant growth and alternative investment option for global investors in recent years. These mutual funds offered a number of dividend mutual fund schemes. In this present paper we apply a risk-adjusted measure known as Jensen's Alpha Model on ten randomly selected dividend mutual fund schemes that estimates how much a manager's forecasting ability contributes to the fund's returns. We use a sample of 10 mutual fund schemes (dividend) for the period of 4 years from May 2005 to April 2009 on monthly basis and calculated their NAV. Jensen's Model measure involves a comparison of the returns that the fund had generated with the returns expected from the fund with the given level of its systematic risk (Beta). The difference between two returns is called alpha. We find that 70% of selected mutual fund schemes have been performed negatively because having negative Alpha, and only three out of ten selected dividend mutual fund schemes got the positive value of Alpha.

Keywords: Mutual Fund Performance, Jensen's Model, Alpha, Average Return, Systematic Risk,

***Dr. Sandeep Bansal, Assistant Professor, Indira Gandhi National College, Ladwa**

INTRODUCTION

Mutual funds are mobilizing savings, particularly from the small and household investors, for investments in stock and money market. Basically, these institutions have professional fund managers, capable of managing funds very prudently and profitably of individuals and institutions that may not have such high degree of expertise or may not have adequate time to cope with the complexities of different investment avenues, legal provisions associated therewith and vagaries and vicissitudes of capital markets. Mutual funds, thus, provide an alternative to the investors, who instead of making direct investments in shares or bonds through public issues or through secondary market subscribe to the corpus of mutual funds.

Investors can reap all the benefits of good investment through mutual funds like enjoying growth in those scrips in which he might not have otherwise invested, holding a balanced and well-diversified portfolio, better returns due to specialized and professional management of funds etc.

Mutual funds raise funds by selling their own shares also known as units. When an investor owns shares in mutual funds he owns a proportional share of their securities portfolio. In other words, share of a mutual fund actually represents a part share in many securities that it has purchased. Mutual fund share certificate combines the convenience and satisfaction of owning shares in many industries.

Thus, mutual funds are investment intermediaries, which pool investors' funds, acquiring individual investments, and pass on the returns thereof to the investors, Besides Investment business, mutual funds may also undertake, if permitted, underwriting and other merchant banking activities.

In India Mutual Fund concept took roots only in sixties, after a century old history elsewhere in the world. Realizing the needs for a more active mobilization of household savings to provide investible resources to industry, the idea of first mutual fund in India was born out of the far sighted vision of Sri T. Krishnamachari the then Finance Minister. He wrote to the then Prime Minister Pandit Jawahar Lal Nehru outlining the need for an institution which would serve as a conduit for these resources to the Indian Capital market, and RBI was entrusted to create this special Institution. While introducing Unit Trust of India (UTI) Bill in Parliament Sri Krishnamachari observed, "I would christen this attempt as an adventure in small saving and I am confident that we are embarking on this adventure with every hope of being successful". He highlighted UTI as "an opportunity for the middle and lower Income groups to acquire without much difficulty property in the form of shares. UTI, in 1964 started with a unit scheme popular as US-64.

RBI Guidelines

1. Mutual Fund should be constituted as a trust under the Indian Trust Act and at least two outside trustees should be there.
2. Mutual Fund should have a full time executive for the day-to-day management.
3. There must be an arm's length relationship between the mutual fund and the sponsor bank.
4. Every sponsor bank should contribute at least Rs. 25 lakh.
5. A clear statement of objectives and policies for the fund must be laid down and published.
6. Operations must be restricted to capital market instruments only, and mutual funds are not to undertake direct or indirect lending. Underwriting, bills discounting and money market operations (Subsequently public sector mutual funds were allowed to undertake money market operations).
7. Restrictions must be placed on the cost of managing any scheme.
8. A Management Information System (MIS) should be evolved to maintain data and to submit various reports.

Ministry of Finance issued a new set of guidelines to give a healthy outfit for mutual fund functioning. These guidelines issued on 28th June 1990 were applicable only to mutual fund schemes operating in the country.

REVIEW OF LITERATURE

Review of previous studies provides the need and justification for the research work to be undertaken, and research methodology explains the research process. Researcher and practitioners have produced literature covering different aspects of mutual funds. A variety of technical and quantitative measures have been developed to assess and compare the financial performance of mutual fund schemes as well as the performance of funds managers. These measures provide the methods of comparing risk-adjusted returns of a portfolio with other portfolios or with benchmarks.

1. Wermers (2000) in his study used two databases in the analysis of mutual fund returns. The first database contains quarterly portfolio holding for all US equity mutual funds existing at any time between January 1975 and December 1994. The second mutual fund database is available from CRSP and used by Carhart (1997). The study found that funds which hold stocks outperform the market by 1.3 % per year, but their returns under-perform by 1 %. Of the 2.3 % difference between these results, 0.7% is due to the underperformance of non- stock holdings, whereas 1.6% is due to

expenses and transaction costs. Thus, the funds pick stocks well enough to cover their costs.

2. Mishra, et al., (2002) measured mutual fund performance using lower partial moment. In this paper, measures of evaluating portfolio performance based on lower partial moment are developed. Risk from the lower partial moment is measured by taking into account only those stocks in which return is below a pre-specified "target rate" like risk-free rate.

3. Rajeeva Sinha and Vijay Jog(2003) the authors examine the performance of Canadian mutual fund managers, and find that their performance is lackluster when com-pared with some well-recognized bench marks such as the TSE 300 and the 90-day T-Bill rates, and is even lower when one accounts for the timing of entry and exit by mutual fund investors. They attribute this to the lack of performance persistence. However, unlike some US studies, they do not find evidence suggesting that Canadian mutual fund investors chase winners, and are reluctant to exit from losing funds; while investors do allocate funds based on past performance, the allocations do not favor star funds disproportionately. Poor performers experience significant fund withdrawals. They attribute this to the differences in the tax treatment of retirement-related savings – the principal source of mutual funds asset growth.

4. Kshama Fernandes (2003) evaluated index fund implementation in India. In this paper, tracking error of index funds in India is measured. The consistency and level of tracking errors obtained by some well-run index fund suggest that it is possible to attain low levels of tracking error under Indian conditions. At the same time, there do seem to be periods when certain index funds appear to depart from the discipline of indexation.

5. Warren Bailey, Haitao Li, and Xiaoyan Zhang *(2004) analyze hedge fund performance, using the stochastic discount factor (SDF) approach and imposing the arbitrage-free requirement to correctly value the derivatives and dynamic trading strategies used by hedge funds. Using SDFs of many asset-pricing models, we evaluate hedge fund portfolios based on style and characteristics. Without the arbitrage-free requirement, pricing errors are relatively small and a few models can explain hedge fund returns. With this requirement, pricing errors are much bigger, and all models fail to price style and volatility portfolios. Fund manager characteristics like age, experience, and education explain some of the mis-pricing of our best risk model.

OBJECTIVE OF THE STUDY

The present study focuses on the performance evaluation of dividend based mutual fund schemes of various mutual funds operating in the country. The specific objective of the study is to find out the performance of selected dividend mutual funds schemes by applying Jensen's Alpha Model. The study also ranks the selected mutual fund schemes according to their risk and return.

RESEARCH METHODOLOGY

Return alone should not be considered the basis of measurement of performance of a mutual fund schemes, it should also include level of risk undertaken and diversification of funds. The excess of portfolio return, over the risk less return is an indication of the overall portfolio performance.

The study is entirely based on the secondary data. The scope of the study is kept limited to the time period of 4 years (May 2005 to April 2009). The sample consists of 10 dividend based mutual fund schemes, which are chosen at random basis. It is important to point out that NAVs have been taken on monthly basis. The data regarding the NAV's and return of these 10 mutual fund schemes have been collected from SEBI annual reports and "www.amfiindia.com". The BSE Sensex was used as the proxy for market index and each scheme has been evaluated with respect to this benchmark. The study considered interest rate on treasury bills as risk-less return in view of the average yield being 5 percent during the study period.

NET ASSET VALUE

NAV has been obtained from the different sources such as:

1. AMFIINDIA
2. Alpha

The portfolio return calculated on the basis of NAV does not consider any change in the market price but considers the change in the net asset value of mutual funds units during the period.

Portfolio's return (Rn) is calculated by using the following formula:

$$R_P = \frac{(NAV_t - NAV_{t-1})D_t + C_t}{NAV_{t-1}}$$

R_p = Portfolio return

NAV_t= Net asset value in time period t

NAV_{t-1} = Net asset value in the period t-l

D_t = dividend in the form of bonus distributed in the period t

C_t = cash dividend distributed in the time period t

Month-wise returns have been calculated for all mutual funds' schemes during the study period. The portfolio return Rp was computed in the manner prescribed above on a monthly basis. The holding period return has been computed with the process of geometric mean of monthly NAV based returns. The formula for the geometric mean has been used as follows:

Holding period return (HPR) =

$$[\{R_{pt+1} + R_{pt+2} + ...R_{pt+n}\}]$$

The same procedure is adopted to calculate the benchmark portfolio return.

Jensen Model

Jensen model is a risk adjusted performance measure. This measure is developed by Michael Jensen and is sometimes referred to as the differential return method. This measure involves evaluation of the returns that the fund had generated with the returns actually expected of the fund, given the level of its systematic risk. The difference between two returns is called alpha, which measures the performance of a fund in relation to the expected over the period. Required return of a fund at a given level of risk can be calculated as:

$E(R_p) = R_F + \beta (R_M - R_p)$

$E(R_P)$ = The expected return on security or portfolio

R_F = Risk free rate of return

Beta = Systematic risk of the portfolio

R_M = Average market return during the period

R_P = Return of the portfolio

After calculating it, alpha can be obtained by subtracting required return from the actual return of the fund. Symbolically it can be represented as:

$\alpha = R_p - E(R_p)$

R_p = Return of the portfolio

$E(R_p)$ = The expected return on security or portfolio

σ = Jensen alpha value

Return and Risk Coefficient of Various Sample Schemes

Fund Schemes	Return	σ	β	Alpha	Rank
Birla Sun Life Basic Inds. Fund(Dividend)	0.0017	0.1061	0.9942	-0.426	8
Franklin India Blue-chip Fund(Dividend)	0.0083	0.0947	1.0126	-0.427	9
H D F C Liquid Fund(Dividend)	0.0002	0.0032	-0.006	0.0029	2
Kotak Gilt(Investment Plan Regular Plan Dividend)	0.0071	0.0237	-0.002	0.0097	3
L & T Gilt Fund (Investment Dividend-Q)	0.0021	0.0264	-0.073	0.0334	1
L I C M F Balanced Fund(Dividend)	0.0015	0.0796	0.8044	-0.294	5
Reliance Growth Fund (Dividend)	0.0053	0.0978	0.959	-0.407	7
S B I Magnum Gilt Fund (Dividend)	0.0015	0.0233	0.0284	-0.011	10
Tata Balanced Fund (Dividend)	0.0158	0.073	0.6948	-0.307	6
Templeton India Pension Plan (Treasury Dividend)	-0.001	0.0465	0.3758	-0.163	4
BSE Sensex	0.0135	0.0836	1		

Conclusion

Higher alpha represents superior performance of the fund and lower alpha represents unfavorable performance of the fund. Limitation of this model is that it considers only systematic risk not the entire risk associated with the fund and an ordinary investor cannot mitigate unsystematic risk, as his knowledge of market is primitive. The table above shows the average value was found to be -0.19. The result shows alpha L & T Gilt Fund (Investment Dividend-Q), H D F C Liquid Fund

(Dividend) having positive value that indicates the superior performance among the dividend funds to the market performance, while the value of alpha in this case of SBI Magnum Gilt Fund (Dividend) and Franklin India Blue-chip Fund(Dividend) is negative which is indicative of the dismal performance of these schemes.As compared to the average value of Jensen Index of sampled schemes with the market index, 70 percent (7 out of 10) schemes have performed lesser, and have shown least risk-adjusted performance The performance of 7 mutual fund schemes is undoubtedly disappointing & dismal which could give a shattering & jolt to investors' faith in the mutual fund schemes. But Jenson's Alpha of three schemes namely L & T Gilt Fund (Investment Dividend-Q), H D F C Liquid Fund (Dividend) and Kotak Gilt (Investment Plan Regular Plan Dividend) have positive value during the study period indicating their superior performance among selected mutual fund schemes.

References

- Haldane , Andrew G (2009), *"Why banks failed the stress test",* Bank of England, w.bankofengland.co.uk/publications/speeches/2009/speech374.pdf
- Jackwerth, J., 2000, "Recovering Risk Aversion from Option Prices and Realized Returns,"Review of Financial Studies 13, 433-451.
- Jagoinvestor.com, (2008), *what is Diversified Portfolio and how to create it?* [Online] Available at: http://www.jagoinvestor.com/2008/04/what-is-diversified-portfolio-and-how.html [viewed on 20th August 2010].
- Jorion, P., 1995, "Predicting Volatility in the Foreign Exchange Market," Journal of Finance 50, 507-528.
- Jorion, P., 2000, "Risk Management Lessons from Long-Term Capital Management," European Financial Management 6(3), 277-300.
- Kumar M. (2010), Efficient Market Theory, [Online] Available at: http://www.scribd.com/doc/32755638/Efficient-Market-Theory [viewed on 2nd September 2010]
- Kuritzkes, A. and T. Schuermann (2008), *"What we know, don't know and can't know about bank risk: a view from the trenches",* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=887730
- Lewis, M., 1999, "How the Eggheads Cracked," New York Times Magazine, January 24, 24-77.

- Mitchell, M., and T. Pulvino, 2001, Characteristics of Risk in Risk Arbitrage," Journal of Finance 56, 2135-2175.
- Modigliani, F., and L. Modigliani, 1997, "Risk-Adjusted Performance," Journal of Portfolio Manage- ment 23 (2), 45-54.
- Neuberger, A., 1994, "The Log Contract: A New Instrument to Hedge Volatility," Journal of Portfolio Management, winter, 74-80.
- Pan, J., 2002, "The Jump-Risk Premia Implicit in Options: Evidence from an Integrated TimeSeries Study," Journal of Financial Economics 63, 3-50.
- Peskin, M., M. Urias, S. Anjilvel, and B. Boudreau, 2000, "Why Hedge Funds Make Sense,"
- Quanti- tative Strategies, Global Equity and Derivative Markets, Morgan Stanley Dean Witter.
- Satyha Swaroop Debashish, volume 2, issue (2) 2009, "Options and Effciency," KCA Journal of Business Management.
- Tripathy, NP and Sahu, PK., *" Mutual Fund in India; A Financial Service in Capital Mraket,* Finance India, Vol. X, No. 1, March 1996, pp. 85-91.
- Varma, J R (1999) "*Rupee-Dollar Option Pricing and Risk Measurement: Jump Processes, Changing Volatility and Kurtosis Shifts",* Journal of Foreign Exchange and International Finance, 1391), 11-33
- Warther, Vincent A., *"Aggregate Mutual Fund Flows and Security Returns*, Journal of financal Economies, Vol. 39, Feb. 1995, pp. 209-235.
- Wermers, Russ., *"Mutual Fund Performance: An Empirical Decomposition into Stock Pricing Talent, Style, Transactions Costs, and Expenses*, Journal of Finance, Vol. 55, no 4, August 2000, pp. 1655-1695.