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MUTUAL FUND INVESTMENT DECISIONS BY USING FAMA DECOMPOSITION MODELS

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ABSTRACT

Mutual Funds are dynamic Financial Institutions (FI) which play a crucial role in an economy by mobilizing savings and investing them in the capital market, thus establishing a link between savings and the capital market. Therefore, the activities of mutual funds have both short-and long term impact on the savings & capital markets, and the national economy.

INTRODUCTION AND PURPOSE OF THE STUDY

For the purpose of the study eighty schemes of different private sector Equity Mutual Funds were selected and their performance has been evaluated in terms of Risks and Returns. The private sector mutual funds which commenced their operations from 1993 and funds which have a track record of last four years i.e. from 2004 to 2010 were included in the study.

RESEARCH OBJECTIVES

To evaluate the performance of select Equity funds in terms of profitability.

To advice investors on select Equity Funds which have good performance track record.

Indian Mutual Funds have emerged as strong financial intermediaries and are playing a very important role in bringing stability to the financial system and efficiency to resource allocation. Mutual funds have opened new vistas to investors and imparted much-needed liquidity to the system. In the process, they have challenged the hitherto dominant role of commercial banks in the financial market and national economy.

An attempt is made in the following sections to examine the multidimensional role of Mutual funds in the financial sector in India Vis- a- Vis some other foreign countries with an established mutual funds culture.

Mutual Funds are dynamic Financial Institutions (FI) which play a crucial role in an economy by mobilizing savings and investing them in the capital market, thus establishing a link between savings and the capital market. Therefore, the activities of mutual funds have both short-and long term impact on the savings & capital markets, and the national economy. Mutual funds thus, assist the process of financial deepening and

intermediation. They mobilize funds in the savings market and act as complementary to banking; at the same time they also compete with banks and other financial institutions. In the process stock market activities are also significantly influenced by mutual funds.

PURPOSE OF THE STUDY

For the purpose of the study eighty schemes of different private sector Equity Mutual Funds were selected and their performance has been evaluated in terms of Risks and Returns. The private sector mutual funds which commenced their operations from 1993 and funds which have a track record of last four years i.e. from 2004 to 2010 were included in the study. The schemes were analyzed on the basis of expectation and operation (functional classification) i.e. only open ended schemes launched during Nov 1993 to Nov 2010. The schemes were also analyzed on the basis of investment objective (port folio construction), growth and sector specific schemes.

The major Findings and Conclusions of the study are confined to the private Sector mutual funds for the period from 2003-2004 to 2004-2010.

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RESEARCH HYPOTHESES

The study tests the following hypotheses in respect of Performance

Evaluation of Mutual Fund schemes.

The investment performance of schemes is superior to the relevant benchmark performance.

The equity fund schemes are not well diversified.

There is no significant relationship between investment objectives of the schemes and their risk characteristics.

LIMITATIONS OF THE STUDY

This study was limited to a five year period only.

The study was confined only to private sector funds of eighty selected different schemes under Equity fund category.

The study did not consider the rest of the equity funds, which were either new, or which were giving less returns than the risk free rate.

RESEARCH METHODOLOGY

It attempts to evaluate portfolio performance in terms of Risks and Returns of selected private sector equity funds. A sample of 25 equity funds including Diversified equity funds (large cap funds,mid cap funds, blend funds) Tax planning funds (Equity linked tax savings schemes) Infrastructure funds, Sectoral funds were selected during the period Dec2003-Dec2009.

DATA SOURCES

The main data sources were the annual reports, fact sheets of the various mutual funds, the offer documents of various mutual funds schemes, and NAVs and repurchase prices announced by the funds from time to time. Data on market prices was collected from "The Economic Times" and the monthly Economic Reviews published by the Centre for Monitoring Indian Economy (CMIE).

No primary data has been collected. However, interviews were conducted with the executives of Mutual Funds Companies. During these interview, inquires were made about the status of regulations, current problems of mutual funds, process of investment decision, and return & risk calculations.

THE SAMPLE SIZE

The total private sector Equity fund consists of 220 different schemes, out of which 25 Equity funds were selected and it was the of sample size.

The sample funds which had track record of atleast three years in performance and annualized returns higher than the interest rates of 91-day treasury bills of government securities were selected for the study.

PERFORMANCE EVALUATION OF MUTUAL FUNDS

From the investor's point of view, the purchase of Mutual Fund units is one among the several alternatives of disposing of their personal savings. Hence performance analysis can be made by assessing the performance of funds with the relative merits and demerits of alternative forms of investment avenues. In such a case, the number of investment in mutual funds is to be known. A detailed study is to be conducted to know the specific motivations leading to the purchase of mutual find units from each investor. Such a type of study is beyond an individual's capacity and only an institution can take it up.

There are two approaches to understand the bewildering array of investment opportunities. The traditional approach is to view each type of investment as unique and describing its characteristics in detail. The modern approach is to select several attributes which are common to all investments and then attempt to measure to what extent a particular investment possesses these attributes. Out of several attributes, two of the attributes have characteristics which are extremely important to all types of investment avenues. They are: Return and Risk. All the investors are interested in maximum returns

out of a mutual fund. However, these returns are to be achieved with minimum risks. There is always a trade-off between return and risk.

In this study these two attributes, Return and Risk had been considered for detailed analysis, and relatively, sample mutual funds schemes were evaluated on these lines by adopting various measures which are discussed in the following section.

RISK- ADJUSTED PERFORMANCE

The idea behind the performance evaluation is to compare the returns obtained by the portfolio(or a mutual fund scheme) through active management by the investment manager, with the returns that would have been obtained by the client investor had one or more appropriate alternative portfolios been chosen for investment. Such portfolios chosen for comparison are often referred as 'benchmark portfolios'.

As many as 25 schemes of ABN AMRO, BIRLA Sun Life , DSP Black Rock ,DWS alpha, Franklin , HDFC,HSBC,ICICI ,KOTAK, Principal, reliance, Sundaram, Tata, DBS Fund, Fidelity,JM Equity fund and Can Robe co etc have been selected for the purpose of analysis . The concepts Return and Risk are explained below.

RETURN

For each mutual fund scheme in the sample, the returns have been calculated taking month- end Net Asset Values of last four periods, NAVs till 2009are considered, assuming reinvestment of dividends.

The returns are computed as follows;

$$R_t = (NAV_t - NAV_{t-1})/ NAV_{t-1}$$

R_t is the Port folio Return

NAV_t at the end of the month

NAV_{t-1} at the beginning of the month

Similarly, the returns on the market index are also computed. S&P CNX Nifty Index is assumed as benchmark index. This index is appropriate to evaluate a broad based equity fund on the basis of the size and the composition of the fund's portfolio.

$$Rm_t = (M. Ind_t - M . Ind_{t-1})/ M . Ind_{t-1}$$

Where Rm_t is the market portfolio return

$M. Ind_t$ is the market index at end of the month

$M . Ind_{t-1}$ is the market index at beginning of the month

Thus the performance evaluation is mainly concentrated for comparison of the scheme return with benchmark portfolio and risk–free return.

HOLDING PERIOD RETURN (HPR)

RISK

For diversified portfolios, such as common stock mutual funds, beta provides a useful index of investment risk. Simply stated, beta measures portfolio risk in relation to the riskiness of the market risk.

FAMA'S COMPONENTS OF INVESTMENT PERFORMANCE

The performance of the funds is also examined in terms of Fama's Components of Investment performance Measure. In terms of Fama's framework, portfolio return constitutes the following four components

(a) Risk –free return,

(b) Compensation for systematic risk

(c) Compensation for diversification and

(d) Net selectivity.

The different components have been worked out using the following:

Risk –free return: given

Compensation for systematic risk:

$[\beta (R_m - R_f)]$

Compensation for diversification: $[R_m - R_f] [\sigma_p / \sigma_m - \beta]$ and

Net selectivity: $[R_P - R_f]) - [\sigma_p / \sigma_m] [(R_m - R_f]$

The rationale for using this measure is that, the difference between return on an active bet and return on a passive bet, which is obtained from the security market line, may arise due to selectivity skills of fund managers. This difference is analogous to Jensen's alpha. Fama developed a methodology that helps us to decompose Selectivity skills into diversification return and net selectivity. The Former is nothing but a compensation for diversifiable risk to which active bet is exposed, while the latter reflects the true stock selection ability of the fund managers. A positive net selectivity indicates superior performance for a fund. However, in case of well diversified funds, both the net selectivity and selectivity are not likely to be significantly different from each other.

Fama (1972) developed a methodology for evaluating investment performance of managed portfolios. He suggested that the overall performance could be broken down into several components. A comprehensive mechanism for segregation of observed investment return due to managers' ability to pick up the best securities at a given level of risk (selectivity) from part that is due to the prediction of general market price movements (timings).

Fama's Decomposition of Total Returns

TABLE 1.1 FAMA'S BREAK-UP OF MF SCHEME RETURN

S No	Scheme Name	Scheme Return (%)	Impact of Beta (%)	Impact of Imperfect Diversification (%)	Returns due to Selectivity(%)
1	ABN AMRO Equity Fund	0.1596	0.07656	0.00104661	0.002936
2	Birla Advantage Fund	0.1918	0.0696	0.001566	0.04063
3	Birla Sun life front life	0.3054	0.05568	0.002668	0.167051
4	BOB Growth	0.2538	0.06264	0.0014652	0.10969
5	DSPBL Equity Fund	0.2673	0.0696	-0.0005233	0.11823
6	DSP Top 100 Equity Reg	0.296	0.0696	-0.004971	0.151371
7	DWS Alpha	0.297	0.0696	0.002878	0.144522
8	Franklin India Blue Chip	0.2163	0.06264	-0.0008896	0.07425
9	Franklin India Prima +	0.226	0.06264	0.0004186	0.08295
10	HDFC Core and Satellite Fund	0.976	0.06264	0.00382	0.82953
11	HDFC Equity Fund	0.1976	0.06264	-0.000627	0.05558

12	HDFC Growth Fund	0.2446	0.06264	0.0009419	0.101018
13	HDFC Top 200	0.2386	0.06264	-0.0024595	0.09841
14	HSBC Equity	0.314	0.06264	0.002511	0.16885
15	ICICI Prudential Discovery Plan	0.968	0.06264	0.01245	-0.05829
16	ICICI Prudential Growth Plan	0.202	0.06264	0.0001569	0.0595
17	ICICI Prudential Power	0.1666	0.06264	0.0043434	0.0196
18	Kotak 30	0.257	0.0696	-0.002354	0.1098
19	Principal Resurgent India Equity	0.2165	0.06264	0.0009419	0.07291
20	Reliance Growth Equity Fund	0.284	0.0696	0.004186	0.1303
21	Reliance Vision	0.2035	0.0696	0.00209	0.05599
22	Sundaram Growth Fund	0.24	0.07656	0.0068	0.07663
23	Sundaram India Leadership Fund	0.218	0.07656	0.01229	0.04915
24	Sundaram BNP Paribus select focus	0.2915	0.08352	0.0045	0.12348
25	Tata Pure Equity Fund	0.249	0.06264	0.0025	0.10386

RESULTS OF FAMA'S COMPONENTS OF PERFORMANCE

Table 1.1 gives information regarding Fama's components of performance for the Equity diversified funds. The overall performance was broken down into various components such as scheme return, impact of Beta (Risk premium), diversification and returns due to selectivity.

PERFORMANCE ON THE RISK

The performance on risk assesses returns being generated by fund managers due to their decision to take risk. The fund managers assume risk in the hope of generating extra returns on their portfolios. Nearly 25 of the sample schemes in diversified funds reflect positive performance on account of risk bearing activity of fund managers.

Further, in mid cap funds 9 funds generated positive performance on account of risk bearing activity of fund managers. Coming to opportunistic funds all the 12 funds generated positive performance. Next category funds are sect oral funds all the 15 funds generated positive performance.

Further 3 infrastructure funds also have generated positive performance. Coming to Tax planning funds all the funds too generated positive performance.

PERFORMANCE ON DIVERSIFICATION

The performance attributed to selectivity can be attributed to diversification and net selectivity. Diversification measures additional return that compensates the portfolio manager for bearing diversifiable risk. In Equity Diversified funds category DSPBL Equity fund, DSP Top 100 Equity Reg, Franklin India Blue Chip, HDFC Equity fund, HDFC Top 200, Kotak 30 have suffered on diversification.

Next, in mid cap fund category Birla mid cap, DBS Chola, DSPML small and mid cap, Franklin India, Prima fund, HSBC mid cap Equity fund, ICICI prudential emerging star, Reliance growth fund, Sundaram BNP paribus select Tata growth fund are perfectly diversified.

Further opportunistic funds are concerned DSPML opportunities fund, Fidelity Equity fund have suffered on diversification.

Infrastructure funds are concerned DSPBL TIGER, ICICI Prudential Infrastructure, Tata infrastructure fund have perfect diversification.Sectoral funds are concerned all funds are perfectly diversified.

In tax planning funds BOB ELSS 96, Franklin India Index Tax, Magnum Tax gain funds have suffered on diversification. Rest of the funds are perfectly Diversified.

PERFORMANCE ON NET SELECTIVITY

After accounting for diversification, the residual performance on selectivity is attributed to net selectivity. A positive net selectivity indicates superior performance. However, in case net selectivity is negative, then it means that fund managers have taken diversifiable risk that has

not been compensated by the extra returns. It can be seen (from table) in case of 25 diversified funds, 24 funds the selectivity measure is positive, thus reflecting superior stock selection ability on the part of their fund managers. It is the return earned over and above the return mandated by the total risk of the portfolio as measured by standard deviation. For ICICI Prudential Discovery fund the net selectivity is negative, it means that fund managers have taken diversifiable risk, that has not been compensated by the extra returns.

The findings of the study are summarized in below table 1.2

S.no	Risk and Return Characteristics	Funds Performance
1	Av Return of funds	0.21
2	Av Return of market	0.26
3	Av Risk of Funds	0.2637
4	Av Market risk	0.266
5	Av Risk free rate	0.081
6	Av Diversification	0.78
7	Av Beta of the Fund	0.92

The average return of the select 25 schemes is 0.21 percent per month and the average risk is 0.263 percent. As many as 21 schemes have an above average return. The average systematic risk (beta) of the schemes is 0.92. The average diversification is 0.78, which indicated that these schemes are low diversified. Due to inadequate diversification, a substantial part of the variation in fund return is not explained by the market. The funds were exposed to large diversifiable risk.

PERFORMANCE MEASURES OF TABLE 1.3

1	Fama's components of investment performance	
(a)	Performance on Risk	78 (97.5%)
(b)	Performance on Diversification	67 (83.75%)
(c)	Performance on Net Selectivity	60 (75%)

Over the past five years (2003-2009), each and every of the 10 funds have out performed all the four indices, S&PCNX NIFTY, BSE 100, and Sensex. To conclude, the mutual fund industry in

India has come a long way witnessing significant structural changes from a monopolistic structure to a competitive one, with the Indian economy on a high growth trajectory, improved corporate performance, on going economic reforms, rising income and higher saving levels make the industry's future look bright. However, this would not mean survival for all. The competition is going to be tough. In future the industry size is going to play an important role in the game of survival. There is no doubt that those with capabilities both in terms of the outsets under management and investment skills are going to rule the investment management scene.

The above analysis on the performance of sample schemes during the study period was concluded to be good. However, there are some instances

Thus, on the whole, it can be concluded that there was some evidence that some of the funds were performing better than the market. However there were some instances where poor performance has been reflected. Portfolio managers did fairly a good job in generating positive returns. It may lead to regain investor's confidence. Thus over all good performance of sector specific fund is a good sign of development in new era in capital market.So the future of mutual funds in India is bright , because it meets investors needs perfectly . The new sector – specific fund scheme will give boost to Indian investors and will attract foreign investors also. It will lead to the growth of a strong institutional frame

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