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**PERFORMANCE EVALUATION OF SOME SELECT EQUITY FUNDS FLOATED BY PRIVATE SECTOR BANKS**

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**ABSTRACT**

*The mutual funds from the private sector banks, HDFC and ICICI, two each from each group, Top 200 Growth, Capital Builder, Top 200 and Top 100 schemes of Growth Option are selected for evaluation in the present context. Long standing and steady growth formed the basis of the selection. These funds are statistically evaluated by standard deviation, correlation with market index, and the financial parameters, Sharpe's Index, Treynor Index, Jensen's alpha, Fama's Measure and  $M^2$ . The results indicate the supremacy of HDFC Top 200 fund over the others.*

**KEYWORDS**

Evaluation of mutual funds of the Private Sector Banks, HDFC and ICICI Prudential, Statistical appraisal of Top 200, capital Builder, Top 200 and Top 100 growth schemes.

**INTRODUCTION**

Mutual fund is defined as "a fund in the form of a trust by a sponsor, to rise money by the trustees through the sale of units to the public for investing in securities under the framework of the regulations". The Indian Mutual Fund Industry emerged as a dominant financial intermediary in Indian capital market during the last couple of years. Small investors can take benefits of stock market growth by investing in equity and debt instruments through MF. The appreciation of investment depends on the performance of fund and stock market. A mutual fund benefits from professional fund managers who can apply their expertise and dedicate time to research investment options. Thus funds play a significant role in financial intermediation development of capital markets and growth of the financial sector as a whole.

Performance evaluation of mutual funds is built on the twin expectations of the investors namely, risk premium and scheme's return over the market return. A preview of the performance of a mutual fund can serve as a guideline and to an extent in the selection of a fund for investment. However, past performance may not be a true representative of the future trend, and a cautious approach may be required.

A study of the available literature indicates that not all of the possible available tools are applied for the evaluation of mutual funds. Some of the research can be seen focused only on particular fund and highlights the advantage and disadvantages of that fund.

The most appropriate and commonly applied tool for assessing the performance of mutual fund scheme is to track the NAV. Future performance is predictable from past performance as funds are bought and sold based on NAV of schemes. Equity schemes are the close substitute for direct investment in capital market. As equity based schemes are comparatively riskier; investors expect return in relation to the risk involved. Hence, a better way to assess the portfolio is to consider return per unit of risk. To measure the risk, two appropriate quantitative risk surrogates that can be used are: standard deviation of rate of return and beta coefficient of the portfolio. Markowitz's portfolio theory paved the way for a new direction to the risk-return analysis of portfolios. The CAPM developed by Sharpe (1964) and John Lintner (1969) laid the foundation stone for the growth of capital market. Treynor (1965) and Jensen (1968) made remarkable contribution by developing models to evaluate portfolios. Fama made a valuable contribution to decompose return into various components. An empirical review of NAV of the selected growth schemes bequeaths a better understanding of the mutual fund schemes performance.

The present work is designed to evaluate the performance of the four equity funds selected, two each from the fund houses, HDFC and ICICI Prudential. The funds selected are HDFC Top 200 (G), HDFC Capital Builder (G), ICICI Prudential Top 200 (G) and ICICI Prudential Top 100 (G). As it is aimed at an exhaustive study of these funds, the period envisaged the past ten years, starting from the financial year 2002 - 03 to the end of the financial year 2011-12.

The sole idea behind selecting these funds being:

It is needless to mention that these funds have a long track record and withstood the acid test of time during various intervals.

**DATA COMPILATION AND COMPUTATION OF STATISTICAL EVALUATION PARAMETERS**

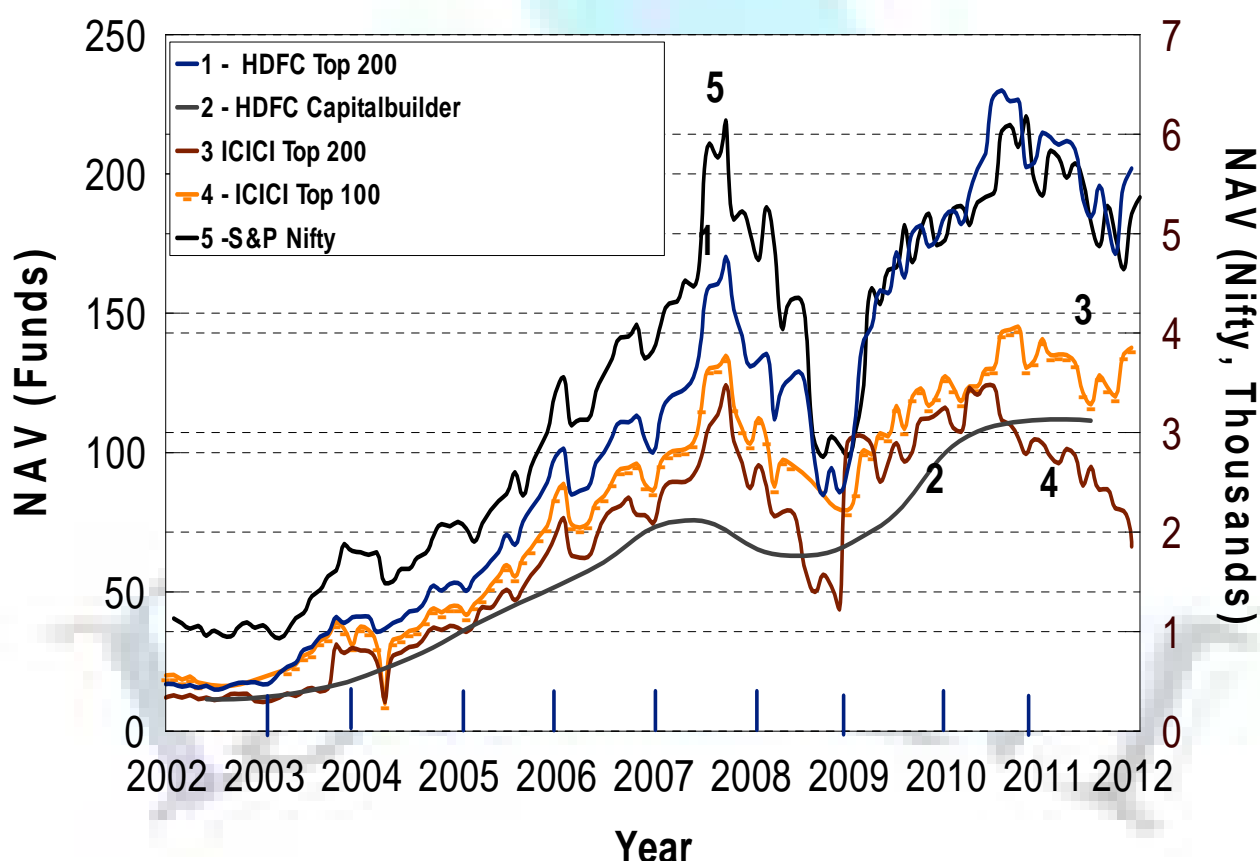
The Equity funds selected for appraisal include:

1. HDFC Top 200 Growth: Designed to generate long term capital appreciation by investing in a portfolio of equities and equity linked instruments drawn from the BSE 200 Index.
2. HDFC Capital Builder Growth: The Investment Objective of the Scheme is to achieve capital appreciation in the long term.
3. ICICI Prudential Top 200 Growth: Aims to generate capital appreciation through investments in equity related securities in core sectors and associated feeder industries
4. ICICI Prudential Top 100 Growth: Seeks to generate capital appreciation by actively investing in equity and equity related securities. For defensive considerations, the Scheme may invest in debt, money market instruments and derivatives

TABLE 1: FUND INFORMATION

Information	HDFC		ICICI	
	Top 200	Capital Builder	Top 200	Top 100
Type of scheme	Open Ended	Open Ended	Open Ended	Open Ended
Nature of scheme	Equity-+	Growth Scheme	Equity	
Launch date	Sep 11, 1996	January, 1994	Oct 1, 1994	Jun 19, 1998
Face value Rs. /Unit	10		10	10
Fund size (Rs. cr.)	11,381.06 (31/03/12)	41,333.28 (31/03/12)	477.00 (31/03/12)	304.93 (31/03/12)
Minimum Investment (Rs.)	5000	5000	5000	5000
Purchase redemptions	Daily	Every Business Day	Daily	Daily
NAV Calculations	Daily	Every Business Day.	Daily	Daily
NAV (Rs./Unit) as on 31-03-2012	185.967	106.6710	97.79	138.93
Entry load	0%.	Nil	0%.	NA
Exit load	1% If redeemed between 0 to 1 Year.	1% If redeemed within 1 year. No Exit Load if redeemed after 1 year	1%If redeemed between 0 to 1 Year;	1% if redeemed/ switched out within a period of 15 months.

FIG. 1: COMPARISON OF THE SELECTED FUNDS



The NAV values of the selected schemes were drawn for the period of study from the respective web sites of the fund managers. The monthly returns were obtained as

$$R_{PN} = \left( \frac{NAV_{Closing} - NAV_{Opening}}{NAV_{Opening}} \right) + 1 \quad (1)$$

The  $R_{PN}$  for a financial year are compounded for the annualized return,  $R_P$ .

$$R_P = \left( GM_{RP_1, RP_2, \dots, RP_{12}} \right) - 1 \quad (2)$$

Where GM is the geometric mean.

Comparison of the performance of a fund with the market or index performance indicates as to how well or worse the managed portfolio performed vis-a-vis market return vis-a-vis market return. Monthly values of S&P NSE Nifty were drawn from [www.nseindia.com](http://www.nseindia.com) for the study period, financial year 2002 to 2012 to compute the market return ( $R_m$ ) with reference to the funds.

The other parameter required for obtaining the evaluation parameters is the risk free return,  $R_f$ . Risk free rate of return is the available rate of return from investing in a risk free asset. The asset with the known terminal value is risk free asset. Government securities and deposits in national Banks fall under this category. Interest rate earned on the savings bank deposit of State bank of India is selected as the risk free rate in the present study.

The rate of return offered by SBI on savings bank deposit is 4% for the financial year 2011-12 and 2002-03 and for the financial years 2003-04 through 2010 it is 3.5% per annum. Average risk free monthly returns are 0.330% and 0.292% respectively.

The selected mutual funds are statistically evaluated for the study period, employing the average values obtained over the study period of Sharpe's Index ( $S_i$ ), Treynor's Index ( $T_i$ ), Jensen's Alpha ( $\alpha_i$ ), Fama's Measure and  $M^2$ .

The models developed on the assumptions of 'The Capital Asset Pricing Model' and tested by Treynor (1965), Sharpe (1966), Jensen (1968) and Fama's Decomposition of Returns was used to evaluate the performance of selected growth schemes.  $M^2$  was employed for the intercorrelation of the evaluation parameters.

**Sharpe Index ( $S_i$ )**: measures the risk premium of the portfolio with reference to the total amount of risk. The index  $S_i$  measures the slope of the line emanating from risk-free rate outward the portfolio. The larger the  $S_i$ , the better the portfolio has performed.  $S_i$  is the reward to variability of the scheme's total risk and is a summary measure of scheme's performance adjusted for risk.

$$S_i = \frac{A_{pt} - R_f}{\sigma_{pt}} \quad (3)$$

Where

$S_i$  = Sharpe Index

$R_f$  = Risk-free rate of return

$A_{pt}$  = Average return on portfolio 't'

$\sigma_{pt}$  = Risk involved in portfolio 't' returns

**Treynor Index ( $T_i$ )** sums up the risk and return of a portfolio in a single number. The index measures the slope of the line emanating outward from the risk-free rate to the portfolio under consideration. Treynor index is a reward to volatility of the portfolio. The characteristic line relates the market return to a specific portfolio return without any direct adjustment for risk. This line can be fitted through a least square regression involving a single market portfolio.

$$T_i = \frac{AR_p - R_f}{\beta_p} \quad (4)$$

**Jensen** constructed a measure of absolute performance on a risk-adjusted basis while Sharpe and Treynor models provided measures for ranking the relative performance of various portfolios on a risk-adjusted basis. Equilibrium average return on a portfolio is the benchmark. Equilibrium average return is the return of the market portfolio for a given systematic risk being:

$$EAR_p = R_f + (R_m - R_f) \beta \quad (5)$$

$EAR_p$  is the equilibrium return of the portfolio 'p' indicating superior / inferior performance of the portfolio's alpha ( $\alpha_i$ ). Jensen's Alpha is the intercept of the CRL. If alpha is positive, the portfolio has performed better and if it is negative, scheme performance is not up to the benchmark. In a well-diversified portfolio, the average value of alpha of all stocks turns out to be zero.

**Eugene Fama's Decomposition of Total Returns:** Eugene Fama provides for an analytical framework, which enables for a detailed analysis of scheme performance popularly known as Fama's Decomposition of Total Return. The total return on a portfolio constitutes of risk-free return ( $R_f$ ) and excess return.

The excess return arises from different factors such as risk accepted and stock selection. The excess return can be decomposed into two components, namely risk premium (reward for bearing risk) and for stock selectivity (return from stock selection).

Each portfolio will have both systematic risk and unsystematic risk. Hence risk premium can be decomposed into two components namely, return for bearing systematic risk (market risk) and return for bearing unsystematic risk.

The return for pure (net) selectivity is the additional return obtained by a portfolio manager for his superior stock selection ability over and above the return mandated by the total risk of the portfolio.

Fama's net selectivity ( $F_p$ ) is

$$F_p = R_p - \left[ R_f + \frac{\sigma_p}{\sigma_M} (R_M - R_f) \right] \quad (6)$$

**$M^2$** : The relative measures of performance, the Sharpe or Treynor Index are simple and primarily used to rank the funds. The numerical values of these parameters are not easy to interpret. Modigliani proposed a variant of Sharpe Index named  $M^2$  Measure. Unlike Sharpe Index,  $M^2$  is an absolute measure of return. Like Sharpe Index, this measure uses total volatility as a measure of risk and reflects the proposition that by choosing a portfolio for investing matters in measuring its performance, is total risk, and not just systematic risk. However, its risk adjusted measure of performance has the easy interpretation of a differential return relative to the benchmark index. Performance can be simply be measured by comparing the returns from the market index and that of adjusted portfolio. This performance measure is defined as

$$M^2 = \left[ \frac{\sigma_M(R_p) + 1 - \left( \frac{\sigma_M}{\sigma_p} (R_p) \right) \right] - R_M \quad (7)$$

The  $M^2$  is the difference between the two returns. When the capital Allocation Line (CAL) of the portfolio is less steep than CML,  $M^2$  would be negative, signifying below normal performance of the fund manager. When the CAL is steeper than CML,  $M^2$  will be positive, signifying above normal performance of the fund manager.

## LIMITATIONS

- Investments decisions taken based on statistical data might not yield desired returns.
- All the caveats attached to mutual funds will apply to the funds selected for this study.
- Banks are free to accept deposits at any interest rates within the ceiling fixed by Reserve Bank of India. Hence there can be possibility in the accuracy of risk free rates.

## RESULTS AND CONCLUSIONS

The  $R_p$  of the selected funds, corresponding  $R_m$  values and their  $\sigma$  values are included in Table.2 and are represented by Fig.1, for comparison and correlation. Standard deviation represents the risk involved in the mutual fund and hence the fund with a low standard deviation is favored. The standard deviation data indicates that the average performance being far more inferior of the HDFC top 200 scheme by a large factor compared to the other schemes under study. The performance of all the funds were to an extent better than the market with only a few rare exceptions. This observation is based on the comparison of  $R_m$  and  $R_p$  values correlation between the fund and the market was reasonable in the case of HDFC Top 200 and ICICI Prudential Top 100 schemes where as the other two schemes are far below performance wise compared to the market.

TABLE.2. PORTFOLIO RETURN ( $R_p$ ), MARKET RETURN ( $R_M$ ), CORRELATION COEFFICIENT  $Corr_{(R_p, R_M)}$  AND STANDARD DEVIATION ( $\Sigma$ ) OF THE SCHEMES

FUND	HDFC		ICICI Prudential		S&P CNX Nifty
	Top 200(G)	Capital Builder(G)	Top 200(G)	Top 100(G)	
YEAR	$R_p$				$R_M$
2011-12	-0.0051	0.0013	0.0364	-0.0050	-0.0120
2010-11	1.0073	-0.1050	0.0020	0.0014	0.0058
2009-10	5.2871	0.0154	-0.0040	0.0195	0.0047
2008-09	-3.6507	-0.0378	-0.0033	-0.0018	-0.0383
2007-08	2.3347	0.0227	0.0157	0.0063	0.0179
2006-07	0.0445	-0.001	-0.0777	0.0012	0.0100
2005-06	4.6386	-0.0233	0.0338	0.0387	0.0439
2004-05	1.4034	0.0122	0.0124	0.0034	0.0116
2003-04	1.1194	0.0511	0.0125	0.0713	0.0512
2002-03	-1.022	-0.001	-0.019	-0.008	-0.011
$\Sigma$	2.6052	0.04227	0.03239	0.02471	0.02622
$Corr_{(R_p, R_M)}$	0.8588	0.4102	0.1612	0.8271	

The results of the statistical evaluation parameters are presented in Table.3. Sharpe Rule stipulates that in assessing the comparative merits of the funds a fund with higher  $S_h$  is to be chosen. An investor with a different risk performance might choose a different base. Higher the Sharpe Ratio, more attractive the fund becomes. In the present study, it can be seen that HDFC Top 200 is the best performer of the selected lot. Others can be termed far most inferior due the negative values. High Treynor Ratio indicates a more attractive fund. The same order of merit of the schemes can be observed from the Treynor's Ratio comparison.

TABLE 3: STATISTICAL EVALUATION PARAMETERS OF THE SELECTED SCHEMES

Fund	HDFC		ICICI Prudential	
	Top 200(G)	Capital Builder(G)	Top 200(G)	Top 100(G)
Perametar				
$S_t$	2.92	-3.37	-2.72	-3.59
$T_f$	0.3682	-1.2697	-0.5779	-0.3739
$\alpha_i$	0.3657	-0.1956	-0.4917	-0.5234
$F_p$	0.3639	0.7607	0.3276	0.3703
$M^2$	2.9351	0.5469	0.9130	0.2995

Only HDFC Top 200 has positive alpha. The inferences are that the other funds with negative alpha have underperformed the bench mark index.

A high Fama's Information Ratio indicates a manager's ability to achieve higher returns. The  $F_p$  values are suggestive that the HDFC Capital Builder is healthier than the others; the other three schemes are of the same order.

$M^2$  is positive, for all the schemes, signifying above normal performance of the fund manager.

Spearman Rank Correlation (Table.4) of the Evaluation parameters was excellent between the evaluation parameters except the HDFC Top 200 Growth fund as expected as the fund's performance was different being far better than the other funds.

TABLE 4: SPEARMAN RANK CORRELATION OF THE EVALUATION PARAMETERS

Fund	HDFC		ICICI Prudential	
	Top 200(G)	Capital Builder(G)	Top 200(G)	Top 100(G)
Perametar				
$S_t$	1			
$T_f$	-0.379	1		
$\alpha_i$	-0.257	0.960*	1	
$F_p$	-0.491	0.909	0.966*	1
$M^2$	-0.401	0.948*	0.921*	0.854*

\* Correlation is significant at the 0.01 level (1-tailed).

In a nutshell, it can be concluded that HFC Top 200 followed by HDFC Capital Builder can become a best bet for the investors based on the past performance.

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