PERFORMANCE OF EXCHANGE TRADED FUNDS-INDEX

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Abstract

Mutual funds as an investment vehicle have gained immense popularity in current scenario, which is clearly reflected in the robust growth levels of assets under management. However, despite this robust growth still the penetration level in India are low when compared with the global companies. Emergence of Stock Exchange platforms is seen as a suitable means to increase penetration levels of financial assets and thus mutual funds. The ETFs are based on the stocks that reflect the composition of an index, like S&P CNX Nifty or Sensex, it is just like a equity which trades on the exchanges. There are about 19 ETFs and 14 Gold ETFs traded in India, out of which 7 funds were selected for the study. Investment performance, risk and stock selection ability of these funds are analyzed. The empirical results of ETFs reflect about the efficiency of the fund performance over and above the market returns, it reflects the risk involved in ETFs and shows the stock selection ability of the fund manager.

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Introduction

The Indian mutual fund industry is passing through a transformation, on one side it has the regulatory developments and the other side, overall recovery from the global crisis 2008.The ETFs serve as an alternate mechanism for performing mutual fund transactions. ETFs are essentially index funds that are listed and traded on exchanges like stocks. Global ETFs have opened a whole new panorama of investment opportunities to retail as well as institutional money managers. This enables the investors to gain broad exposure to entire stock markets in different countries and specific sectors. The ETFs helps the investor to drive benefits owing to the diversification and ability to access to multiple assets and real-time asset allocation at a low cost. The exchange traded fund though exists since 1993, as of may 2012 there were 3256 ETFs with assets of $1.4 tn globally vs 1171fundsand $797bn assets in 2007. The Figure-1, shows the exponential growth in ETFs assets and funds globally. Though the ETFs are having a slow pick up in the retail space, it has started gaining acceptance by the emerging countries like India on the retail sector.

Need and Significance of the study:

The impressive growth in the mutual funds has attracted Indian investors and the volatility on the specific stocks make the investor look into the diversified funds and the risk return part is also taken care. With the emergence of ETF and its growth in size, it is appropriate, relevant and optical to focus the attention on the performance of ETFs which would enable the investors to select the suitable fund based on the risk and return.

OBJECTIVES OF THE STUDY

1. To evaluate the investment performance of the overseas fund of funds.
2. To analyze the risk involved with the various overseas fund of funds.
3. To analyze the stock selection ability of overseas fund of funds.

RESEARCH METHODOLOGY

Target population:

The target population of the study is Exchange Traded Funds based on NIFTY index, listed on the National Stock Exchange in India. There are 19 ETFs listed in NSE exchange.

Sampling

Judgment sampling technique is used for selecting ETFs. The funds are selected based on the closing price of the data available for the entire period of the study. Thus seven funds has been selected out of 19 funds.

Data Source

The study is based on the secondary data. For evaluating the performance of the funds the closing price of the ETF are taken for the period January 2012 to December 2012 from the national stock exchange website.

FRAME WORK OF ANALYSIS

Performance measures used in the study:

The performance of selected funds is evaluated using average rate of return of fund, standard deviation, risk/return, Sharpe ratio, Treynor ratio and Jensen ratio. The returns for the mutual funds selected for the study is computed on the basis of the Net Asset Value (NAV) of the schemes using the formulae

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

Where Rp = Return on the fund

NAV_t & $NAVt_{-1}$ are the net assets values for the time period t and t-1 respectively.

Return alone should not be considered as the basis of measurement. Performance of a mutual fund scheme not only include return, but also the risk taken by the fund manager because different funds will have different levels of risk attached to them. Risk associated with a fund, in general can be defined as the variability or fluctuations in the returns generated by it. The higher the fluctuations in the returns of a fund during fund's performance and is reported as an annual number. When a fund has high Standard Deviation, its range performance has been very wide, indicating that there is a greater potential for volatility. The next common measure that combines both risk and reward are sharpe ratio, Treynor ratio and Jensen ratio

Treynor ratio

$T_p = (R_p - R_f) / \beta_p$

T_p=Treynor ratio for fund

R_p = Average return on fund

R_f = Risk free rate

β_p = beta of portfolio

Higher value of Treynor index indicate better performance of portfolio and vice-versa. The Treynor's measures of portfolio performance is a relative measure that ranks the funds in terms of the risk (market risk) and return. The index is also termed as reward to volatility ratio.

Sharpe ratio

$S_p = (R_p - R_f) / \sigma_p$

Where

S_p=Sharpe ratio for the fund

R_p = Average return on fund

σ_p = standard deviation of return on fund

R_f = Return on risk free asset.

Higher value of sharpe index indicates better performance of portfolio and vice versa. The sharpe measure of portfolio performance is also a relative measure that ranks the funds in terms of risk (total risk) and return. The ratio is termed as reward to variability ratio.

Jensen's Measure:

Jensen measure is a risk adjusted performance that represents the average return on a portfolio over and above that predicted by the CAPM (Capital Asset Pricing Model), given the portfolio's beta and the average market return. This is portfolio alpha and called as 'Jensen Alpha'. Jensen measure is one of the ways to help to determine it a portfolio in earning the proper return for its level of risk. If the value is positive, then the portfolio is earning excess return. In other words, a positive value for Jensen alpha means a fund manager has "beat the market" with his or her stock picking skills. The Jensen ratio measures how much of the portfolio's rate of return is attributed to the manager's ability to deliver average returns, adjusted for market risk. The higher the ratio, better the risk-adjusted return. A portfolio with a consistently positive excess return will have a positive alpha, while a portfolio with consistently negative excess return will have negative alpha.

$J_p = R_p - [R_f + \beta_p(R_m - R_f)]$

Where:

J_p = Jensen performance measure (α_P)

R_p= Return on portfolio

R_f = Risk-free return

β_p = beta of portfolio

R_m = Market return

Standard Deviation: Standard deviation measures the variation in individual return from average return over a certain period of time. Standard deviation is calculated by using the following formula (T.N.Srivastava, 2009):

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

σ = standard deviation

$\sum$ = sum of

x = each value in the data set

$\bar{x}$ = mean of all values in the data set

n = number of value in the data set

Co-efficient of variation (C.V.): Co-efficient of variation helps in measuring the relative dispersion of the fund among other funds. It is defined as the ratio of standard deviation to the mean. Higher is the value of C.V. higher is the risk. Co- efficient of variation is calculated by using the following formula (T.N.Srivastava, 2009):

$$CV = \frac{\sigma}{X}$$

σ = standard deviation

x = mean

Beta: Beta co-efficient compares the variability of fund's return to the market as a whole. It is a relative measure. By convention, market will have beta 1.0. If the funds have beta value above the market then it is said to have high risk than the market. If it have beta value less than the market then it is said to have risk less than the market. The beta is calculated by using the formula (S.Kevin, 2011):

$$\text{Beta} = \frac{(\gamma_{im})(\sigma_m)(\sigma_m)}{(\sigma_m)^2}$$

γ_{im} = Correlation co-efficient between the returns of the fund and the returns of the market index.

σ_i = Standard deviation of returns of funds

σ_m = Standard deviation of returns of the market index

$(\sigma_m)^2$ = variance of the market returns

RESULTS AND DISCUSSION

Investment performance of ETFs Fund:

Investment performance of ETFs

Table2, represents the investment performance analysis of ETFs, from the average monthly return point of view out of seven funds selected for the study only four funds have shown higher return when compared with Nifty market return. The Quantum Index Fund, Most-50, Religare Nifty ETF and IIFL Nifty have shown better returns. The risk adjusted performance measure based on Sharpe ratio shows that Quantum Nifty ratio (2.942) stood first followed by Most-50, IIFL (0.29). By Treynor ratio, the Quantum Nifty has shown better returns with regards to volatility of the fund and ranked the top with the ratio of 2.3035 followed by Most-50.

Risk involved in ETFs:

The funds investment objective and its holdings are influence factors in determining how risky a fund. The risk/return trade off measures the risk and potential return. The fund with higher risk has the potential for higher return, it also has the greater potential losses on negative return. Table -3 predicts the risk associated with the ETFs. The standard deviation of all the Seven funds selected for the study reveals that only 3 funds- Quantum Nifty (3.79), Kotak Nifty (3.655) and Birla Nifty (3.583) has shown less than the Standard Deviation of the Nifty market return of 3.934. The best performing fund Quantum Nifty have found to have better returns and its terms of risk/return trade off stood firsts out of the seven funds.

The co-efficient of variation value also reveals us to determine the volatility(risk) in comparison to the expected return from the investment. The lower rate determine better risk-return trade off.

Quantum Nifty fund has the lowest rate of 2.088 followed by Kotak Nifty fund of value 2.139 and Most-50 in 2.145 and IIFL of 2.145.

Stock Selection Ability of ETFs:

Stock selection and market timings are the prime activities and contributed widely in the return-generation process. The investment performance of stock selection pertains to forecast the company specific events, it refers to the manager ability to identify the under/over valued securities. Table-4 presents the Jensen's performance measures for all the funds and the results range from negative of BSL nifty -0.355 to 0.6225 of Quantum Nifty fund. To rank the return according to Jensen's alpha measure divided by the beta value. The Quantum Nifty fund ranks the top first followed by the Kotak Nifty fund , the least performing funds in ETFs are BSL nifty and GS Nifty Bees. With respect to volatility most of funds have not performed better. In terms of ability of market timing and selectivity, the fund managers shows poor performance.

Conclusion:

This research paper evaluates the performance of ETFs floated and traded on the national stock exchange. The monthly average returns of the four funds are above the market returns. ETFs have generated higher returns compared to the market. In terms of risk- adjusted measures by Sharpe and Treynor, Quantum Nifty, Most-50,IIFL Nifty are the best performers. The analysis of stock selection ability of the funds – Quantum Nifty, Most-50 and Kotak Nifty ranks the best categories of the mutual funds. ETFs has definitely marked a mark on the Indian investment panorama. The growth and the success of the ETFs would help the investor to choose the superior funds and it necessitate the fund manager to effectively improve the fund performance above the market returns.

References:

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Table-1 Other than Gold-ETFs traded in NSE

Scheme Name of ETFs	Inception Date	AUM(In Rs.Cr.)* Latest	CAGR Since Inception
Birla SL Nifty ETF	22-Jul-11	1.11	5.38
GS Bank BeES	27-May-04	58.49	18.35
GS Hang Seng BeES	15-Mar-10	10.62	11.36
GS Infra BeES	05-Oct-10	4.27	-15.67
GS Junior BeES	05-Mar-03	76.78	29.42
GS Nifty BeES	28-Dec-01	494.06	17.41
GS PSU Bank BeES	31-Oct-07	7.30	1.13
GS Shariah BeES	30-Mar-09	0.69	19.30
IIFL Nifty ETF	25-Oct-11	10.57	11.63

Kotak Nifty ETF	08-Feb-10	47.99	8.14
Kotak PSU Bank ETF	08-Nov-07	9.03	-0.56
Kotak Sensex ETF	12-Jun-08	5.93	6.68
MOSt Shares M50	28-Jul-10	45.39	0.53
MOSt Shares Midcap 100 ETF	04-Feb-11	87.73	-1.26
MOSt Shares NASDAQ-100 ETF	30-Mar-11	69.09	28.24
Quantum Index Fund ETF	18-Jul-08	2.25	18.73
R* Shares Banking ETF	19-Jun-08	10.69	14.10
Religare Invesco Nifty ETF	17-Jun-11	1.39	6.24
SPIcE	13-Jan-03	0.95	19.59

Source: National Stock Exchange

Table-2 Investment performance of ETF fund

S.No	Name of the Fund	Average Monthly return in %	Sharpe Ratio		Treynor Ratio	
			Value	Rank	Value	Rank
1	GS Nifty BeES	1.657	0.242	5	0.953	3
2	Quantum Index Fund ETF	1.8164	0.2942	1	2.3035	1
3	MOSt Shares M50	1.849	0.29	2	1.951	2

4	Birla SL Nifty ETF	1.094	0.11	7	0.536	7
5	Religare Invesco Nifty ETF	1.956	0.254	6	1.783	5
6	IIFL Nifty ETF	1.849	0.29	3	1.71	6
7	Kotak Nifty ETF	1.709	0.276	4	1.787	4

Table-3 Risk associated with the fund

S.No	Name of the Fund	Average Monthly return in %	Standard Deviation		Co-efficient of Variation		Beta	
			Value	Rank	Value	Rank	Value	Rank
1	GS Nifty BeES	1.657	**3.95**	**4**	**2.387**	**5**	1.004	7
2	Quantum Index Fund ETF	1.8164	**3.79**	**3**	**2.088**	**1**	0.4846	1
3	MOSt Shares M50	1.849	**3.96**	**5**	**2.145**	**3**	0.589	3
4	Birla SL Nifty ETF	1.094	**3.583**	**1**	**3.275**	**7**	0.735	6

5	Religare Invesco Nifty ETF	1.956	**4.941**	**7**	**2.526**	**6**	0.705	5
6	IIFL Nifty ETF	1.849	**3.966**	**6**	**2.145**	**4**	0.672	4
7	Kotak Nifty ETF	1.709	**3.655**	**2**	**2.139**	**2**	0.564	2

Nifty Market Return	1.719	**3.934**

Table-3 Stock Selection ability of fund manger using Jensen Measure

S.No	**Name of the Fund**	**Jensen measures**		**Rank**
		α	**α/β**	
1	GS Nifty BeES	**-0.066**	**-0.066**	**6**
2	Quantum Index Fund ETF	**0.623**	**1.284**	**1**
3	MOSt Shares M50	**0.549**	**0.932**	**2**
4	Birla SL Nifty ETF	**-0.355**	**-0.483**	**7**
5	Religare Invesco Nifty ETF	**0.538**	**0.764**	**4**
6	IIFL Nifty ETF	**0.465**	**0.691**	**5**
7	Kotak Nifty ETF	**0.434**	**0.768**	**3**