ETF VIS-À-VIS INDEX FUNDS: AN EVALUATION

PROF. PRASHANTA ATHMA
Dept. of Commerce,University College for Women,
Osmania University, Koti,
Hyderabad
Email id:prashantaathma@gmail.com

K. RAJ KUMAR
Academic Consultant, University College,
Palamuru University, Mahabubnagar.
Email id:rajunsc@gmail.com

Abstract

An Exchange-Traded Fund (ETF) and Index Funds are an innovative products which puts together favorable characteristics of open-ended and closed-ended mutual funds and presents a more flexible and liquid product for investors. The study covers the trends and progress of ETFs and Index Funds in India and to evaluate the performance of ETFs vis-à-vis Index Funds in India. The study is based on secondary data and covering the period of five years from 2005 to 2009 for the purpose of evaluating performance of select ETFs and Index Funds in India. Since inception, the data has been collected for the purpose of analyzing trends and progress of ETFs and Index funds in India. The parameters for evaluating the performance are Net Asset Value, Risk, Return, Expenses Ratio, Tracking Error, Reward to Variability and Differential Return. The statistical tools like Standard Deviation, Beta, Alpha, R-squared and Sharpe Ratio are used for data analysis. It is concluded that ETFs have given better opportunity for the small investors in terms of diversified portfolio with a small amount of money; low expense ratio, reduced tracking error, lower risk and volatility as compared to Index Funds. The ETFs can become a best investment alternative, provided, awareness is created among the investors.

Introduction

An Exchange-Traded Fund (ETF) is an investment company whose shares are traded intra-day on stock exchanges at market-determined prices. ETFs enable investors to buy or sell shares on the collective performance of a stock or bond portfolio. ETF is an innovative product which puts together favorable characteristics of open-ended and closed-ended mutual funds and presents a more flexible and liquid product for investors. Over the past decade, demand for ETFs has grown markedly as investors—both institutional and retail—increasingly turn to them as investment options in their portfolios. With the increase in demand, sponsors have offered more ETFs with a greater variety of investment objectives. While ETFs share some basic characteristics with mutual funds, there remain key operational and structural differences between the two types of investment products.

An ETF is an investment company, typically a mutual fund or unit investment trust, whose shares are traded intraday on stock exchanges at market-determined prices. Investors may buy or sell ETF shares through a broker just as they would buy the shares of any publicly

traded company. ETFs are just what their name implies: baskets of securities that are traded, like individual stocks, on an exchange. Unlike regular open-end mutual funds, ETFs can be bought and sold throughout the trading day like any other stock.

An Index Fund is a Mutual Fund that aims to replicate the movements of an index of a specific financial market. An Index Fund follows a passive investing strategy called Indexing. It involves tracking an index say for example, the Sensex or the Nifty and builds a portfolio with the same stocks in the same proportions as the index. The Fund makes no effort to beat the index and in fact it merely tries to earn the same return.

In India, NIFTY BeES is the first-ever ETF launched in India on 8/1/2002 by Benchmark Funds. On 20th May 2009, **Benchmark NIFTY Junior BeES** recorded its highest trading volume on the NSE with over a million units traded on the exchange which dispels the myth that ETF's are traded in low volume and it's difficult to buy and sell large quantities. Benchmark asset Management Company created one more milestone in Indian ETF industry by starting one and only ETF available in the world i.e. Liquid BeES (Liquid ETF).

In India, ETFs are slowly gaining popularity with the introduction of different schemes by more than 8 Mutual Fund Houses with Rs. 23,968.934 crores Assets Under Management (AUM) as on March 2010. Investors are now realizing the benefits of ETF's and have started to invest in and find value in ETF's and Index Based Fund.

Review of Literature

Jonne M. Hill and Barbara Mueller (2001)[1] made a research on ETFs and they concluded that Tracking errors and returns based on fund NAV relative to the index reflect characteristics of the product structure. In addition, price-to-index returns and tracking error reflect ETF prices that are captured at a different time from the underlying index and the short-supply and demand factors relevant to the ETF, as well as the hedging instruments used by the market makers. NAV tracking error is much lower than price-to-index tracking error and is the most useful measure in assessing the long-term characteristics of an ETF relative to its underlying index.

Philippe Jorion (2003)[2] in his article explored the risk and return relationship of active portfolios subject to a constraint on tracking-error volatility (TEV), which can also be interpreted in terms of value at risk. Such a constrained portfolio is the typical setup for active managers who are given the task of beating a benchmark. The problem with this setup is that the portfolio manager pays no attention to total portfolio risk, which results in seriously inefficient portfolios unless some additional constraints are imposed. The study reflected that TEV-constrained portfolios are described by an ellipse on the traditional mean–variance plane. This finding yields a number of new insights. Because of the flat shape of this ellipse, adding a constraint on total portfolio volatility can substantially improve the performance of the active portfolio. In general, plan sponsors should concentrate on controlling total portfolio risk.

Manuel Ammann, Stephan Kessler and Jurg Tobler(2006)[3] stated that for investors, it is important to know what trading strategies an asset manager pursues to generate excess returns. In this paper, they proposed an alternative approach for analyzing trading strategies used in active investing. They used tracking error variance (TEV) as a measure of activity

and introduced two decompositions of TEV for identifying different investment strategies. To demonstrate how a tracking error variance decomposition can add information, a simulation study testing the performance of different methods for strategy analysis is conducted. In particular, when investment strategies contain random components, TEV decomposition is found to deliver important additional information that traditional return decomposition methods are unable to uncover.

Benchmark Funds Asset Management Company(2008)[4] research department did research in early 2008 on the topic of **"Myth of Eternal Alpha"** It has often been argued that individual active fund managers are consistently able to exploit anomalies and aberrations that may exist in the market and while considering out performance/ under performance one should look at longer periods.

B Phaniswara Raju and K Mallikarjuna Rao (2009)[5] made a study on "**Market Timing Ability of Selected Mutual Funds in India: A Comparative Study"** and they analyzed the market timing ability of selected fund managers, which is a vital aspect in the success of a mutual fund. In order to measure the market timing ability of the fund managers, two important models, namely, Treynor and Mazuy and Heriksson and Merton, have been used with BSE sensex and NSE Nifty as market proxies.

Research Gap

The above review of literature points out that they mainly studied the performance of the Index Funds in terms of returns and tracking error. Both the ETFs and Index funds returns are based on the respective index. But ETFs are continuously priced throughout the trading day, whereas mutual fund sales take place at the end of the day price.

ETFs should be able to more closely track an index than a Mutual Fund. Both Index ETFs and Index Mutual Funds face the need to reinvest dividends and interest they receive on the securities they own. They both also need to adjust their holdings in response to changes in the companies included in the underlying index they track. However, because they are "open ended" Mutual Funds, Index Fund managers are also confronted with the need to provide liquidity to buyers and sellers of their fund's shares, which requires them to hold a percentage of their assets in cash. ETF managers don't have to do this, because purchases and sales of their fund's shares take place only in the secondary market (ETFs are closed end funds). Because they don't have to hold cash to provide liquidity, they should be able to track an index more closely than an index mutual fund. In this context, there is a need to evaluate the performance of both the ETFs and Index Funds.

Need For the Study

Exchange-Traded Funds constitute the most recent innovation in global capital markets. These funds aim at enhancing investors' participation by providing considerable benefits like cost-effectiveness and risk-diversification. ETFs are publicly listed securities, tracking the performance of the stock basket of the index against which their investments are benchmarked. In plain words, ETFs are the hybrid product of both Mutual Funds and normal stocks so that these funds will have the qualities of both. ETFs gained rapid popularity in the

US and Canada during the 1990s and underwent a phenomenal growth since the years of the Dot Com bubble, internationally.
According to the US Investment Company Institute, the total value of assets managed by US ETFs alone in January 2009 was almost half a trillion ($495,379 billion) US dollars while the recent years have witnessed a prolific expansion of ETF-trading in European and Asian capital markets. In view of the above developments, research in finance exhibits a surging interest in this area, with an increasing number of studies focusing on the examination of ETFs.

Growth of ETFs in India was very less than USA, Canada. But there is a huge scope for growth in India because of its advantages over Index Funds. Therefore, the present study aims at making a performance evaluation of ETFs vis-à-vis Index funds in order to know the barriers for the growth of the ETFs in India.

Objectives of the Study

The objectives of the study are

- To present the trends and progress of ETFs and Index Funds in India
- To evaluate the performance of ETFs vis-à-vis Index Funds in India.

Sources of Data

The study is based on secondary data. The Secondary data sources include Fact sheets of Mutual funds, articles, news papers, SEBI manuals, AMFI reports and websites. However, to gain an insight into the working of ETFs, discussions were held with the officials of stock brokerage firms and Investors.

Period of the Study

The study covers a period of five years from 2005 to 2009 for the purpose of evaluating the performance of select Exchange Traded Funds and Index Funds in India. However, for the purpose of analyzing the trends and progress of Index funds and ETFs in India, the data are collected since inception viz., 1998 and 2002 respectively.

Sample Size

There are 19 ETF schemes (including 7 Gold ETFs) and 24 Index Funds in India. Out of which, data with regard to all the parameters selected for the evaluation of performance were available only for 10 ETF schemes and 19 Index funds which were operating between the period of 2005 – 2009. Hence, the study is made only for these funds.

The parameters for evaluating the performance are Net Asset Value, Risk, Return, Expenses Ratio, Tracking Error, Reward to Variability (Sharpe) and Differential Return (Alpha).

Statistical Techniques

The data are analyzed with the help of statistical tools like Standard Deviation, Sharpe Ratio, Alpha, R-squared and Beta.

Trends and Progress of Exchange Traded Funds and Index Funds

The Mutual Funds are a fast growing sector of the Indian Financial Markets. They have become a major vehicle for mobilization of savings, especially from the small and household savers for investment in the capital market. Mutual Funds entered the Indian Capital Market in 1964 with a view to provide the retail investors the benefit of diversification of risk, assured returns and professional management. Since then, they have grown phenomenally in terms of number of funds, size of operations, investor base and scope. With the ushering in of economic reforms in the early 1990s, the Government of India opened the way for the entry of private sector and foreign players into this industry today. In India, the Mutual Fund Industry came into being with the establishment of Unit Trust of India in 1964. Public sector banks and Financial Institutions began to establish Mutual Funds in 1987. The private sector and foreign institutions were allowed to set up mutual funds in 1993. Mutual Funds have come forward with varying schemes suitable to the needs of saving populace. By March 2010, there were 42 mutual fund houses in India with Assets Under Management of Rs.7.47 lakh crores (approx) as shown in Table – 1 below.

Table – 1: Assets Under Management (Aum) Of All Mutual Funds At The End Of March – 2010 (Rs. In Crores)

S.No.	Mutual Fund Name	Excluding Fund of Funds - Domestic but including Fund of Funds - Overseas
1	AEGON Mutual Fund	N/A
2	AIG Global Investment Group Mutual Fund	1,13,781.39
3	Axis Mutual Fund	3,55,180.47
4	Baroda Pioneer Mutual Fund	3,57,412.61
5	Benchmark Mutual Fund	1,99,922.14
6	Bharti AXA Mutual Fund	54,867.31
7	Birla Sun Life Mutual Fund	62,34,337.09
8	Canara Robeco Mutual Fund	9,22,045.07
9	Deutsche Mutual Fund	10,47,686.84
10	DSP BlackRock Mutual Fund	21,49,078.38
11	Edelweiss Mutual Fund	14,928.77
12	Escorts Mutual Fund	20,294.9
13	Fidelity Mutual Fund	7,68,390.79
14	Fortis Mutual Fund	7,88,955.12
15	Franklin Templeton Mutual Fund	33,29,004.28
16	Goldman Sachs Mutual Fund	N/A
17	HDFC Mutual Fund	88,77,984.4
18	HSBC Mutual Fund	6,21,542.19
19	ICICI Prudential Mutual Fund	80,98,884.98
20	IDBI Mutual Fund	N/A

21	IDFC Mutual Fund	25,38,605.86
22	ING Mutual Fund	1,54,743.73
23	JM Financial Mutual Fund	7,99,745.91
24	JPMorgan Mutual Fund	3,54,136.42
25	Kotak Mahindra Mutual Fund	34,68,108.39
26	L&T Mutual Fund	2,51,101.4
27	LIC Mutual Fund	42,30,396.62
28	Mirae Asset Mutual Fund	25,098.18
29	Morgan Stanley Mutual Fund	2,25,706.52
30	Motilal Oswal Mutual Fund	N/A
31	Peerless Mutual Fund	30,260.21
32	PRINCIPAL Mutual Fund	6,99,650.58
33	Quantum Mutual Fund	9,163.82
34	Reliance Mutual Fund	1,10,41,270.92
35	Religare Mutual Fund	12,94,457.69
36	Sahara Mutual Fund	63,534.73
37	SBI Mutual Fund	37,41,700.35
38	Shinsei Mutual Fund	36,741.31
39	Sundaram BNP Paribas Mutual Fund	13,69,138.67
40	Tata Mutual Fund	21,93,516.93
41	Taurus Mutual Fund	2,30,706.91
42	UTI Mutual Fund	80,21,780.73
Grand Total		**7,47,33,862.61**

Source: Amfi

Exchange Traded Funds In India

ETFs are the new products from the Mutual Fund Houses and are also slowly gaining popularity. They have huge potentiality to grow in India because of its technical advantages over traditional Mutual Funds. Gold ETFs are also gaining popularity from the last one year. Once an equity market stabilizes, the Fund Houses are ready to start new kind of product in this area. Table – 3 below tells us the different schemes available in India and their individual AUM.

Table – 3: Funds Mobilized By Exchange Traded Funds As On March 2010

S.No.	Name of the Fund	Amount (Rs. In Crores)
1	Banking Index Benchmark Exchange Traded Scheme (Bank BeES)	6,079.65
2	Gold Benchmark Exchange Traded Scheme (Gold BeES)	76,092.63
3	Hang Seng Benchmark Exchange Traded Scheme (Hang Seng BeES)	4,059.45
4	KOTAK GOLD ETF	12,601.43
5	Kotak Nifty ETF	4,238.48
6	Kotak PSU Bank ETF	2,865.24
7	Kotak Sensex ETF	2,867.61
8	Liquid Benchmark Exchange Traded Scheme (Liquid BeES)	35,031.86
9	Nifty Benchmark Exchange Traded Scheme- Nifty BeES	40,776.19
10	Nifty Junior Benchmark Exchange Traded Scheme (Junior BeES)	8,562.31
11	PSU Bank Benchmark Exchange Traded Scheme (PSU Bank BeES)	785.94
12	Quantum Gold Fund (an ETF)	1,662.49
13	Reliance Banking Exchange Traded Fund-Dividend Option	1,281.59
14	Religare Gold Exchange Traded Fund	1,230.07
15	SBI GOLD EXCHANGE TRADED SCHEME	10,496.27
16	Sensex ICICI Prudential Exchange Traded Fund	96.43
17	Shariah BeES	124.48
18	UTI GOLD Exchange Traded Fund	30,837.22
	Grand Total	**2,39,689.34**

Source: AMFI

It is found that the total AUM of ETFs approximately is Rs.2,39,689 crores. The Gold Benchmark Exchange Traded Scheme (Gold BeES) is having the highest total AUM of Rs.760.93 crores followed by Nifty Benchmark Exchange Traded Scheme- Nifty BeES with a sum of Rs. 407.76 crores. The funds mobilized during the quarter are Rs.19 lakh Crores under Gold ETF, Rs.167 Crores under Other ETFs. The total funds mobilized by the GOLD ETFs are very high i.e Rs.1552.30 crores than compared to other exchange traded funds. The total proportion of ETFs in the total sum of Mutual Fund Sector is very low i.e. 0.32%.

Index Funds in India

An Index Fund is a Mutual Fund scheme that invests in the securities of the target Index in the same proportion or weight age. Since the first Index Fund launched, the Index Funds

market in India has been growing steadily. The table below gives the total AUM of Index funds.

Table – 4: Funds Mobilized By Index Funds As On March 2010

S.No.	Name Of The Fund	Amount (Rs. In Crores)
1	Benchmark S&P CNX 500 Fund - Dividend	17,642.13
2	Benchmark S&P CNX 500 Fund - Growth	2,750.02
3	Birla Sun Life Index Fund-Plan A (Dividend)	1,484.12
4	Birla Sun Life Index Fund-Plan B (Growth)	1,735.78
5	Canara Robeco Nifty Index-Dividend	423.09
6	Canara Robeco Nifty Index-Growth	472.42
7	Franklin India Index Fund - BSE Plan - Dividend Plan	3,045.37
8	Franklin India Index Fund - BSE Plan - Growth Plan	3,273.35
9	Franklin India Index Fund- Nifty Plan - Dividend Plan	4,786.7
10	Franklin India Index Fund- Nifty Plan - Growth Plan	8,223.93
11	Franklin India Index Tax Fund	272.42
12	HDFC Index Fund-Nifty Plan(FV Rs 10.326)	5,221.48
13	HDFC Index FundSensex Plan(FV Rs 32.161)	6,209.68
	HDFC Index Fund-Sensex Plus(FV-Rs32.161)	5,552.83
14	ICICI Prudential Index Fund	9,660.12
15	LICMF Index Fund-Nifty-Dividend	6,705.65
	LICMF Index Fund-Nifty-Growth	1,356.98
16	LICMF Index Fund-Sensex Advantage-Dividend	263.75
	LICMF Index Fund-Sensex Advantage-Growth	252.47
17	LICMF Index Fund-Sensex-Dividend	1,050.06
	LICMF Index Fund-Sensex-Growth	2,393.12
18	Principal Index Fund-Dividend	570.14
	Principal Index Fund-Growth	1,588.56
19	Quantum Index Fund	120.17
20	SBI Magnum Index Fund - Dividend	710.6
	SBI Magnum Index Fund - Growth	1,561.55
21	Tata Index Fund - Nifty A	981.64
22	Tata Index Fund - Sensex A	639.23
	Tata Index Fund - Sensex B	14.68
23	UTI - Master Index Fund-Growth Option	4,985.8
	UTI - Master Index Fund-Income Option	1,676.74
24	UTI - NIFTY Index Fund-Growth Option	17,906.96
	UTI - NIFTY Index Fund-Income Option	5,495.69
Grand Total		**1,19,027.23**

Source: AMFI

The above table shows that the total AUM of Index Funds are Rs.1.19 lakh crores as on March 2010. The UTI - NIFTY Index Fund-Growth Option is having the highest AUM i.e. Rs.17906.96 crores followed by the other Index Funds. LIC Mutual Fund Company is offering various types of Index Mutual Funds than compared to the others. The proportion of Index Funds in total AUM was very low i.e. 0.16%.

It can be observed that the funds mobilized by ETFs (Rs.2.4 lakh Crores) is much higher than the funds mobilized by Index Funds (Rs.1.19 lakh Crores). The total amount mobilized by these two funds represents 0.32% and 0.16% respectively of the total AUM of Mutual Funds as on 31.03.2010.

Trends in Etfs and Index Funds in India

The recent explosion of the investors interest in ETFs and Index Funds in the developed market can be explained in part by the retail investors increased understanding of its inherent advantages relative to the traditional Mutual Funds and growing popularity of indexation as core investment strategy. The table below shows the trends of ETFs and Index Funds in India.

Table – 5:Trends in Etfs and Index Funds in India

Year	Equity ETF	Gold ETF	Index Funds	Total
1998	-	-	1	1
1999	-	-	1	1
2000	-	-	3	3
2001		-	-	0
2002	1	-	7	8
2003	1	-	5	6
2004	1	-	1	2
2005	-	-	-	-
2006	-	-	-	-
2007	2	4	-	6
2008	2	1	2	5
2009	1	1	-	2
2010	3	2	4	9
Grand Total	**11**	**8**	**24**	**43**

Source: Amfi

The first Index Fund was launched by UTI Master Index Fund on 1st July 1998. More number of Index Funds are issued in the years 2002 and 2003. The Gold ETFs are introduced in the year 2007 and the recession in the capital market and the growth rate in the prices of Gold rates led to the introduction of more number of Gold ETFs in India.

It is found that there are 641 mutual fund schemes operating in India and the proportion of both the Index Funds and ETFs are very small i.e 43 schemes accounting to 6.71 per cent.

Performance Evaluation of Etfs Vis-À-Vis Index Funds

The performance evaluation of ETFs and Index Funds is made with the help of select parameters viz., Return, Risk, Tracking Error and Expenses Ratio.

Returns of Etfs and Index Funds in India

ETFs have been gaining investors interest. ETFs are essentially Index Funds that are listed and traded on exchanges like stocks. They enable the investors to get a broad exposure to the stock markets in different countries and specific sectors, with relative ease, on a real-time basis. This also comes at a lower cost than many other forms of investments. The table below gives details relating to the Returns of the ETFs and Index Funds during the period 2005 to 2009.

Table – 5: Annual Returns Of Exchange Traded Funds As On 31st December

(Figures in %)

S.No	Name of the Fund	2005	2006	2007	2008	2009
1	Banking BeES	30.85	33.62	65.34	-48.63	77.78
2	db x-trackers S&P CNX NIFTY ETF	---	---	76.08	-60.58	85.93
3	Kotak PSU Bank ETF	---	---	---	-39..57	76.23
4	Kotak Sensex ETF	---	---	---	---	82.10
5	Lyxor ETF India (S&P CNX NIFTY)	---	39.83	54.77	-51.79	75.76
6	Nifty Benchmark ETS	37.75	41.49	55.97	-51.28	74.57
7	Nifty Junior BeES	25.22	28.63	75.12	-63.26	**122.70**
8	PSU Bank BeES	---	---	---	-39.58	71.15
9	Quantum Index	---	---	---	---	75.37
10	Reliance Banking ETF	---	---	---	---	82.86
11	Shariah BeES	---	---	----	---	10.94

Source: Value Research

Table – 6: Annual Returns Of Index Funds As On 31st December

(Figures in %)

S.No	Name of the Fund	2005	2006	2007	2008	2009

1	Benchmark S&P CNX 500	---	---	---	---	2.88
2	Birla Sun Life Index	36.05	39.04	55.30	-52.90	75.49
3	Canara Robeco Nifty Index	36.34	36.80	54.79	-51.44	71.64
4	Franklin India Index BSE Sensex	42.02	43.74	46.61	-51.46	**79.83**
	Franklin India Index Tax Fund	36.45	39.58	53.22	-51.44	73.06
5	HDFC Index Nifty	36.52	37.12	49.05	-53.46	70.43
6	ICICI Prudential Index Retail	39.98	41.94	56.46	-50.36	75.57
7	ICICI Prudential SPIcE	42.54	47.69	46.78	-51.12	78.41
8	Franklin India Index NSE Nifty	38.50	40.19	50.00	-52.07	75.32
9	LIC MF Index Nifty	35.20	33.02	47.95	-52.71	65.86
10	LIC MF Index Sensex	37.47	45.00	37.59	-53.80	74.96
11	Magnum Index	33.82	42.05	49.46	-53.27	74.74
12	Principal Index	33.10	36.09	52.23	-52.39	72.33
13	TATA Index Nifty	42.91	43.77	52.21	-52.37	73.83
14	TATA Index Sensex A	37.73	46.45	45.20	-53.06	78.83
15	TATA Index Sensex B	---	---	---	---	37.50
16	UTI Master Index	43.11	47.31	46.65	-52.83	**80.00**
17	UTI Nifty Index	37.16	40.78	53.58	-51.96	73.80
18	UTI Sunder	37.01	41.18	55.83	-50.73	75.45
19	ING Vysya Nifty Plus Fund	30.34	41.42	50.96	-51.27	73.08

Source: Value Research

It is observed that all the ETFs are generating positive returns during the year 2009. The Nifty Junior BeES generated the highest return i.e. 122.70 per cent among the entire ETFs in the year 2009 followed by db x-trackers S&P CNX NIFTY ETF. The returns of all the ETFs are positive in all the years except in 2008.

The above table reveals that all the Index Funds are generating positive return in the year 2009. UTI Master Index Fund and Franklin India Index BSE Sensex are giving the highest annual return i.e. 80 per cent among all the Index Funds. It is found that more number of schemes are generating more than 70 per cent annual returns to their investors. The Benchmark S&P CNX 500 and TATA Index Sensex B are generating lowest returns because they are introduced in the second quarter of the year 2009. It is observed that all the Index Funds generated negative returns in the year 2008 due to the financial crisis during that period.

A comparison of the returns of both, the Index Funds and ETFs reveals that the ETFs, are better performing than the Index Funds. The Average returns of all the ETFs, by and large, is 75 per cent and above whereas the average returns of the Index funds is, by and large, 70 per cent. The Nifty Junior BeES (ETF) is generating the highest return among all the schemes in India.

Risk Analysis of Etfs and Index Funds

The risk is analyzed with the help of Standard Deviation, Beta and R-squared. Standard deviation is a measure of the deviation in the returns of the portfolio. A volatile stock would have a high standard deviation. It tells us how much the return on a fund is deviating from the expected returns based on its historical performance. The below tables give the details relating to Standard deviation, Sharpe ratio, beta, R-squared value and Jenson's Alpha.

Table – 7:Risk Analysis of Exchange Traded Funds

S.No	Name of the Fund	Standard Dev. (%)	Sharpe Ratio (%)	Beta (%)	R-Squared	Alpha (%)
1	Banking BeES	47.33	0.37	1.00	1.00	0.07
2	Nifty Benchmark ETS	35.38	0.25	0.99	1.00	-0.79
3	Nifty Junior BeES	46.03	0.30	0.99	1.00	-0.75
4	Shariah BeES	17.18	0.58	0.99	1.00	-0.25

Source: Value Research

Note: The performance evaluation tools in the table above are calculated taking the monthly returns of the latest year 2009.

Table – 8:Risk Analysis of Index Funds

S.No	Name of the Fund	Standard Dev. (%)	Sharpe Ratio (%)	Beta	R-Squared	Alpha (%)
1	Franklin India Index NSE Nifty	35.53	0.23	1.00	1.00	-1.50
2	Birla Sun Life Index	35.96	0.24	1.01	1.00	-1.17
3	Canara Robeco Nifty Index	35.12	0.22	0.99	1.00	-1.72
4	Franklin India Index BSE Sensex	34.80	0.23	0.99	1.00	1.05
	Franklin India Index Tax Fund	34.87	0.19	0.98	1.00	-0.63
5	HDFC Index Nifty	34.78	0.13	0.98	1.00	-4.78
6	ICICI Prudential Index Retail	35.53	0.28	1.00	1.00	0.17
7	ICICI Prudential SPIcE	33.95	0.23	0.96	1.00	-1.14

8	LIC MF Index Nifty	35.25	0.14	0.99	1.00	-4.49
9	LIC MF Index Sensex	34.94	0.13	0.98	0.98	-4.57
10	Magnum Index	35.37	0.18	0.99	1.00	-3.09
11	Principal Index	35.27	0.20	0.99	1.00	-2.45
12	TATA Index Nifty	35.39	0.21	0.99	1.00	-2.17
13	TATA Index Sensex A	34.99	0.18	0.99	1.00	-2.67
14	UTI Master Index	35.19	0.21	1.00	1.00	-1.90
15	UTI Nifty Index	35.34	0.22	0.99	1.00	-1.97
16	UTI Sunder	34.96	0.27	0.98	1.00	-0.17
17	SBI Magnum Index Fund	35.09	0.12	0.96	1.00	NA
18	ING Vysya Nifty Plus Fund	34.13	0.18	0.96	1.00	-0.88
19	Benchmark S&P CNX 500	15.95	0.98	0.97	1.00	NA

Source: Value Research

Standard Deviation

It is found that among the ETFs, The Banking BeES is having the highest risk i.e. 47.33 per cent and Shariah BeES has the lowest risk i.e. 17.18 per cent. In the case of Index Funds, Birla Sun Life Index has the highest risk i.e., 35.96 per cent and the Benchmark S&P CNX 500 has lowest risk i.e. 15.95 per cent. The standard deviations of the ETFs are higher than the Index Funds. It means that the deviation of expected return is more in ETFs than Index Funds. ETFs are riskier compared to Index Funds as a result, its returns are higher as compared to Index Funds as seen earlier.

Sharpe Ratio

It shows the return to variability. Higher the ratio, better performance, in terms of the return for the risk taken. It is found that all the ETFs and Index Funds are showing a positive Sharpe ratio. When compared to Index Funds, ETFs have the higher average ratio. According to Sharpe ratio, ETFs are giving better performance for extra risk taken by the investors.

Alpha

Alpha measures the excess of returns over market return of the scheme. Here, all the schemes in the ETFs and Index Funds are having a negative alpha excepting the ICICI Prudential Index Retail and Banking BeES. This means that, only these two schemes are generating the excess returns than market return.

R-Squared Value

All the ETFs and Index funds have the R-squared values as 1.00. It means that, they have exact correlation with the underlying Index and are moving in the same direction as that of the market returns.

Beta Value

Beta measures the systematic risk and explains the nature of the volatility of the security return with that of the market return. If beta values are less than one, it means that Funds risk is less than the market risk; if it is one, it means the Funds risk is same as that of the market risk and if the beta is more than one, the risk of the Funds is greater than that of the market. All the Funds, by and large, have the beta values on an average approximately equal to 0.98, implying lower volatility in the returns of the ETFs and Index Funds than the underlying Index volatility.

Tracking Error of Etfs ond Index Funds

Tracking error is a measurement of how much the return on a portfolio deviates from the return on its benchmark index. It is a very important metric for index trackers.
Tracking error is the standard deviation of the differences between the return on the portfolio and the return on the benchmark; the standard deviation of the excess returns:
$\sigma^2 = 1/(n - 1)\ \Sigma(x_i - y_i)^2$
Where σ is the tracking error
n is the number of periods over which it is measured
x is the percentage return on the portfolio in period *i*
y is the percentage return on the benchmark
The below tables shows the tracking error of the various selected schemes

Table – 9:Tracking Error of Etfs As On 31st December 2009

S.No	Name of the Fund	%
1.	Nifty Benchmark ETF	0.09
2.	Banking BeES	0.19
3.	Nifty Junior BeES	0.12
4.	PSU Bank BeES	0.68

Source: Fact Sheets of Select Mutual Funds

Table – 10:Tracking Error Of Index Funds As On 31st December 2009

S.No	Name of the Fund	%

1.	SBI Magnum Index Fund	1.09
2.	UTI Sunder	1.15
3.	HDFC Index Fund	2.41
4.	HDFC Index Fund Nifty	2.69
5.	Franklin India Index NSE Nifty	0.23
6.	Franklin India Index BSE Sensex	0.27
7.	Benchmark S&P CNX 500	1.72
8.	ICICI Prudential Index Retail	1.89
9.	UTI Nifty Index	0.53
10.	UTI Master Index	0.53

Source: Fact Sheets of Select Mutual Funds

It is found that the tracking error is very high in HDFC Index Fund Nifty i.e. 2.69 and it is very low in Nifty Benchmark ETF i.e. 0.09 only. It shows that the tracking error is very high in Index Funds compared to ETFs.

Expenses Ratio of Etfs and Index Funds In India

An expense ratio tells as to how much a Fund costs. The amount is skimmed from the investors account and goes towards paying a Fund's total annual expenses. It is expressed as a percentage of a Fund's Net Assets. If an investor invests in an ETF with an expenses ratio of 0.10 per cent and has invested Rs.3000 in that Funds, the investor has to pay Rs.3 a year in expenses. The tables below give the details of expenses ratio of the select schemes of ETFs and Index Funds during the period 2005-2009.

Table – 11: Expenses Ratio of Etfs

S.No.	Name of the Fund	2005	2006	2007	2008	2009
1	Banking BeES	0.45	0.45	0.48	0.50	0.50
2	Kotak PSU Bank ETF	---	---	---	0.65	0.65
3	Kotak Sensex ETF	---	---	---	---	0.50
4	Nifty Benchmark ETS	0.80	0.56	0.33	0.50	0.50
5	Nifty Junior BeES	1.00	1.00	1.00	1.00	1.00
6	PSU Bank BeES	---	---	---	0.75	0.75
7	Reliance Banking ETF	---	---	---	---	0.35
8	Lyxor ETF India (S&P CNX NIFTY)	---	---	---	---	0.85
9	Shariah BeES	---	---	---	---	0.73

Source: Value Research

Table – 12:Expenses Ratio of Index Funds

S.No.	Name of the Fund	2005	2006	2007	2008	2009
1	Franklin India Index NSE Nifty	1.00	1.00	1.00	1.00	1.00

2	Benchmark S&P CNX 500	---	---	---	1.50	1.50
3	Birla Sun Life Index	2.89	1.07	1.50	1.51	1.50
4	Canara Robeco Nifty Index	1.00	0.50	0.50	0.50	0.98
5	Franklin India Index BSE Sensex	0.99	1.00	1.00	1.00	0.96
6	HDFC Index Nifty	1.50	1.50	1.50	1.50	1.02
7	ICICI Prudential Index Retail	1.25	1.25	1.25	1.25	1.25
8	ICICI Prudential SPIcE	0.80	0.80	0.80	0.80	0.80
9	LIC MF Index Nifty	1.10	2.50	2.50	1.50	1.50
10	LIC MF Index Sensex	1.31	2.50	2.50	1.50	1.05
11	Magnum Index	1.25	1.91	2.09	1.50	1.50
12	Principal Index	1.60	0.58	0.75	0.75	1.50
13	TATA Index Nifty	1.16	---	1.44	1.50	1.50
14	TATA Index Sensex A	1.26	---	---	1.50	1.50
15	UTI Master Index	0.75	0.75	0.75	0.75	0.75
16	UTI Nifty Index	0.75	0.62	0.75	1.21	1.50
17	UTI Sunder	0.50	0.50	0.50	0.50	0.50
18	SBI Magnum Index Fund	---	---	---	---	1.47
19	ING Vysya Nifty Plus Fund	2.00	2.17	2.5	2.5	2.5
20	IDBI Nifty Index Fund	---	---	---	---	1.50
21	Quantum Index	---	---	---	---	0.75

Source: Value Research

It is found that the Nifty Junior BeES has the highest Expenses ratio i.e.1.00 per cent and Reliance Banking ETF has the lowest ratio i.e. 0.35 per cent. The average Expenses Ratio of ETFs ranges between 0.35 per cent to 0.75 per cent.

The expenses ratio of Index Funds is stable and decreasing over the years. The UTI Sunder Index Fund has the lowest Expenses ratio i.e. 0.50 per cent and the ING Vysya Nifty Plus Fund has the highest expenses ratio i.e. 2.5 per cent. The average expenses ratio of all the schemes ranges between 0.50 per cent and 2.50 per cent.
The ETFs have the lowest expenses ratio as compared to the Index funds.

MAJOR FINDINGS

- ETFs have given better opportunity for the small investors in terms of diversified portfolio with a small amount of money. Benchmark AMC issued more number of ETFs than other AMCs.
- ETFs investment has given better performance over Index Funds and other traditional Mutual Funds.
- Expense ratios of ETFs are very less compared with the Index Funds. Therefore, investing in ETFs is less costly. Reliance Bank ETF has achieved 0.35 per cent of expense ratio. More than 1 per cent of the expenses can be saved in ETFs compared to Index Funds.
- Problem of tracking error can be reduced by the ETFs and tracking error of the ETFs is very less than Index Funds. Here, though the underlying asset is same, tracking error is less in ETFs, thus, automatically ETFs give better returns than Index Funds.

- Intra day Trading is the biggest opportunity for short term investors because more than 70 per cent of trading in NSE will end with intra day. At present Rs 400-450 of one Unit of ETF gives the diversification of Nifty 50 companies. Thus, these are affordable to the small investors.
- ETFs are better than Index Funds in terms of Risk and Volatility.
- According to Sharpe ratio, ETFs give better performance for extra risk taken by the Investors.
- All the ETFs and Index Funds have the R-squared values as 1.00. It means that, they have exact correlation with the underlying Index and are moving in the same direction as that of the market returns.

Conclusion

In the last fifteen years, since 1993, the popularity of ETFs has increased manifold. This has attracted a lot of attention from both the investors as well as the market participants, resulting in the introduction of a variety of ETFs and continuous innovations in the ETF industry. As the variety of financial indices is increasing, there has been a corresponding increase in the spectrum of ETF varieties available in the market.

ETFs have technical advantages over Mutual Funds and have shown an ability to capture investors' money. They are low cost, having less tracking error and more liquid. They are a good investment suitable to individual investors and professionals.

However, now, the Indian economic conditions are gradually stabilizing and equity markets are performing well because of political stability and positive signs about economy. Investors always look for better returns and it is the equity markets which can give better returns and therefore, there is a huge potentiality for the introduction of more equity ETF products in India. However, the ETFs can become a best investment alternative, provided, awareness is created among the investors.

References

1. Jonne M. Hill and Barbara Mueller, “The Appeal of ETFs” (2001), Benchmark Mutual Fund
2. Philippe Jorion, “Portfolio Optimization with Tracking-Error Constraints”, Financial Analysts Journal, September/October 2003, pp-70-82.
3. Ammann, M., Kessler, S., Tobler, J., Analyzing Active Investment Strategies Using Tracking error variance Decomposition, Journal of Portfolio management, 33(1), 2006, pp 56-67.
4. Benchmark Funds research department, “Myth of Eternal Alpha” (2008), by Benchmark Mutual Fund
5. B Phaniswara Raju and K Mallikarjuna Rao, “Market Timing Ability of selected Mutual Funds in India: A Comparative study” (2009), ICFAI Reader, May 2009.

WEBSITES:
www.valurresearch.com
www.nseindia.com
www.bseindia.com

www.benchmarkfunds.com
www.amfiindia.com
www.mutualfundsindia.com
www.etftrends.com
www.indexfunds.com
www.investiopedia.com
www.sharekhan.com