



## RETURN-RISK ANALYSIS OF – BANK ETFs

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### ABSTRACT

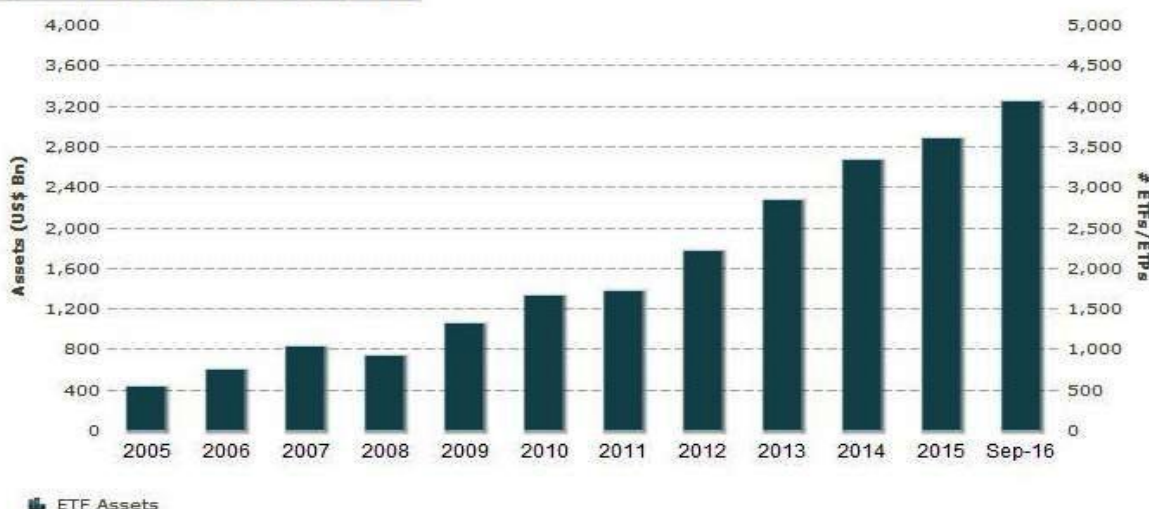
*This paper investigates the performance of Bank ETFs by comparing to its benchmark i.e, CNX PSU Bank Index. The ETFs, like index funds, typically reflect the performance of the benchmark index. Hence, looking at the performance of benchmark indices of India, retail investor can also expect similar kind of returns from the ETFs, instead of struggling to select the best out of available funds.. It further examines its risk-return with the help of mean, standard deviation, beta, R-squared statistics, Sharpe and Treynor ratio. It has been observed that the entire selected bank ETFs is cost effective and moderately aggressive in nature.*

### INTRODUCTION

Investment is the commitment of funds in an asset or financial instruments with the aim of generating future returns in the form of interest, dividend or appreciation in the value of the instrument. Investment is involved in many areas of the economy, such as, business management and finance no matter from households, firms, or Governments. An investor has numerous investment options to choose from, depending on his risk profile and expectation of returns. Different investment options represent a different risk-reward trade off. Low risk investments are those that offer assured, but lower returns, while high risk investments provide the potential to earn greater returns. Hence, an investor's risk tolerance plays a key role in choosing the most suitable investment. Various investment options available are Bank Deposits, Commodities like Gold, Silver, Post Office Savings Schemes, Public Provident Fund, Company Fixed Deposits and Stock Market options like Bonds and Debentures, Mutual Funds, Equity Shares etc., Of the various types of investment options in the Stock Market, Exchange Traded Funds (ETFs) happens to be one of the best options to be included in the portfolio for diversification of risk. The idea of ETF was first conceptualized by Benchmark Asset Management Company Private Ltd. in India in 2001. In this context, the study is undertaken to assess the importance of Gold ETFs and it's performance in India ,known as Nifty BeES. Due to the distinctive structure of ETFs, all types of investors whether retail or institutional, long-term or short-term can use it to their advantage. ETFs are a good quality investment for individual investors as well as for investment professionals.

**Table: 1 Global ETF Growth**

#### GLOBAL ETF and ETP GROWTH



**Review of Literature**

Most of the empirical studies on performance of ETFs focus on US-listed ETFs that track domestic or international equity market indices and conduct comparisons with conventional index mutual funds. Particularly in early 2000s, academic reviews focused on Standard and Poor's Depository Receipts (SPDR). One of the initial studies on these funds was made by Elton et al. (2002). It is found that SPDR performs 28.4 basis points below its benchmark index S&P500 and 18 basis points below low-cost index funds in a similar category. The main reasons are (i) management fees and (ii) income lost due to the policy of holding dividends received on the underlying shares in cash.

Gallagher and Segara (2004) exhibited the performance and trading characteristics of exchange traded funds (ETFs) in Australia. The objective of the study is to investigate the ability of index oriented (classical) ETFs to track underlying equity benchmarks on the Australian Stock Exchange. The study found out that index-oriented ETFs closely track their respective benchmarks.

Poterba and Shoven (2002) examine the perception of ETFs as tax-efficient alternatives by comparing the pre- and post-tax returns of the largest ETF, the SPDR, with the returns of the largest equity index fund, the Vanguard Index 500 Fund. The results suggest that between 1994 and 2000, the pre- and post-tax returns of the two funds were very similar.

Chang and Krueger (2012) investigated the performance of Exchange-Traded Funds and Closed-End Funds over the 2002 to 2011 period. They studied investment results such as returns, risks and risk-adjusted returns and found that though ETFs have significantly lower expenses, their performance is statistically worse than those of close-ended funds.

Kostovetsky (2003) compares two methods of passive investment using a theoretical model based on investor trading preferences, tax implications, and other variables that weigh the advantages and disadvantages of ETFs relative to index funds. Kostovetsky shows that the key areas of difference are management fees, taxation efficiency, and qualitative differences.

Recently, Hilliard's (2014) examination of mispricing associated with ETFs using the Ornstein-Uhlenbeck process augmented with jumps uncovered no mispricing in the case of local US ETFs and higher long-term mean premium and lower speed of adjustments in the case international equity ETFs and bond ETFs. In light of the fact that the public holding of domestic ETFs is much greater than that of international ETFs in the US

Qadan and Yagil (2012) investigated the price dynamics and tracking ability of 42 local US ETFs and the impact of 2008-09 financial crisis on the tracking ability of the local US ETFs using an error correction model. They find that except for the ETFs from the real estate and banking and finance sectors, the share price of all other ETFs and their underlying index prices are co integrated, indicating the absence of arbitrage opportunities and the prevalence of a long-run equilibrium. In addition, the tracking ability of ETFs were found to be positively related to the trading volume and negatively related to the daily volatility of ETF.

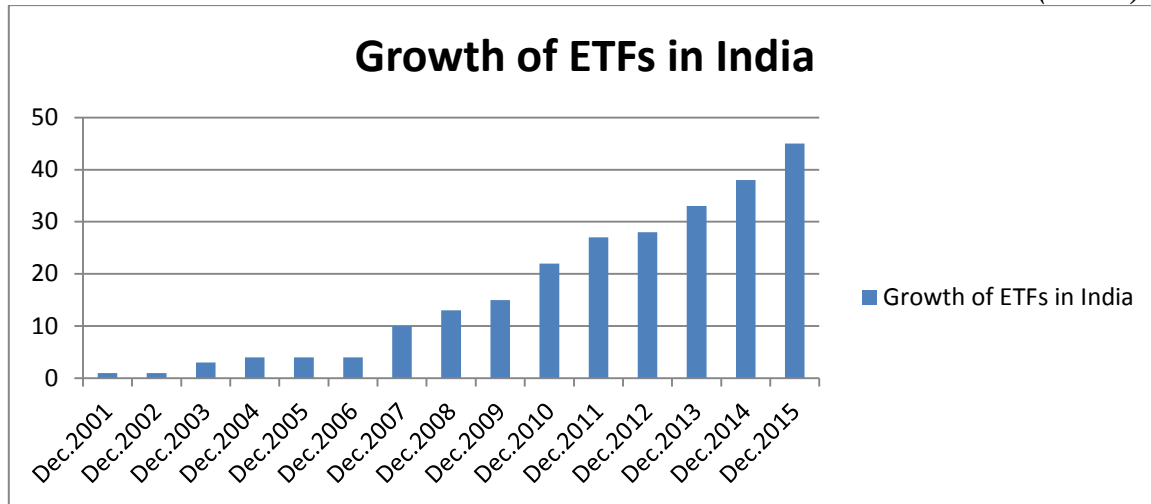
Prashanta Athma and K. Raj Kumar (2011) covered the trends and progress of ETFs and Index Funds in India and evaluate the performance of ETFs vis-a-vis Index Funds in India. The statistical tools like Standard Deviation, Beta, Alpha, R-squared and Sharpe Ratio are used for data analysis. It is concluded that ETFs have given better opportunity for the small investors compared to Index Funds.

**Growth of ETFs in India**

Table-1 depicts the growth of Assets under management (AUM) of ETFs till 2016 but the market crash of 2008 put a dent in the growth. Again in 2011 it gained momentum and grow at a rapid pace in the next years, and a sharp increase in 2016 almost double of previous year.

**Table: 2- Growths of ETFs**

Year	No of ETFs	AUM (Rs.Crore)	Increase or Decrease	% of Increase or Decrease
Dec.2001	1	3.61	-	-
Dec.2002	1	7.23	3.62	200.2770083
Dec.2003	3	205.95	198.72	2848.547718
Dec.2004	4	498.54	292.59	242.0684632
Dec.2005	4	2855.82	2357.28	572.8366831
Dec.2006	4	7811.11	4955.29	273.5154877
Dec.2007	10	7141.74	-669.37	-91.43053932
Dec.2008	13	3119.11	-4022.63	-43.67437067
Dec.2009	15	2461.72	-657.39	-78.92379557
Dec.2010	22	4959.16	2497.44	201.451018
Dec.2011	27	10668	5708.84	215.1170763
Dec.2012	28	13668	3000	128.1214848
Dec.2013	33	10273	-3395	-75.16095991
Dec.2014	38	13260	2987	129.0762192
Dec.2015	45	17661	4401	133.1900452
Dec.2016	45	34353	16692	194.5133345



### Need of the Study

Exchange Traded Funds are hybrid financial instruments and are in its growth stages in India and very little literature on this instrument is available. The absence of empirical research on Indian ETFs, this study contributes to the literature by providing analysis of the performance and benchmark tracking capabilities of a relatively new financial product available to Indian investors. Much research has provided attention to the performance of mutual fund products in India but not on ETFs, so this study is to comprehensively evaluate the performance of ETFs with respect to risk-return perspective. In the light of these observations and analysis of review of literature, the researcher has decided to evaluate the performance of entire Bank ETFs listed in NSE India.

### Objectives of the Study

The following are objectives for present study:-

- 1) To compute and evaluate the performance (i.e. risk and return) of Bank ETFs with its benchmark i.e. CNX PSU BANK INDEX.
- 2) To analyse the tracking ability of Bank ETFs with their respective benchmark Indexes.
- 3) To analyse the portfolio attributes of Bank ETFs.
- 4) To find out the best Bank exchange traded fund on the basis of risk-return perspective

### Research Methodology

The performance of Bank ETFs is analysed in terms of whether it has been able to achieve its investment objectives of tracking or replicating the return of its underlying benchmark index. The study is based on secondary data. The secondary data source include Fact Sheet of ETFs Research publications, SEBI Manuals AMFI reports and data collected from websites of National Stock Exchange and BSE, Bloomberg, Seeking Alpha and the respective fund houses. The daily closing prices of the funds were considered from 1<sup>st</sup> April 2012 to March 31, 2017.

**Table: 3 The Summarized Details of Various ETFs Listed in NSE on 31st March 2017**

SL.No	Name	Issuer Name	Symbol	Underlying Indexes	Launch Date	AUM
1	GS Nifty BeES	Goldman Sachs Asset Management	NIFTYBEES	Nifty 50 Index	28-Dec-01	912.39
2	ICICI SENSEX Prudential Exchange Traded Fund	ICICI Prudential AMC	ISENSEX	S&P BSE Sensex	10-Jan-03	1662.79
3	GS Junior BeES	Goldman Sachs Asset Management	JUNIORBEES	Nifty Next 50	21-Feb-03	124.56

4	GS Bank BeES	Goldman Sachs Asset Management	BANKBEES	Nifty Bank	27-May-04	1472.46
5	GS PSU Bank BeES	Goldman Sachs Asset Management	PSUBNKBEES	Nifty PSU BANK	25-Oct-07	73.64
6	Kotak PSU Bank ETF	Kotak AMC	KOTAKPSUBK	Nifty PSU BANK	08-Nov-07	4541.87
7	R*Shares Banking ETF	Reliance AMC	RELBANK	Nifty Bank	24-Jun-08	147804.44
8	Quantum Index Fund - Growth	Quantum AMC	QNIFTY	Nifty 50 Index	10-Jul-08	406.99
9	GS Shariah BeES	Goldman Sachs Asset Management	SHARIABEES	Nifty50 Shariah Index	18-Mar-09	1.33
10	Kotak Nifty ETF	Kotak AMC	KOTAKNIFTY	Nifty 50 Index	02-Feb-10	60804.17
11	MOST Shares M50	Motilal Oswal AMC	M50	Nifty 50 Index	28-Jul-10	2042.58
12	GS Infra BeES	Goldman Sachs Asset Management	INFRABEES	Nifty Infrastructure	29-Sep-10	16.68
13	MOST Shares M100	Motilal Oswal AMC	M100	Nifty Midcap 100	31-Jan-11	2581.95
14	Religare Invesco Nifty ETF	Religare AMC	RELGRNIFTY	Nifty 50 Index	13-Jun-11	1.62
15	Birla Sun Life Nifty ETF	Birla Sun Life AMC	BSLNIFTY	Nifty 50 Index	21-Jul-11	18196.03
16	ICICI Prudential Nifty ETF	ICICI Prudential AMC	INIFTY	Nifty 50 Index	20-Mar-13	91497.52
17	R*Shares CNX 100 ETF	Reliance AMC	RELCNX100	Nifty 100	22-Mar-13	722.42
18	ICICI Prudential CNX 100 ETF	ICICI Prudential AMC	ICNX100	Nifty 100	20-Aug-13	3108.81
19	R*Shares Nifty ETF	Reliance AMC	RELNIFTY	Nifty 50 Index	22-Nov-13	93555.58
20	CPSE ETF	Goldman Sachs Asset Management	CPSEETF	Nifty CPSE Index	28-Mar-14	569579.58
21	R*Shares Consumption ETF	Reliance AMC	RELCONS	Nifty India Consumption	10-Apr-14	1611.05
22	R*Shares Dividend Opportunities ETF	Reliance AMC	RELDIVOPP	Nifty Dividend Opportunities 50	15-Apr-14	1514.64
23	Kotak Banking ETF	Kotak AMC	KOTAKBKETF	Nifty Bank	04-Dec-14	278310.75
24	SBI ETF Banking	SBI AMC	SETFBANK	Nifty Bank	20-Mar-15	45449.94
25	SBI ETF Nifty Junior	SBI AMC	SETFNIFJR	Nifty Next 50	20-Mar-15	2.77

26		Edelweiss Exchange Traded Scheme - Nifty	Edelweiss AMC	NIFTYEES	Nifty 50 Index	08-May-15	548.35
27		R*Shares NV20 ETF	Reliance AMC	RELVN20	Nifty50 Value 20 Index	18-Jun-15	1466.21
28		SBI ETF Nifty	SBI AMC	SETFNIFTY	Nifty 50 Index	23-Jul-15	1440302.25
29		UTI Nifty ETF	UTI AMC	UTINIFTETF	Nifty 50 Index	03-Sep-15	172677.07
30		UTI Sensex ETF	UTI AMC	UTISENSETF	S&P BSE Sensex	03-Sep-15	46804.54
31	<b>GOLD ETFs</b>	Goldman Sachs Asset Management	Goldman Sachs Gold Exchange Traded Scheme	GOLDBEES	Gold	Mar-07	2720.73
32		UTI Mutual Fund	UTI GOLD Exchange Traded Fund	GOLDSHARE	Gold	Mar-07	40491.55
33		Kotak Mutual Fund	Kotak Gold Exchange Traded Fund	KOTAKGOLD	Gold	Jul-07	46130.17
34		Reliance Mutual Fund	Reliance Gold Exchange Traded Fund	RELGOLD	Gold	Nov-07	279592.95
35		Quantum Mutual Fund	Quantum IndexFund (an ETF)	QGOLDHALF	Gold	Feb-08	5920.07
36		SBI Mutual Fund	SBI Gold Exchange Traded Scheme	SBIGETS	Gold	Apr-09	84151.30
37		Religare Mutual Fund	Religare Gold Exchange Traded Fund	RELIGAREGO	Gold	Mar-10	41.66
38		HDFC Mutual Fund	HDFC Gold Exchange Traded Fund	HDFCFMGETF	Gold	Aug-10	51615.73
39		ICICI Prudential Mutual Fund	ICICI Prudential Gold Exchange Traded Fund	IPGETF	Gold	Aug-10	11120.05
40		Axis Mutual Fund	Axis Gold ETF	AXISGOLD	Gold	Nov-10	19594.95
41		Birla Sun Life Mutual Fund	Birla Sun Life Gold ETF	BSLGOLDETF	Gold	May-11	7320.90
42		IDBI AMC	IDBI Gold ETF	IDBIGOLD	Gold	Nov-11	7979.08
43		Canara Robeco MF	Canara Robeco Gold ETF	CANGOLD	Gold	Mar-12	6471.50

44	GLOBAL INDEX ETFs	Goldman Sachs Asset Management	GS Hang Seng BeES	HNGSNGBEES	HangSeng	09-Mar-10	5.61
45		Motilal Oswal AMC	MOST Shares NASDAQ 100	N100	Nasdaq 100	29-Mar-11	6842.81
46	DEBT ETFs	LIC Nomura AMC	LIC Nomura MF G-Sec Long Term ETF - Reg - Growth	LICNMFET	Nifty 8-13 yr G-Sec Index	26-Dec-14	7780.68
47		Goldman Sachs Asset Management	GS Liquid Exchange Traded Scheme	LIQUIDBEES	Government Securities	Jul-03	1397.19

### Sample size

In the present study universe of the study consists of 30 Index exchange traded funds listed in NSE. With regards to the performance evaluation of ETFs with their benchmark indices the present study takes the sample of 9 Equity index ETFs, which were listed in NSE before 1st April 2009. Out of 9, 8 ETFs track the CNX Nifty and 1 tracks BSE Sensex.

**Table : 4 Sample Size**

Sl.No	Name	Issuer Name	Symbol	Underlying Indeses	Launch Date	AUM
1	GS Bank BeES	Goldman Sachs Asset Management	BANKBEES	Nifty Bank	27-May-04	1472.46
2	GS PSU Bank BeES	Goldman Sachs Asset Management	PSUBNKBEES	Nifty PSU BANK	25-Oct-07	73.64
3	Kotak PSU Bank ETF	Kotak AMC	KOTAKPSUBK	Nifty PSU BANK	08-Nov-07	4541.87
4	R*Shares Banking ETF	Reliance AMC	RELBANK	Nifty Bank	24-Jun-08	147804.44
5	Kotak Banking ETF	Kotak AMC	KOTAKBKE TF	Nifty Bank	04-Dec-14	278310.75
6	SBI ETF Banking	SBI AMC	SETFBANK	Nifty Bank	20-Mar-15	45449.94

## RESULTS AND DISCUSSION

### 1. ANALYSIS OF PERFORMANCE OF BANK ETFs

The performance of the Bank ETFs is depicted in Table 4. It shows 1 month, 1 year, 2 year, 3, 4 and 5 years and since inception return of the Bank ETFs listed in NSE. Analysis of table 4 reveals that last one year return of the selected bank ETFs ranges between 35.62% percent and 52.39% percent. Bank BeES has registered a highest growth of 52.39% percent, it is followed by GS PSU Bank ETF, and the lowest growth of 35.62 has been shown by GS Bank BeES and Reliance Banking ETFs. GS PSU Bank BeES has shown highest positive return of 24.53 percent, and the lowest return of 4.21 percent has been depicted by Kotak PSU Bank ETF. The comparison depicts that 4 out of 6 bank ETFs (66 percent) have outperformed the industry average of 16.86 percent. However, 2 bank ETFs has been able to beat CNX PSU Bank Index return of 20.11 percent.

**Table : 4 Returns of selected Exchange Traded Fund as on 31st March 2017**

S. No.	Funds	1 Month	1 Year	2 Years	3 Years	4 Years	5 Year	Return since inception
1	GS Bank BeES	18.00%	35.62%	19.08%	20.55%	17.62%	16.99%	19.03%
2	GS PSU Bank BeES	20.55%	52.39%	3.18%	8.05%	16.50%	13.62%	24.53%
3	Kotak PSU Bank ETF	17.62%	36.00%	11.20%	NA	NA	NA	4.21%
4	R*Shares Banking ETF	4.17%	35.62%	10.87%	20.79%	NA	17.67%	19.35%
5	Kotak Banking ETF	11.25%	35.98%	11.17%	NA	NA	NA	23.47%
6	SBI ETF Banking	5.42%	40.48%	11.12%	NA	NA	NA	10.61%
	<b>NIFTY PSU Bank Index</b>	<b>8.8%</b>	<b>42.57%</b>	<b>16.70%</b>	<b>17.70%</b>	<b>12.41%</b>	<b>18.46%</b>	<b>20.11%</b>

## 2. ANALYSIS OF PORTFOLIO ATTRIBUTES

### 1. ANALYSIS OF RISK

The core of the fund analysis activity lays the twin pursuits of judging returns and risk. Tables 5 highlights the risk and return characteristics i.e. the Beta, R Squared statistic, Annualised Return, Standard deviation, Sharpe ratio, Treynor ratio and Tracking Error of the selected bank ETFs.

**Table 5 : Risk Return Profile of Nifty ETF**

S. No.	Fund	$\beta$	R-Square	Annualized Return	Annualized Std.	Sharpe Ratio	Treynor Ratio	Tracking Error
1	GS Bank BeES	1	0.78	19.03%	1.69%	0.85	0.087	0.18
2	GS PSU Bank BeES	1	0.84	24.53%	2.71%	0.22	0.145	0.16
3	Kotak PSU Bank ETF	1.514	0.6004	4.21%	1.86%	0.1024	0.1259	0.23
4	R*Shares Banking ETF	1.1729	0.8647	19.35%	1.00%	0.1077	0.092	0.14
5	Kotak Banking ETF	1.17	0.8647	23.47%	1.00%	0.1087	0.0928	0.18
6	SBI ETF Banking	1.178	0.864	10.61%	1.00%	0.84	0.1006	0.17

(a) **Beta:** The Systematic risk is measured in terms of beta which indicates the sensitivity of a scheme return in relation to market index. The beta value of an index itself is taken as one. If a scheme's beta is less than 1, it is considered to be defensive. If a scheme's beta is more than

1, it is considered to be aggressive. Analysis of table 5 points out that the beta value for the selected Bank ETFs ranges between 1.00 and 1.5. Beta values for the entire bank ETFs are 1 or more than one which indicates that all the selected ETFs are aggressive in nature. The value of beta is highest for Kotak PSU Bank ETFs (1.514), it is followed by SBI Banking ETF (1.178), and it is lowest for GS PSU Bank BeES and GS Bank BeES (1.). On the basis of beta value, it is found that that Kotak PSU Bank ETFs is the most aggressive ETF amongst the entire banking exchange traded funds.

**(b) R-Squared Value:** Beta and R-squared should be used together when examining a fund's risk profile. They are as inseparable as risk and return. The R-squared value shows how reliable the beta number is. It varies between zero and one. An R-squared value of one indicates perfect correlation with the index. For ETFs, an R-squared value greater than 0.80 is generally accepted to mean that the underlying beta value is reliable. Analysis of results shows that the R Squared values of the selected exchange traded funds falls between 0.94 and 0.98. It is found that R Squared values of all the selected bank ETFs is more than 0.80 except two ETFs ie GS Bank BeES and Kotak PSU Bank ETF. Hence, it indicates that beta values are reliable, except those to ETFs and the other Bank ETF family has closely performed in relation to the index.

**(c) Annualised Return:** An annualized total return is the geometric average amount of money earned by an investment each year over a given time period. It is calculated as a geometric average to show what an investor would earn over a period of time if the annual return was compounded. An annualized total return provides only a snapshot of an investment's performance and does not give investors any indication of its volatility. In our study 5 out of ETF has return more than 10 percent annualised return. To get a clear understanding we need to compare with the standard deviation higher return with low standard deviation is considered as best fund. Kotak banking ETF meet this standard ie 23.47 percent return with 1 as standard deviation.

**(d) Standard Deviation:** It measures the total risk from the average return. It depicts the 'quality rating' of an average. It is observed that the standard deviation of the bank ETFs ranges between 1 and 2.71. Analysis reveals that total risk is highest for the GS PSU Bank BeES (2.71), followed by Kotak PSU Bank ETF (1.86), hence, on the basis of standard deviation of the selected schemes, it is observed that GS PSU Bank BeES are most volatile among the selected ETF schemes.

**(e) Sharpe Ratio:** Sharpe ratio and Treynor ratio are useful to compare the performance of number of funds. Sharpe ratio is a useful measure of risk adjusted return. It reflects the returns generated per unit of total risk. Higher the Sharpe ratio, the better is the performance of the fund under analysis. Analysis of Sharpe ratio in table 5 depicts that its value for the selected Bank ETF schemes varies between .10 and .80. All the selected schemes have shown positive return per unit of risk. It indicates that the risk premium generated by the selected funds for the assumption of total risk by the investors is sufficient and good. GS Bank BeES have shown a high return of .84 per unit of total risk followed by SBI ETF Banking ie .84. Low return to Kotak PSU Banking ETF.

**(f) Treynor Ratio:** The Treynor Ratio helps analyse returns in relation to the market risk of the fund. The Ratio, also known as the reward-to-volatility ratio, provides a measure of performance adjusted for market risk. Higher the Treynor Ratio, the better is the performance of fund under analysis. It has been observed that Treynor ratio of the selected bank ETFs varies between .08 and .145. The entire bank ETFs have shown a positive performance after adjusting for market risk. This ratio is lowest i.e. .087 for GS Bank BeES, and highest for GS PSU Bank BeES i.e. .145.

## CONCLUSION AND SUGGESTIONS

On the basis of analysis it is found that the entire banking ETFs are aggressive in nature. The performance of the GS PSU Bank BeES is best among the entire selected bank ETFs. It's since inception compounded annualized return is 24.53 percent, as compared to other bank ETFs. Further, this fund has shown resilience in the time of declining market and its mean returns are good amongst the selected funds. It is a good fund for aggressive investors as its beta is highest amid all banking ETFs. An investor can invest in exchange traded funds for short term as well as long term. However, past experiences have shown that these funds outperform average industry performance as well benchmark indices in the long run. Hence it is suggested that an investor should do investment with long term horizon. Finally, all investments, including exchange-traded funds (ETFs), involve significant risk. Before buying ETFs, consult an investment advisor to construct a well-balanced, diversified portfolio matched to one's personal goals and risk profile.

## References

1. Athma Prashanta, Raj Kumar K. (2011), "ETF vis –a vis-Index Funds: An Evaluation" APJRB Volume 2, Issue 1. January.
2. Bhalla, V. K. (2004), "Investment Management", S. Chand and Company Ltd., Ram Nagar, New Delhi-110005, 13<sup>th</sup> edition, pp. 565-830.
3. Elton, Gruber (2002), "Modern portfolio theory and investment analysis", John Wiley & Sons, 5th edition, pp. 630-670.
4. Gallagher, R. David and Reuben Segara. (2005), "The Performance and Trading Characteristics of Exchange-Traded Funds" working paper, The University of New South Wales.
5. Harper, J. T., J. Madura and O. Schnusenberg. (2006), "Performance comparison between exchange traded funds and closed end country funds", *Journal of International Financial Markets, Institutions and Money*, 16(2), pp. 104-122
6. Khurana, Ashok. (2008), "Bank ETF's: A Return-Risk Perspective" Available at SSRN: <http://ssrn.com/abstract=1718363>
7. Kostovetsky, L. (2003), *Index Mutual Fund and Exchange -Traded Funds*, *Journal of Portfolio Management*, Vol. 29 (4): pp. 80-92.
8. Laurent. (2006), "Exchange Traded Funds: History, Trading and Research" Available at <http://hal.archives-ouvertes.fr/docs/00/16/22/23/PDF/ETF-survey.pdf>.
9. Poterba, M. James and John B. Shoven. (2002), "Exchange- Traded Funds: A new investment option for taxable investors," *American Economic Review*, Vol. 92. pp. 422-427.



10. Investopedia.com, *Introduction to Exchange Traded Funds* by Investopedia Staff
11. Kaushik Sanjay and Singh Sukhvir (2008) , “Risk Diversification and Portfolio Size: An Empirical Analysis”, *Management Vistas*, July-December, pp 9-15
12. Kevin (2007), ‘*Portfolio Management*’, Prentice Hall of India, New Delhi, pp. 133-151.
13. Malik Sarat (2006), “Introduction of GETFs in India,” *SEBI Bulletin* May 2006, Ref: SEBI/IMD/CIR No.2/65348/06 dated April 21, pp 46
14. Pandian Punithavathy (2006), “*Security Analysis and Portfolio Management*”, Vikas Publishing House Pvt. Ltd., New Delhi, pp. 411-430.
15. Raghunathan V. and Rajib Prabina (2007), “*Stock Exchanges, Investment and Derivatives*”, 3rd edition, pp.144-146.
16. Grinold Richard D. and Kahn Ronald N.(2003), “ *Active Portfolio Management*,” Tata Mc Graw Hill Publishing Company Ltd., New Delhi, pp 41-147,377-541.
17. Hirschey Mark and Nofsinger John (2001), “ *Investments- Analysis and Behavior* ,” Tata Mc Graw Hill Publishing Company Ltd., New Delhi, Special Indian edition , pp.89-120,472-474.
18. [http://www.investopedia.com/articles/mutualfund/asp & asp=10](http://www.investopedia.com/articles/mutualfund/asp&asp=10) Reasons to make ETFs the Core of your Portfolio.
19. [http://www.investopedia.com/articles/mutualfund/asp & asp=Advantages](http://www.investopedia.com/articles/mutualfund/asp&asp=Advantages) of Exchange Traded Funds
20. [http://www.investopedia.com/articles/mutualfund/asp & asp=Are](http://www.investopedia.com/articles/mutualfund/asp&asp=Are) ETFs Suitable for Small Periodic Investments?