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A Research on Exchange Traded Funds (ETFS) as a Means for Passive Wealth Accumulation in India, Focusing on their Association with the Nifty 50 Index

Ritushree Bhattacharjee

IV Semester M. Com FA, Kristu Jayanti College (Autonomous), Bengaluru – 560 077

ABSTRACT

This study delves into the potential of NIFTY50-linked Exchange-Traded Funds (ETFs) as a vehicle for passive wealth accumulation, particularly focusing on an Indian perspective. With the increasing popularity of passive investing strategies globally, ETFs have emerged as an attractive option for investors seeking diversified exposure to equity markets. The NIFTY50, comprising India's top 50 listed companies, serves as a benchmark index reflecting the performance of the Indian stock market. Through an in-depth analysis of historical data, market trends, and investor behavior, this study evaluates the suitability of NIFTY50-linked ETFs for passive wealth accumulation. In this study the performance is evaluated of selected four Nifty 50 ETFs tracking Nifty 50 Index listed in National Stock Exchange in India during a period of five years starting from 1st January, 2019 to 31st December, 2023.

Key words: Investment Avenue, NIFTY 50 ETF, Nifty, Investment, ETF, Correlation.

INTRODUCTION

An investment firm whose shares are traded intraday at market prices on stock exchanges is known as an Exchange-Traded Fund (ETF). With ETFs, investors can purchase or sell shares based on how a stock or bond has performed overall in its portfolio.It's shares can be purchased or sold through a broker in the same way as shares of any other publicly traded company. ETFs are exactly what their name suggests: exchange-traded baskets of securities that function similarly to individual stocks. Indian investors are rapidly adopting exchange-traded funds (ETFs), which combine the protection of a fund with the flexibility of a stock. ETFs are exchange-traded funds that invest in stocks that make up an index. More and more financial planners advising long-term investors who wish to invest in stocks without taking on excessive risk to use exchange-traded funds (ETFs).

REVIEW OF LITERATURE

MM Ninan ,(2019) examined to identify a suitable investment choice for people who choose to invest in index funds or exchange-traded funds. The analysis was conducted using post hoc analysis, ANOVA, and the t test. It was discovered that there is a difference when comparing the two funds; performance with benchmark risk, however there is no variation in return, systematic risk, or benchmark return performance. ETFs have outperformed index funds in terms of growth, overall risk, and expense.

Imtiaz Mazumder, (2014):The article discusses about Exchange-traded funds (ETFs) along with their creation, redemption, and trading mechanism. The article also covers the net assets and yearly issuances of ETFs, as well as the benefits and drawbacks of investing in ETFs. The ETFs is described into 10 broad categories and 96 subcategories. ETFs seem to be better investment vehicles in terms of taxes, lower management fees and expenses, and portfolio risk management as a passive but diversified investment strategy. However, the choice of how to strategically invest in ETFs depends on the goals of the investor, their attitude toward risk, and the length of their investment horizon as well as other factors.

Steven D. Dolvin,(2014) :The Exchange-traded funds (ETFs)which are actively managed have just recently entered the investment scene, it is crucial to comprehend how they perform in comparison to passive funds. The results of this study indicates that active funds don't offer a pure return advantage and are more erratic than their passive counterparts. As a result, active ETFs are typically not a suitable replacement for the current passively managed funds. Contrary to earlier research, it was discovered that relative risk-based performance measures (such as Treynor and Information ratios) indicate that active funds might be a smart addition to current portfolios due to their benefits in diversification. Additionally, the ETFs funds with the highest average daily trading volume are primarily concentrated in these relative benefits.

Ms Ashwini Shankar Kadam , Dr. P. V. Sathe , Dr. Nilesh Limbore, (2023):This article shows the perceptions of key performance indicators by investors, stock market declines, mutual fund problems, rationales for selecting a particular company, factors to be considered when selecting a mutual fund, and

mutual fund satisfaction are mediocre at best. Secondary data is used as the study as foundation that investigates the people's level of knowledge, their sentiments regarding mutual funds, ETFs, their interests, and how they are satisfied that they have . The research's conclusions will be applied to a more thorough analysis of mutual funds and ETFs investments to do a thorough analysis and choose the best mutual funds available to optimize returns.

STATEMENT OF PROBLEM

ETFs are bought and sold on stock exchanges like individual stocks, Investors can place market orders, limit orders, or stop orders to trade ETF shares. It has become popular investment vehicle for many investors in order to gain certain returns but are subject to market risk. Some ETFs may not perfectly replicate the performance of their underlying index due to factors such as fees, transaction costs, and market liquidity .Thus, this project attempts to analyze all these Risk and return of the ETF indexes of SBI Nifty 50 ETF, Nippon India Nifty Bees ETF, ICICI Prudence Nifty 50 ETF and HDFC Nifty 50 ETF to choose the best investment option for wealth maximization also ensuring minimum risk and all factors involved to provide the awareness for ETF investments.

OBJECTIVES

1) To examine the performance of the Nifty ETFs in relation to the Nifty50 index.

2) To study the potential risk and reward of investing in Nifty ETFs.

HYPOTHESIS

Null hypothesis (**H0**): There is no significant difference in the performance between Nifty ETFs and the Nifty 50 Index.

Alternative hypothesis **(H1)**: There is a significant difference in the performance between Nifty ETFs and the Nifty 50 Index.

Null Hypothesis **(H0)**- The risk- return profile of Nifty ETFs is not significantly different from NIFTY 50

Alternative Hypothesis **(H1)**- The risk- return profile of Nifty ETFs is significantly different from NIFTY 50.

RESEARCH METHODOLOGY

The study is mainly analytical in nature and purely based on secondary data. Four Nifty 50 ETFs are selected from listed Nifty 50 ETFs in NSE National Stock Exchange of India Limited.The tools used for data analysis are Average Returns, Correlation and Regression. MS Office Excel and SPSS are also used for various computations.

Sample Size Samples were selected from four Exchange Traded Funds; such as SBI Nifty 50 ETF,Nippon India Nifty 50 Bees ETF, ICICI Prudential ETF and HDFC ETF. The research problem presented was solved by systematic analysis of data.The period of study was for 5 years from 2019 to 2023. Examination of excess return and correlation is to perform data analysis and subsequent interpretation.

Data Collection Method

The data required for this data is collected through Secondary sources. The Secondary Data for the study is collected from the platform of NSE Nifty 50.

ANALYSIS OF DATA:

1.To find the significant difference in the performance between Nifty ETFs and the Nifty 50 Index as per average returns.

Null hypothesis (H0): There is no significant difference in the performance between Nifty ETFs and the Nifty 50 Index.

Alternative hypothesis (H1): There is a significant difference in the performance between Nifty ETFs and the Nifty 50 Index.

Table 1: CORRELATION

Descriptive Statistics

	Mean	Std. Deviation	N
NIFTY 50	14843.14785	3315.082766	1236
SBI ETF Return	54.087258	34.3815030	1236
Nippon ETF Return	60.59349	48.230165	1236
ICICI ETF Returns	59.89382	38.585223	1236
HDFC ETF Return	58.85150	35.938237	1236

Correlations

		NIFTY 50	SBI ETF Return	Nippon ETF Return	ICICI ETF Returns	HDFC ETF Return
NIFTY 50	Pearson Correlation	1	.995**	.795**	.990**	.991**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	1236	1236	1236	1236	1236
SBI ETF Return	Pearson Correlation	.995**	1	.798**	.994**	.994**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	1236	1236	1236	1236	1236
Nippon ETF Return	Pearson Correlation	.795**	.798**	1	.794**	.794**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	1236	1236	1236	1236	1236
ICICI ETF Returns	Pearson Correlation	.990**	.994**	.794**	1	.990**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	1236	1236	1236	1236	1236
HDFC ETF Return	Pearson Correlation	.991**	.994**	.794**	.990**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	1236	1236	1236	1236	1236

INTERPRETATION: The table shows the correlations between the NIFTY 50 Index and the returns of four exchange-traded funds (ETFs): SBI ETF, Nippon India ETF, ICICI PRUDENTIAL ETF, and HDFC ETF. All four ETFs have very strong positive correlations with the NIFTY 50 Index, with correlation coefficients ranging from 0.990 to 0.995. This means that the movements of the ETFs tend to closely follow the movements of the NIFTY 50 Index.

The p-values for all correlations are 0.000, which is less than 0.01. This means that the correlations are statistically significant at the 0.01 level. The correlations between the ETFs themselves are also very high, ranging from 0.794 to 0.994. This indicates that the four ETFs tend to move in line with each other as well. Therefore, we can reject the null hypothesis of no correlation and accept the alternative hypothesis of a positive correlation.

COMPOUND ANNUAL GROWTH RATE

CAGR stands for Compound Annual Growth Rate. It's a measure of the mean annual growth rate of an investment over a specified time period, assuming the investment has been compounding over that period.It is often used to compare the returns on different investments over the same period, as it provides a smoothed annualized rate of growth. It's particularly useful when analyzing investments that have experienced significant volatility or fluctuation over time.

Table 2: Compound Average Growth Rate of Nifty 50 ETFs for the period of 5 years-1/01/2019-31/12/23

Nifty 50 index based ETFs	NAV as on 1-01-2019	NAV as on 31-12-2023	CAGR (%)	Rank
SBI Nifty 50 ETF	110.99	226.55	15.34%	3
Nippon India Nifty Bees 50	113.98	239.65	16.02%	2
ICICI Prudential ETF	86.38	235.61	22.22%	1
HDFC Nifty 50 ETF	113.24	206.67	12.79%	4

Data source: NSE

Interpretation:-The CAGR of four ETFs are analysed for 5 years FY:1/01/2019- 31/12/23.ICICI Prudential ETF holds first position as the highest CAGR of 22.22% ,Nippon India Nifty Bees ETF holds second position with CAGR 16.02%. With CAGR 15.34%, 12,79% occupies 3 and 4 th rank of SBI Nifty 50 ETF ,HDFC Nifty 50 ETF respectively.

Table 3: Compound Average Growth Rate of Nifty 50 Index for the period of 5 years

Bench Mark	Value of Index as on 01-01-2019	Value of Index as on 31-03-2023	CAGR %
Nifty 50 Index	10792.5	21731.4	15.03%

All the Nifty 50 ETFs mentioned above are having higher CAGR when compared to index Nifty 50 except for SBI ETF and HDFC ETF .Nifty 50 Index is having CAGR of 15.03% during the period of 01/01/2019-31/12/23.

2.To find the risk-return profile of Nifty 50 ETFs and Nifty 50.

Null Hypothesis (H0)- The risk- return profile of Nifty ETFs is not significantly different from NIFTY 50

Alternative Hypothesis (H1)- The risk- return profile of Nifty ETFs is significantly different from NIFTY 50.

Table 4:-REGRESSION ANALYSIS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.590[a]	.348	.131	3261.7626580

a. Predictors: (Constant), Standard Deviation

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17033651.677	1	17033651.677	1.601	.295[b]
	Residual	31917286.912	3	10639095.637		
	Total	48950938.590	4			

a. Dependent Variable: Return NIFTY 50

b. Predictors: (Constant), Standard Deviation

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16298.038	1853.595		8.793	.003
	Standard Deviation	-.453	.358	-.590	-1.265	.295

a. Dependent Variable: return NFTY 50

INTERPRETATION: It appears that the Standard Deviation has no statistically significant effect on the Return based on the data in the table. Since the model's low R-squared value of 0.29 only accounts for 29% of the variance in the dependent variable and is not statistically significant (p=0.295 is greater than 0.05), the null hypothesis is accepted and the alternative hypothesis is rejected.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.170[a]	.029	-.295	41.37356

a. Predictors: (Constant), Standard Deviation

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	153.638	1	153.638	.090	.784[b]
	Residual	5135.314	3	1711.771		
	Total	5288.953	4			

a. Dependent Variable: Return SBI ETF

b. Predictors: (Constant), Standard Deviation

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.666	61.145		.600	.591
	Standard Deviation	1.621	5.411	.170	.300	.784

a. Dependent Variable: Return SBI ETF

INTERPRETATION: From this test in the model summary of a regression analysis, the dependent variable is return and the independent variable is standard deviation. The R-squared value is 0.29, which means that 29% of the variance in return is explained by the standard deviation ,we can interpret that the regression model is not statistically significant indicating the F-statistic of 0.90 and the p-value of 0.784 indicate that the model is not statistically significant at the 5% level. Hereby, we cannot reject null hypothesis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644[a]	.414	.219	36.48271

a. Predictors: (Constant), Standard Deviation

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2823.884	1	2823.884	2.122	.241[b]
	Residual	3992.964	3	1330.988		
	Total	6816.848	4			

a. Dependent Variable: Return NIPPON ETF

b. Predictors: (Constant), Standard Deviation

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	87.250	24.506		3.560	.038
	Standard Deviation	-1.137	.781	-.644	-1.457	.241

a. Dependent Variable: Return NIPPON ETF

INTERPRETATION-This test provides that the R-squared value of 0.414 indicates that the model explains 41.4% of the variance in the dependent variable, "Return NIPPON ETF".The adjusted R-squared value is 0.219, the standard error of the estimate is 36.48271. This tells us the average distance between the predicted values and the actual values of the dependent variable .The F-statistic of 2.122 and the p-value of 0.241 indicate that the model is not statistically significant at the 5% level. However, the model is not statistically significant hence accepting the null hypothesis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.368[a]	.136	-.152	43.72933

a. Predictors: (Constant), Standard Deviation

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	901.077	1	901.077	.471	.542[b]
	Residual	5736.762	3	1912.254		
	Total	6637.839	4			

a. Dependent Variable: Return ICICI ETF

b. Predictors: (Constant), Standard Deviation

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	144.072	124.123		1.161	.330
	Standard Deviation	-6.592	9.603	-.368	-.686	.542

a. Dependent Variable: Return ICICI ETF

INTERPRETATION: The table shows the R-squared value of 0.152 indicates that the model explains only 15.2% of the variance in the dependent variable. The adjusted R-squared value is even lower at -0.152,the F-statistic of 471.000 and the p-value of 0.000 indicate that the model is statistically significant at the 5% level. Therefore it is significantly different.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.129[a]	.017	-.311	43.9141421

a. Predictors: (Constant), Standard Deviation

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.330	1	98.330	.051	.836[b]
	Residual	5785.356	3	1928.452		
	Total	5883.686	4			

a. Dependent Variable: Return HDFC ETF

b. Predictors: (Constant), Standard Deviation

Coefficients ᵃ

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1　(Constant)	70.636	55.602		1.270	.294
Standard Deviation	-1.164	5.153	-.129	-.226	.836

a. Dependent Variable: Return

INTERPRETATION: The model lacks statistical significance in predicting HDFC ETF returns (R-squared: 0.177, adjusted R-squared: -0.311). With an insignificant F-statistic (0.510) and p-value (0.836), it fails to validate at the 5% level. Coefficient for the constant term: 70.636, indicating mean return when standard deviation is zero; coefficient for standard deviation: -1.164, suggesting a negative relationship, but statistically insignificant (p-value: 0.836).

CONCLUSION

In conclusion, the study investigated the performance and risk-return profile of Nifty 50 ETFs compared to the Nifty 50 Index over a five-year period from 2019 to 2023. Through correlation analysis, it was evident that the ETFs closely mirrored the movements of the index. While most ETFs exhibited higher Compound Annual Growth Rates (CAGR) than the index, regression analysis revealed mixed results regarding their risk-return profiles. While some ETFs showed statistically significant differences in risk-return compared to the index, others did not. Overall, despite variations in performance and risk, Nifty 50 ETFs remain viable investment options, offering investors diversified exposure to India's top 50 listed companies. However, investors should conduct thorough analysis and consider factors such as liquidity, cost, and market volatility before incorporating these ETFs into their investment portfolios.

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