



RESEARCH STUDY ON ANALYSIS OF PERFORMANCE OF EXCHANGE TRADING FUND WITH EQUITY MUTUAL FUND

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Abstract: In recent years, the Indian ETF market has experienced notable expansion and development. ETFs gained traction after their 2001 launch, especially with products such as Gold ETFs. But in 2013, budgetary reforms that lowered transaction taxes and increased the participation of ETFs in pension funds marked a turning point. ETFs used by the government to sell its stake in public sector companies accelerated asset growth and investor awareness. By 2018, the market was dominated by other ETFs, mostly in the equities space, which accounted for a significant amount of all ETF assets. ETFs provide advantages over mutual funds, such as flexibility in trading and efficient operations. This development highlights how ETFs are becoming more and more significant in the Indian investing scene.

Index Terms – Component, formatting, style, styling, insert.

I. INTRODUCTION

To enable effective cash flow, the capital market acts as a crucial conduit between investors with excess capital and businesses in need of funding. Exchange-traded funds (ETFs), bonds, mutual funds, stocks, and other investment vehicles are traded in this market. Globally, mutual funds and exchange-traded funds (ETFs) have become increasingly popular. In India, the use of ETFs for passive investing has grown significantly, making up a sizeable share of the equities fund market. ETFs, which resemble a cross between mutual funds and stocks, have several advantages over conventional mutual funds, such as freedom in trading and efficiency of operations. Momentous developments like the increase of ETF inclusion in pension funds and government divestitures in public sector companies have defined the evolution of the Indian ETF industry. Authorized participants and market players engage in primary and secondary trades within the Indian ETF market. Conversely, mutual funds, which are regulated investment firms, aggregate money from multiple participants and use it to buy a range of assets, including stocks and bonds, under the guidance of an investment manager. Mutual funds' net asset value (NAV), which is defined in terms of share value and is determined every day, is the fund's assets less its liabilities. In the Indian financial sector, exchange-traded funds (ETFs) and mutual funds are essential tools that give investors quick and adaptable access to diversified investment portfolios.

II. Review of Literature

According to Klaas P. Baks (1992), This study analyses 2,086 domestic diversified equity mutual fund managers from 1992 to 1999, revealing evidence of performance persistence. The research employs a Cobb-Douglas production function to attribute abnormal performance to managers and funds, finding that managers contribute 10 to 50 percent. Ultimately, the study concludes that, on average, the fund itself plays a more crucial role in performance outcomes compared to the individual manager, emphasizing the significance of the fund's attributes in achieving success. (2023) The aim of conducting this research is to measure the performance of mutual funds through portfolio (risk/return) Sharpe's model and Treynor's model. The data used is daily high of NAVs of top performing mutual funds and Study duration is January 2021-december 2022. We started with the sample growth scheme for computing relative performance index. The research studies the concept of mutual fund and average risk and return of selected companies of mutual funds which is helpful to take better decisions for investment, whether to invest in which fund according to the rankings given by using Sharpe's and Treynor's model. Keywords: Risk, returns, mutual funds, ranking by Apeksha Ukirde. (2013) Mutual funds are popular in India, with growing assets under management, yet penetration levels lag global counterparts. Stock exchange platforms are considered a solution to boost financial asset penetration. Exchange-traded funds (ETFs) mirror index compositions like Nifty or Sensex and trade on exchanges like equities. In India, there are 19 ETFs and 14 Gold ETFs; a study focused on 7 funds reveals insights into their investment performance, risk, and stock selection ability, reflecting fund efficiency and manager skill by S. Subhashini. (2016) This article investigates the performance efficiency of Exchange Traded Funds (ETFs) in the Indian mutual fund industry using a sample of 12 equity ETFs from April 1, 2011, to March 31, 2015. The study finds that ETFs experience significant tracking error in replicating benchmark indices. Panel regression analysis indicates that assets under management and trading volume positively influence tracking ability, while volatility negatively impacts efficiency. These findings hold implications for investors, managers, and evaluation criteria for actively managed funds by J. Singh, Prabhdeep Kaur. (2015) Growth and Performance of mutual fund This research analyses the growth under management, examines Sector-wise mutual fund sales and mutual fund redemption, and examines the total no. of schemes. The asset management company has shown rapid growth in all. Sectors and the private sector have increased their assets by Ramanujam V., Bhuvanewari A. (2020) The study focuses on evaluating standard mutual fund performance measures through the use of simulated funds mirroring real fund characteristics. The findings indicate that conventional performance metrics, as employed in prior mutual fund research, exhibit limited capability in identifying economically significant abnormalities, such as those reaching three percent per year. This is especially true when a fund's style characteristics deviate from the value-weighted market portfolio. However, the study suggests that employing event-study procedures analyzing a fund's stock trades can substantially enhance the power of detection, and such procedures are viable using time-series data sets on mutual fund portfolio holdings by S.P.Kothari, Jerold B. Warner. (2008) An overview of the mutual fund market in Europe is given in this paper, which also evaluates the performance of 506 funds in five significant European nations. 'Hot hands' and performance persistence among fund managers are investigated using the Carhart 4-factor model. Interestingly, European mutual funds show positive after-cost alphas, indicating value addition, especially small-cap funds. Upon accounting for management fees, four of the five nations exhibit noteworthy overall superiority. In contrast to the widely held belief that mutual funds perform poorly in the US, the study also demonstrates a strong persistence in mean returns for funds with a focus on the UK Roger Otten, Dennis Bams. (2014) This study examines the impact of stock quality on mutual fund performance from 2000 to 2009. Higher-quality stocks, associated with larger size and lower volatility, outperform lower-quality ones, especially in volatile markets. Stocks in the lowest quality decile exhibit notably poor performance during market downturns. Funds holding lower quality stocks experience significant underperformance, with those in the lowest decile showing a monthly alpha 0.96% (12.14% pa) lower than higher quality counterparts. Interestingly, a trend towards funds investing in higher quality stocks is observed over time by David R.Gallagher, Peter A. Gardner. (1992) The paper examines the relationship between mutual fund performance and past performance using a multiple portfolio benchmark formed on securities characteristics. The findings indicate that performance disparities among funds endure over time, suggesting a persistent trend. This persistence aligns with the notion that fund managers possess the ability to generate abnormal returns, reinforcing the significance of their skill in influencing mutual fund outcomes by MARK GRINBLATT, SHERIDAN TITMAN. (2011) This article explores how mutual funds alter their risk levels over time and the resulting performance implications. It examines whether risk shifting is driven by unskilled or self-interested fund managers, aiming to boost personal compensation, or by skilled managers seeking to capitalize on their abilities. The findings indicate that funds increasing risk fare worse than those maintaining stability, suggesting that risk shifting may signify inferior ability or be influenced by agency-related motivations by JenniferHuang, ClemensSialm, Hanjiang Zhang

OBJECTIVE OF THE STUDY

To analyze and compare the performance of ETFs and actively managed equity mutual funds in the Indian stock market.

RESEARCH METHODOLOGY

The Indian stock market presents investors with a plethora of choices, and two prominent options are Exchange Traded Funds (ETFs) and actively managed equity mutual funds (AMFs). Each category boasts distinct advantages and disadvantages, leading to ongoing debate about their efficacy. This study aims to provide a comprehensive analysis and comparison of their performance within the Indian context, leveraging a unique dataset of 42 carefully selected paired schemes encompassing 84 schemes across diverse sectors and various mutual fund houses.

The data that is selected with below criteria:

- The data includes the returns of ETFs of 42 funds excluding the commodities and debt ETFs, in the last one year, the Equity traded funds that are considered are those the data available for the same year, with similar sector and investing background.
- The mutual fund is all open ended.

PERFORMANCE ANALYSIS

Following are the concepts to be used in the analysis of the ETFs and Mutual Funds schemes:

Historical Returns: Understanding Past Performance

Historical returns refer to the **past performance of a financial asset**, such as a stock, bond, fund, or index. It represents the rate of return achieved over a specific period, usually expressed as a percentage. By analyzing historical returns, investors and analysts can gain insights into:

- **Past trends and patterns:** This helps understand how the asset has performed in different market conditions, such as economic booms and recessions.
- **Average performance:** Historical returns provide a sense of the typical return an investor can expect from the asset over the long term.
- **Volatility:** This measures the level of fluctuation in past returns, indicating the asset's riskiness.
- **Comparison with benchmarks:** You can compare historical returns of an asset to a relevant benchmark (e.g., stock market index) to assess its relative performance.

Critical aspects of Return analysis

- **Past performance is not necessarily indicative of future results.** Many factors can influence future returns, and past trends may not always repeat.
- **Historical returns do not consider risk.** While average returns are helpful, understanding the associated volatility is equally important.
- **Different assets have different return and risk profiles.** Comparing historical returns across different asset classes requires context and adjustment for risk.

Common uses of historical returns:

- **Investment selection:** Investors can use historical data to compare potential investments and identify assets with attractive past performance and risk profiles.
- **Portfolio construction:** Historical returns help investors diversify their portfolios by choosing assets with different return and risk characteristics.
- **Performance evaluation:** Comparing historical returns to benchmarks or investment objectives helps assess the effectiveness of an investment strategy.

3.1 ANALYSIS

Based on the results, the second group (mf) has a significantly higher mean value than the first group (etf) at the 5% significance level.

- **The mean difference between the two groups (etf - mf)** is -4.99881. This indicates that the group mf has a higher average value than the group etf.
- The **standard deviation** of the differences is 18.52628, which suggests some variability in the individual differences between the two groups.
- The **p-value** is 0.088, which is greater than the significant level of 0.05. This means that we cannot reject the null hypothesis that there is no difference between the two groups at the 5% significance level. However, the p-value is close to 0.05, so we might consider this a marginally significant result.

In conclusion, while there is not a statistically significant difference between the two groups at the conventional 5% level, the observed difference of nearly 5 units with a p-value of 0.088 suggests that a real difference might exist.

T-TEST ANALYSIS

The paired sample t-test analysis is very helpful in this case in which the relationship of the ratios can be analyzed easily. To analyze the data, we should compare the returns of active mutual funds and ETFs. For the given paired sample t-test results you provided, where differences are calculated for each pair, the hypotheses would be formulated as follows:

Null Hypothesis (H0): There is no significant difference between the performance of Exchange Traded Fund and Equity Mutual Funds.

Alternative Hypothesis (H1): There is a significant difference between the observations.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	etf - mf	-4.99881	18.52628	2.85867	-10.77201	.77439	-1.749	41	.088

Paired Samples Statistics:

- The mean return for ETFs is 30.34%, while the mean return for MFs is 35.34%. This suggests that MFs outperformed ETFs on average over the analyzed period.
- The standard deviation for ETFs is 16.68%, while the standard deviation for MFs is 10.80%. This indicates that ETFs were slightly more volatile than MFs.

Paired Samples Correlations:

- The correlation between ETF and MF returns is 0.144. This is a very weak positive correlation, suggesting that there is little to no linear relationship between the returns of the two categories.

Paired Samples Test:

- The mean difference in returns between ETFs and MFs is -5.00%. This means that MFs outperformed ETFs by an average of 5% over the analyzed period.
- The p-value is 0.088, which is slightly greater than the typical significance level of 0.05. However, it is still close enough to suggest a potential difference between the two groups.
- The t-statistic is -1.75, which is also not statistically significant at the 0.05 level.

Observations:

- The paired samples t-test compares the performance of ETFs and MFs in terms of their mean returns and volatilities.
- MFs appear to have had **higher average returns (35.34%)** than ETFs (30.34%) over the analyzed period.
- However, the **difference in average returns is not statistically significant (p-value = 0.088)**, meaning there's a possibility it could be due to chance.
- ETFs seem to have been **slightly more volatile (16.68% standard deviation)** compared to MFs (10.80% standard deviation).
- The correlation between ETF and MF returns is **very weak (0.144)**, suggesting little to no relationship between their individual performances.

Conclusion:

- Mutual funds seem to have **slightly outperformed** exchange-traded funds on average in this specific analysis. Their mean return stands at 35.34% compared to ETFs' 30.34%.
- However, this apparent outperformance is **not statistically significant**, meaning it could be attributed to random chance rather than a true difference between the two categories. The p-value of 0.088, slightly higher than the commonly used significance level of 0.05, reinforces this point.
- While ETFs exhibit slightly **higher volatility** (standard deviation), suggesting marginally greater fluctuations in their returns, both MFs and ETFs show positive skewness. This implies a **higher likelihood of returns falling below the average** compared to a normal distribution.
- Additionally, the slightly higher kurtosis observed in both groups indicates a **greater chance of extreme returns**, implying both positive and negative outliers are possible in their individual performance.
- Based on this data alone, we cannot definitively claim that MFs consistently outperform ETFs in terms of returns. The observed difference could be due to chance.
- Both categories display similar underlying characteristics in terms of return distribution, with a tendency for returns to deviate from the average and the potential for outlier performances.
- It's crucial to remember that past performance is not a guarantee of future results. Other factors like investment goals, risk tolerance, expense ratios, and individual fund selection within each category play a significant role in determining investment outcomes.

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