"PERFORMANCE EVALUATION OF MUTUAL FUNDS USING SORTINO'S AND INFORMATION RATIO IN ACTIVE INVESTMENT STRATEGY"

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ABSTRACT

This study evaluates mutual fund performance using Sortino's ratio and the Information Ratio in active investment strategies. Sortino's ratio focuses on downside risk, while the Information Ratio measures excess returns relative to a benchmark. Historical data on fund returns, benchmarks, and risk measures are analyzed to assess risk-adjusted performance and the ability to generate excess returns. The findings provide valuable insights for investors and fund managers, aiding investment decisions and fund selection.

Keywords: performance evaluation, mutual funds, Sortino's ratio, Information Ratio, active investment strategy, risk-adjusted performance, downside risk, excess returns, benchmark.

I. INTRODUCTION

A mutual fund is an investment vehicle that allows individuals to pool their money and invest in a diversified portfolio of securities, bonds, and other currencies. The Indian mutual fund industry experienced significant growth and maturity after the financial liberalization measures of 1991, which opened doors for private sector participation and increased options for investors. The industry saw the implementation of various regulations by SEBI from 2000 to 2020, focusing on transparency, investor protection, and ethical practices. The Information Ratio is a performance metric that assesses an investment manager's ability to generate excess returns relative to the risk taken. The Sortino Ratio, created by Frank A. Sortino, evaluates risk-adjusted returns by considering downside volatility. Both ratios have limitations and should be used alongside other indicators for a comprehensive evaluation.

STATEMENT OF THE PROBLEM

Active investing approaches call for making investment choices based on market data and forecasts to outperform the market benchmark. Using mutual funds is a trendy way to put active investment strategies into practice. However, evaluating the performance of these mutual funds can be challenging due to the intricacy of the investment process and the risks involved. This study tries to address the problem of rigorously evaluating the efficiency of active funds investment strategy using Sortino's and Information Ratio measurements. The study will investigate the limitations of these metrics and suggest other workarounds.

OBJECTIVES

- To understand the impact of various investment risks and performance measures
- To measure the performance of selected active investment funds using Sortino and information ratio
- To give investors a scientific way to assess mutual fund performance in an active investing strategy and help them to invest with well-informed investment decisions

II. REVIEW OF LITERATURE

1. Performance Evaluation Of Select Equity Mutual Fund Schemes In India(2023)

This study analyzes the performance of 15 equity mutual fund schemes, including large-cap, mid-cap, and small-cap funds, over a three-year period from April 2015 to March 2018. Statistical measures such as beta, standard deviation, Sharpe ratio, and Treynor ratio are used for analysis. The findings indicate that certain funds, such as India Bulls Blue Chip Fund and L&T Midcap Fund, have outperformed their respective benchmarks in terms of Sharpe and Treynor ratios.

Overall, the performance of all schemes against their benchmarks has been satisfactory, showcasing the potential for good long-term returns in equity investments.

2. Evaluating The Performance Of Private And Public Mutual Funds(2023)

The study aims to determine whether mutual funds in both the private and public sectors offer comparable returns while considering the associated risk. The findings suggest that private-sector retirement plans outperform public-sector plans, indicating differences between the two sectors. Public-sector retirement plans generally provide lower returns compared to private-sector plans. The majority of evaluated measures, such as Sharpe, Jensen, and Treynor ratios, indicate that private-sector funds outperform public-sector funds. In terms of risk, public-sector funds are generally riskier than private-sector funds. The study concludes that private-sector mutual funds tend to generate higher returns than their public-sector counterparts.

3. Performance Evaluation Of Hdfc Mutual Fund Selected Schemes(2022)

The analysis of HDFC - Capital Builder Value Fund and HDFC - Focused 30 Fund reveals their performance relative to the market benchmark. The Capital Builder Value Fund demonstrates higher average returns, lower standard deviation, and better risk-adjusted ratios compared to the benchmark. The Focused 30 Fund exhibits higher risk and positive risk-adjusted measures, indicating the potential for superior returns. Overall, both funds have shown the ability to generate positive returns for investors, outperforming the market in different aspects.

4. Investment Performance and Tracking Efciency of Indian Equity Exchange Traded Funds(2022)

ETFs have become a successful innovation in the investment sector, attracting cautious and cost-conscious investors. The study evaluated Indian equity ETFs and found that while they generally outperformed their benchmarks, they exhibited notable tracking errors. Risk and management fees had an inverse relationship with ETF returns. The findings highlight the need to minimize tracking errors and educate investors about the benefits of equity ETF investment. Future research can explore other categories of ETFs and include additional variables related to liquidity, volatility, and trading volume.

5. A Study Of Price To Earning In Indian Stock Market(2022)

The study analyzed the relationship between P/E ratios and stock market performance in the Indian market. Results showed that high P/E portfolios outperformed low P/E portfolios, indicating the presence of the P/E effect and challenging the Efficient Market Hypothesis. These findings suggest that investors can use P/E ratios to generate abnormal returns in the Indian stock market.

6. A Study Of Price Efficiency Of Mutual Fund Schemes During Covid-19: Empirical Analysis In Indian Context Using Dea Approach To Earning In Indian Stock Market(2022)

This paper analyzes the performance efficiency of mutual funds during COVID-19, focusing on equity and debt schemes. Most fund houses perform well in large and multi-cap segments, while few are efficient in mid-cap and small-cap segments. Investors can select efficient schemes based on scores, considering NAV and expense ratio. Debt funds tend to be more efficient. The findings inform investment strategies and highlight the need for operational efficiency improvements in inefficient funds. Future research can validate the findings using a longer duration and dynamic DEA approach.

7. Growth and Performance Measurement of ESG-themed Mutual Funds in India: An Empirical Investigation (2022)

This study examines the growth and performance of ESG mutual funds in India. It finds that while the ESG mutual fund industry is still in its early stages in India, it has shown steady growth in terms of the number of funds and assets under management. The performance analysis identifies the Quant ESG Equity Fund as the best performer, highlighting its high returns and risk. However, caution is advised for risk-averse investors. The study suggests that ESG investing can offer both sustainability goals and higher returns for investors.

It also emphasizes the need for the ESG fund industry to adopt innovative data analysis tools and technologies. The findings can inform investors, the industry, and regulators, and future research can compare ESG funds with traditional funds over a longer time horizon.

8. A Study on Performance Evaluation of Selected Mutual funds with special reference to ICICI Prudential Mutual Fund ,Tirupati(2022)

● After seeing both the sectors it is observed that corporate sector has performed well when compared to nationalized sector. This is because of the increase in technology, various schemes used and introduced, various benefits given to customers, introduction of online facilities for customers in the corporate sectors. There are various opportunities to invest our money but mutual funds are better because every one think that "low risk – high returns" but in the mutual funds we get the optimum returns with low risk.

9. Mutual Fund: Analysis the Performance in Long Term(2022)

Based on the study, it was found that the majority of the selected mutual fund schemes outperformed the benchmark returns, indicating that investors were able to achieve higher returns. Schemes with skilled fund managers who had stock selection abilities performed better than those without such skills. Market timing and stock selection were important for long-term returns. It is recommended that investors consider the performance of schemes and the expertise of fund managers before investing in mutual funds to maximize their returns.

10. Performance Analysis Of Select Tax Saving (Equity Linked Savings Scheme) Mutual Funds(2022)

In conclusion, mutual funds serve as a lucrative investment option for investors who lack the time, interest, or knowledge to invest directly in the stock market. The performance evaluation of tax-saving mutual funds indicates that investors should carefully consider factors such as returns, risk, and performance parameters to make informed investment decisions.

Research Methodology:

3.1 Period of study

In this study, I have used secondary monthly data of mutual fund schemes for a period of three years from 1st January 2020 to 31st December 2022.

3.2 Data analysis framework

Sortino Ratio

Sortino ratio is the tool that assesses the performance of an investment for each unit of downside risk involved in the deal. The downside risk is calculated per the loss a portfolio is expected to record based on the market fluctuations. The investment's performance about the downside deviation is assessed. The investor is compensated for taking on more risk when the Sortino ratio is higher. Similarly, a low Sortino ratio may show the investor is not being compensated for the added risk they assumed.

$$\text{Sortino Ratio} = \frac{\text{Actual or expected portfolio return} - \text{Target}}{\text{Standard deviation of the downside risk}}$$

Information Ratio

This ratio shows both the consistency of the excess returns and the excess It reduces returns in contrast to the benchmark. Tracking error is used to calculate how often extra returns are created. A higher information ratio suggests a better portfolio manager who produces a higher return for the expected risk.

$$\text{Information Ratio} = \frac{\text{Portfolio Return} - \text{Benchmark Return}}{\text{Tracking error}}$$

4. DATA ANALYSIS AND INTERPRETATION

Performance evaluation of Flexi Cap Fund for the years 2020-21, 2021-22 & 2022-23 through Sortino Ratio

	Sortino Ratio		
	2020-21	2021-22	2022-23
Aditya Birla Sun Life Flexi Cap Fund	-1.10%	-1.10%	0.11%
HDFC Flexi Cap Fund Growth	-0.52%	-0.52%	2.73%
Axis Flexi Cap Fund	-10.02%	-10.02%	0.14%
Kotak Flexi Cap Fund	-3.37%	-3.37%	-2.07%
SBI Flexi Cap Fund	-1.84%	-1.84%	0.72%

Interpretation: A ratio between 1 and 2 is considered ideal. However, there are instances where the ratio might also reach 3, and, in some instances, investors might be fine with values slightly less than 1 too. In addition, one might obtain a negative ratio, suggesting no rewards for the risks taken. Except the Kotak flexi fund, all the funds considered for study gave a positive result yielding returns on risk taken.

Performance evaluation of Flexi Cap Fund for the years 2020-21, 2021-22 & 2022-23 through Information Ratio

	Information Ratio		
	2020-21	2021-22	2022-23
Aditya Birla Sun Life Flexi Cap Fund	0.10	0.01	-0.04
HDFC Flexi Cap Fund Growth	0.06	0.30	1.23
Axis Flexi Cap Fund	-1.43	0.01	-0.46
Kotak Flexi Cap Fund	-0.32	-0.23	0.58
SBI Flexi Cap Fund	-0.34	0.09	0.13

The information ratio formula (IR) refers to the expression that helps measure an active investment manager's success strategy by comparing the excess returns generated by the investment portfolio to the volatility of those excess returns. It throws light on the fund manager's ability to generate sustainable excess returns or abnormally high returns over a period of time. A higher value of this ratio indicates a better risk-adjusted performance of the investment portfolio. As information ratio measures and compares the active return of an investment compared to a benchmark index relative to the volatility of the active return, the higher the ratio, the higher the performance of fund and higher the performance of the fund manager in generating good returns. Accordingly, HDFC Flexi Cap Fund Growth has performed well out of all funds in the three years together.

Performance evaluation of Frontline Equity Fund for the years 2020-21, 2021-22 & 2022-23 through Sortino Ratio

	Sortino Ratio		
	2020-21	2021-22	2022-23
Aditya Birla Sun Life Flexi Cap Fund	-0.75%	0.27%	4.51%
HDFC Flexi Cap Fund Growth	-1.20%	1.03%	10.30%
Axis Flexi Cap Fund	-8.21%	-1.07%	-2.12%
Kotak Flexi Cap Fund	-1.53%	-0.20%	6.44%
SBI Flexi Cap Fund	1.56%	-1.11%	7.80%

Interpretation: A negative ratio suggests that investors are not compensated for the additional risk they have taken, and the above ratios for frontline equity fund for 3 years duration shows that investors were not compensated for year 2020-21 and 2021-22, and investors are paid good returns.

Performance evaluation of Frontline Equity Fund for the years 2020-21, 2021-22 & 2022-23 through Information Ratio

	Information Ratio		
	2020-21	2021-22	2022-23
Aditya Birla Sun Life Flexi Cap Fund	0.20	0.03	0.37
HDFC Flexi Cap Fund Growth	0.04	0.12	0.92
Axis Flexi Cap Fund	-1.05	-0.12	-0.25
Kotak Flexi Cap Fund	-0.03	-0.02	0.54
SBI Flexi Cap Fund	0.54	0.13	0.73

The above table shows that Aditya Birla Sun Life Flexi Cap Fund, HDFC Flexi Cap Fund Growth, and SBI Flexi Cap Fund performed well giving positive return to investors. SBI Flexi Cap Fund's average ratio for the three years is highest, proving the performance of the fund manager in implementing the active strategy on funds investment.

CONCLUSION

The study concludes that Sortino's ratio and information ratio are effective tools for assessing the effectiveness of mutual funds. Sortino's ratio, focusing on downside risk, provides a comprehensive evaluation of risk-adjusted returns and safeguards investors' money during market downturns. The information ratio is valuable for evaluating active fund managers by comparing their ability to generate excess returns against a benchmark. This ratio helps investors make informed decisions about fund selection. The study highlights the importance of using multiple performance metrics, including Sortino's ratio and information ratio, to gain a better understanding of risk-adjusted returns and fund management skill. It suggests combining these ratios with other considerations like expenses, investment philosophy, and historical performance for wise investing decisions. The findings offer insights for individual and institutional investors seeking to maximize their mutual fund investments within an active investment strategy. By incorporating Sortino's ratio and information ratio in performance reviews, investors can potentially enhance their overall investing results.

REFERENCE

1. Naik, G. R., Gaude, V. P., & Kapdi, g. Performance evaluation of select equity mutual fund schemes in india. UGC Care Journal, 47(1), 83-90.
2. Kalpana, M. P., & Hema, K. Evaluating the performance of private and public mutual funds. Growth (G), 14(32), 18-01.
3. Srinath, M. C. Performance evaluation of hdfc mutual fund selected schemes. Anveshana's International Journal of Research in Regional Studies, Law, Social Sciences, Journalism and Management Practices, 7(3),83-90.
4. Alamelu, L., & Goyal, N. (2023). Investment Performance and Tracking Efficiency of Indian Equity Exchange Traded Funds. Asia-Pacific Financial Markets, 30(1), 165-188.
5. Loganathan, K. A study of price to earnings in indian stock market. UGC Care Journal, 46(4),162-169.
6. Kaur, M., & Sandhu, A. (2022). Efficiency of mutual fund schemes during covid-19: empirical analysis in indian context using dea approach. Journal of Contemporary Issues in Business and Government Vol, 28(04).
7. Gupta, S. Growth and Performance Measurement of ESG-themed Mutual Funds in India: An Empirical Investigation. Orissa Journal of Commerce, 43(2), 9-26.
8. Reddy, T. T., & Haritha, K. A Study on Performance Evaluation of Selected Mutual funds with special reference to ICICI Prudential Mutual Fund, Tirupati. Journal homepage: www. ijrpr. com ISSN, 2582, 7421.
9. BISWAS, D. (2022). Mutual Fund: Analysis the Performance in Long Term.
10. Kumar, S. P. Performance analysis of select tax saving (equity linked savings scheme) mutual funds. Journal of management & entrepreneurship, 16(1), 177-185.