

Performance Analysis of Equity Mutual Funds in India- A Study on Selected Mutual Funds

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Citation: Suruchi, S., Yadav, D., Yadav, B., & Kumar, K. (2025). Performance Analysis of Equity Mutual Funds in India- A Study on Selected Mutual Funds. *International Journal of Education, Modern Management, Applied Science & Social Science*, 07(03(III)), 253–259. [https://doi.org/10.62823/ijemmasss/7.3\(iii\).8301](https://doi.org/10.62823/ijemmasss/7.3(iii).8301)

ABSTRACT

This study examines the performance of equity mutual funds in relation to their benchmark indices, highlighting variations in fund efficiency and management effectiveness. The analysis employs risk-adjusted performance measures, including the Sharpe Ratio, Jensen's Alpha, and Treynor's Ratio, to evaluate returns relative to risk. The findings reveal a diverse performance landscape, where some funds demonstrate superior risk-adjusted returns and effective portfolio management, while others exhibit significant underperformance, indicating potential shortcomings in investment strategies and managerial decision-making. The results emphasize the importance of incorporating risk, volatility and managerial skill into mutual fund evaluation. Overall, the study provides valuable insights for investors seeking to optimize portfolio selection and make informed investment decisions within the equity mutual fund segment.

Keywords: Equity Mutual Funds, Risk-Adjusted Performance, Sharpe Ratio, Jensen's Alpha, Treynor's Ratio, Benchmark Indices.

Introduction

The Indian financial market has seen substantial growth and evolution over the past few decades, leading to the emergence and popularity of various investment instruments. Among these, Mutual Funds (MFs) have obtained much consideration from the large number of investors. The performance analysis of these mutual funds investment avenues has become a critical area of study for researchers and financial analysts. This evolution has been driven by various reforms and policy measures aimed at enhancing market efficiency, transparency, and investor protection. The liberalization of the Indian economy in the early 1990s marked the beginning of this transformation, leading to the development of a robust financial infrastructure that supports a wide array of financial instruments and services.

One of the most notable changes in the Indian financial market is the increased participation of both domestic and foreign investors. The introduction of advanced technology and digital platforms has made financial markets more accessible, enabling a broader investor base to participate in trading activities. This has contributed to the growth and diversification of investment options available to both retail investors as well as institutional investors in a similar manner. Among the myriad investment options, Mutual Funds (MFs) have emerged as popular choices for investors seeking exposure to equity markets. Mutual funds allow investors to pool their capital to create a diversified investment portfolio managed by professional fund managers. These funds aim to achieve capital appreciation over the long term by selecting stocks that align with the fund's investment strategy and objectives (Prasanna, 2012). EMFs offer investors the advantage of professional management, diversification, and the potential for high returns, making them a staple in many investment portfolios.

Mutual funds are investment vehicles that pool money from many investors to invest in a diversified portfolio of securities. Professional fund managers managed these funds to achieve specific investment objectives such as capital growth, income generation or both. Investors in MF purchase shares that represent a portion of the holdings of the fund, and the shares' value varies according on how well the underlying assets perform. MFs are a popular option for individuals as well as institutions owing to the benefits they have, which include accessibility, expert management, and diversification. (Prasanna, 2012). On the basis of market capitalization mutual funds are categorised in small cap funds, mid cap funds and large cap funds.

Literature Review

Khurana, A., & Bhatia, A. (2023) study compares the five -year performance of selected large cap mutual funds between 2018 to 2022 and also inspects the variables impacting investors choice of large cap equity MFs at the time of investing . The result shows that all the selected mutual funds performed very well during the study period. Safety and liquidity considered the main factors that influence the decision of investors.

Yadav, M. M., & Venkatesh Kumar, N. (2023) evaluated the performance of 24 equity mutual fund schemes from Jan 1,2020- Dec 31, 2022 by using tools like standard deviation, average return, regression analysis, one way ANOVA, and Sharpe ratio. The results indicated that mutual funds outperformed their benchmark index and thus making them preferable investment for investors.

Murthy, J et al (2022) analysed a three year performance evaluation (April 2019 – March 2022) of selected mutual fund schemes using risk-return measures such as standard deviation, Treynor's, Sharpe Ratio, ANOVA and NAV. The study indicated strong fund performance despite market volatility and emphasized that investment decisions should primarily consider risk and return followed by safety and liquidity. The study also emphasizes upon the performance ratios rather than NAV alone while taking the investment decisions.

Kaur, M., & Sandhu, A. (2022) analysed the efficiency of mutual funds during Covid 19 period focusing on selected open ended equity mutual funds and debt funds. The results indicated that large cap and multi cap equity schemes remained relatively efficient, while mid cap and small cap schemes were adversely affected by higher volatility and expense ratio. Additionally debt schemes outperformed the equity schemes in terms of mean efficiency and no mutual fund house consistently demonstrated efficiency across all market segments.

Mathur, P (2021) has evaluated the performance of ten selected large cap and multi cap funds over a five year period and compared them with Nifty 500 and BSE 200 indices. The study identifies significant differences between the fund and benchmark indices though the funds generated satisfactory returns.

Sharma, K.B & Joshi, P. (2021) examined comparative performance efficiency of selected debt mutual funds , equity mutual funds and hybrid mutual funds along with the measurement of risk-return relationship and the market volatility of chosen schemes. The study revealed that debt funds delivered the superior performance in comparison to equity mutual funds and hybrid mutual funds.

Sahai, A., & Kumar, D. (2020) examined 34 equity mutual funds from 1995-2020. The study quantitative compared fund returns with respective benchmark indices by using tools like Treynor , Sharpe, Jensen, Delta, SD and R^2 . The analyses revealed that the CRISIL and AMFI equity fund performance index outperformed the S&P BSE SENSEX (TRI), NIFTY 50 (TRI) and NIFTY 500 (TRI).

Arora, R., & Raman, T. V. (2020) evaluated the performance of selected equity diversified funds across the top ten AMCs, applying standard evaluation tools to rank the funds. In the small-cap category, HDFC Small Cap ranked first, followed by L&T Emerging Business Fund and SBI Small Cap. For mid-cap funds, L&T Midcap was ranked first, followed by Axis Midcap and Kotak Emerging Equity Fund. In the large-cap category, Axis Blue Chip Fund, ICICI Prudential Blue-Chip Fund, and Reliance Large Cap Fund held the top three ranks, respectively.

Objectives

- To examine the financial performance of selected equity mutual funds to its benchmark index.
- To evaluate and compare performance of the mutual fund schemes through key performance measures like Sharpe Ratio, Jensen alpha and Treynor ratio.

Research Methodology

Data & Source of Study

The present study includes 30 equity mutual funds from various Asset Management Companies, selected on the basis of assets under management (AUM). The time period of the study is from Year 2020-2023. The most popular index the NIFTY 50 has been used as the benchmark for the study. Data will be collected from secondary sources to analyze the performance of the equity mutual funds. Required data is collected from the secondary sources like NSE publication, fact sheets of the schemes, AMC's websites, Moneycontrol website and AMFI website. For the performance analysis of the schemes data of NAV is required that is collected from the previously mentioned secondary sources. After the collection of NAV, there is a need to convert the NAV in the usable data of returns.

Tools & Techniques

Following statistical tools are used to analyse the data:

S. No.	Tool	Usability	Formula
1	Rate of Return	It determines the average return of the selected equity mutual fund.	$(\text{Closing Price} - \text{Opening Price}) / \text{Opening Price} * 100$
2	Beta (β)	It measures the systematic risk or volatility of a security with reference to market as a whole.	$\beta = \text{Covariance } (A_i - A_m) / \text{Variance } (A_m)$ $A_i = \text{Return of Fund}$ $A_m = \text{Return of Market}$
3	Standard Deviation	It measures how much funds return is deviated from its excess return on the basis of historical performance.	
4	Sharpe Ratio	This ratio quantifies the relationship between the excess return or risk premium and the return's variability, which is assessed through the standard deviation of returns.	$\text{Sharpe Ratio} = (A_p - A_r) / \sigma_p$ $A_p = \text{Portfolio Return}$ $A_r = \text{Risk Free Rate of Return}$ $\sigma_p = \text{SD of Portfolio Return}$
5	Jensen Ratio	This ratio seeks to quantify the difference between the actual returns generated by a portfolio and the returns anticipated based on the portfolio's risk profile. It serves as a tool for assessing a fund manager's proficiency in recognizing undervalued assets, which can lead to returns that surpass those of a benchmark.	$J_p = A_p - \{A_r + \beta_p (A_m - A_r)\}$ $A_p = \text{Expected Return on Portfolio}$ $A_r = \text{Risk Free Rate of Return}$ $A_m = \text{Return of Market}$ $\beta_p = \text{Systematic Risk of Portfolio}$
6	Treynor Ratio	This ratio quantifies the relationship between the excess return, or risk premium, and the volatility of returns, which is assessed through the portfolio's beta.	$\text{Treynor Ratio} = (A_p - A_r) / \beta_p$ $A_p = \text{Portfolio Return}$ $A_r = \text{Risk Free Rate of Return}$ $\beta_p = \text{Systematic Risk of Portfolio}$

Data Analysis

S.No	Scheme Name	Plan	Category Name	AuM (Cr)	NAV
1	Nippon India Small Cap Fund – Growth	Regular	Small Cap Fund	41018.838	133.922
2	SBI Small Cap Fund - Regular Plan – Growth	Regular	Small Cap Fund	22894.861	141.35
3	HDFC Small Cap Fund – Growth	Regular	Small Cap Fund	25408.969	112.589
4	Axis Small Cap Fund – Growth	Regular	Small Cap Fund	17915.658	83.09
5	DSP Small Cap Fund - Regular Plan – Growth	Regular	Small Cap Fund	13094.61	155.451
6	Kotak Small Cap Fund – Growth	Regular	Small Cap Fund	13376.615	212.826

7	HSBC Small Cap Fund – Growth	Regular	Small Cap Fund	12795.355	67.858
8	Franklin India Smaller Companies Fund – Growth	Regular	Small Cap Fund	10776.627	141.259
9	Quant Small Cap Fund – Growth	Regular	Small Cap Fund	11206.763	202.489
10	Canara Robeco Small Cap Fund - Regular Plan – Growth	Regular	Small Cap Fund	8641.684	31.77
11	Kotak Emerging Equity Fund – Growth	Regular	Mid Cap Fund	36527.954	97.318
12	Axis Midcap Fund – Growth	Regular	Mid Cap Fund	23549.098	83.25
13	Nippon India Growth Fund – Growth	Regular	Mid Cap Fund	21380.481	3090.413
14	SBI Magnum Midcap Fund - Regular Plan – Growth	Regular	Mid Cap Fund	14454.732	189.715
15	DSP Midcap Fund - Regular Plan – Growth	Regular	Mid Cap Fund	15947.032	115.364
16	PGIM India Midcap Opportunities Fund – Growth	Regular	Mid Cap Fund	9800.281	51.85
17	UTI Mid Cap Fund – Growth	Regular	Mid Cap Fund	9407.923	239.689
18	Sundaram Mid Cap Fund – Growth	Regular	Mid Cap Fund	9293.427	1014.505
19	Franklin India Prima Fund – Growth	Regular	Mid Cap Fund	9280.765	2026.494
20	HSBC Mid Cap Fund - Regular Plan – Growth	Regular	Mid Cap Fund	8847.772	284.074
21	ICICI Prudential Bluechip Fund – Growth	Regular	Large Cap Fund	44425.371	85.68
22	Axis Bluechip Fund – Growth	Regular	Large Cap Fund	31816.146	49.53
23	HDFC Top 100 Fund – Growth	Regular	Large Cap Fund	27687.123	940.864
24	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan – Growth	Regular	Large Cap Fund	24289.982	417.86
25	Canara RobecoBluechip Equity Fund - Regular Plan – Growth	Regular	Large Cap Fund	10816.609	49.47
26	Franklin India Bluechip Fund – Growth	Regular	Large Cap Fund	7019.648	816.585
27	DSP Top 100 Equity Fund - Regular Plan – Growth	Regular	Large Cap Fund	3161.417	363.106
28	HSBC Large Cap Fund – /Growth	Regular	Large Cap Fund	1600.018	384.966
29	Baroda BNP Paribas Large Cap Fund - Regular Plan – Growth	Regular	Large Cap Fund	1575.605	173.121
30	Bandhan Large Cap Fund - Regular Plan – Growth	Regular	Large Cap Fund	1193.832	59.874

Interpretation

The Equity Mutual Funds table presents data on various mutual fund schemes categorized into Large Cap, Mid Cap, and Small Cap funds, highlighting the Assets under Management (AUM) and Net Asset Value (NAV). Assets under Management (AuM) represent the total market value of the assets managed by the fund, indicating its size and investor confidence. "Nippon India Small Cap fund – Growth" has an AUM of 41018.838 crores, making it one of the larger funds in the small cap category, Kotak Emerging Equity Fund – Growth has an AUM of 36527.954 crores, making it one of the larger funds in the mid cap category the "ICICI Prudential Bluechip Fund - Growth" has an AUM of 44,425.371 crores, making it one of the larger funds in the Large Cap category. Net Asset Value (NAV) represents the per-unit market value of the fund, showing the value of each share of the fund. Higher NAVs often indicate

well-performing funds. The "Nippon India Growth Fund – Growth" has a notable NAV of 3090.413 in the Mid Cap category, reflecting substantial growth.

Performance Analysis

S.No	Scheme Name	Sharpe Ratio		Jensen's Alpha		Treyner's Ratio	
		FUND	INDEX	FUND	INDEX	FUND	INDEX
1	Nippon India Small Cap Fund – Growth	1.8	0.67	7.39	-0.02	0.32	-1.41
2	SBI Small Cap Fund - Regular Plan – Growth	1.42	0.83	2.25	-2.38	0.26	0.05
3	HDFC Small Cap Fund – Growth	1.64	0.58	5.67	-0.15	0.3	0.1
4	Axis Small Cap Fund – Growth	1.56	0.83	3.86	-0.15	0.3	0.09
5	DSP Small Cap Fund - Regular Plan – Growth	1.48	0.67	2.99	-0.15	0.27	0.09
6	Kotak Small Cap Fund – Growth	1.63	0.64	4.49	-0.28	0.31	0.09
7	HSBC Small Cap Fund – Growth	1.71	0.67	6.34	-0.15	0.31	0.12
8	Franklin India Smaller Companies Fund – Growth	1.65	0.62	6.03	-0.15	0.31	0.16
9	Quant Small Cap Fund – Growth	1.6	0.5	6.65	-0.45	0.3	0.09
10	Canara Robeco Small Cap Fund - Regular Plan – Growth	1.58	0.65	4.2	-0.15	0.29	0.09
11	Kotak Emerging Equity Fund – Growth	1.3	0.02	1.13	-1.03	0.22	0.1
12	Axis Midcap Fund – Growth	0.87	0.77	-3.98	-4.11	0.15	-1.48
13	Nippon India Growth Fund – Growth	1.39	1.05	2.41	8.76	0.23	0.09
14	SBI Magnum Midcap Fund - Regular Plan – Growth	1.38	0.63	2.83	-0.03	0.24	0.09
15	DSP Midcap Fund - Regular Plan – Growth	0.75	0.6	-6.39	-4.31	0.13	0.09
16	PGIM India Midcap Opportunities Fund – Growth	1.13	0.01	-1.14	8.76	0.19	0.1
17	UTI Mid Cap Fund – Growth	1.06	0.02	-1.51	-1.14	0.18	0.1
18	Sundaram Mid Cap Fund – Growth	1.13	0.01	-1.55	-0.65	0.19	0.09
19	Franklin India Prima Fund – Growth	0.93	0.75	-3.61	-0.27	0.16	0.28
20	HSBC Mid Cap Fund - Regular Plan – Growth	1.07	0.98	-1.91	-1.15	0.18	-0.03
21	ICICI Prudential Bluechip Fund – Growth	0.98	0.94	4.3	-0.25	0.14	0.07
22	Axis Bluechip Fund – Growth	0.29	0.94	-5.93	-1.07	0.04	0.1
23	HDFC Top 100 Fund – Growth	1.01	0.67	5.14	-0.74	0.15	0.1
24	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan – Growth	0.76	0.68	1.34	-0.28	0.11	0.09
25	Canara Robeco Bluechip Equity Fund - Regular Plan – Growth	0.62	0.05	-1.72	2.14	0.09	0.12
26	Franklin India Bluechip Fund – Growth	0.65	0.02	1.29	-0.01	0.1	0.1
27	DSP Top 100 Equity Fund - Regular Plan – Growth	0.66	0.65	-0.66	-2.58	0.1	0.09
28	HSBC Large Cap Fund – Growth	0.59	0.83	-0.99	-1.16	0.09	0.1
29	Baroda BNP Paribas Large Cap Fund - Regular Plan – Growth	0.68	0.77	0.22	-1.34	0.1	0.1
30	Bandhan Large Cap Fund - Regular Plan – Growth	0.61	0.85	-1.84	-1.06	0.09	0.1

Interpretation

The provided table evaluates the performance of various mutual funds against their benchmarks using three key financial ratios: Sharpe Ratio, Jensen's Alpha, and Treynor's Ratio. Each ratio provides insight into different aspects of fund performance.

Sharpe Ratio

The Sharpe Ratio measures the performance of an investment compared to a risk-free asset, after adjusting for its risk. A higher Sharpe Ratio indicates better risk-adjusted performance. Higher the Sharpe ratio value of the most of the sample equity funds in all three categories (small cap, mid cap and large cap) of equity mutual funds compared to its market index strongly indicates that reward to variability has been superior leading to conclusion that equity MFs have significant superior risk adjusted return compared to its benchmark index. Top performing mutual funds schemes are Aditya Birla Sun Life Small Cap Fund, the Axis Small Cap Fund, Franklin India Smaller Companies Fund, the HDFC Mid-Cap Opportunities Fund and the Nippon India Small Cap Fund.

The analysis indicates that, majority of the selected mutual funds performed well in terms of Sharpe ratio and consistently outperformed the benchmark index throughout the study period.

Jensen Ratio

Jensen's Alpha measures the extent to which a portfolio's realized return deviates from the return predicted by the CAPM, conditional on its exposure to systematic risk. A positive alpha indicates that the portfolio delivers abnormal returns beyond those justified by its beta, implying superior risk-adjusted performance.

In the provided data, Jensen's Alpha provides a mixed view of the funds' performance relative to their benchmarks. Funds like the Axis Small Cap Fund (3.86) and Canara Robeco Small Cap Fund (4.20) exhibit positive Jensen's Alpha, indicating that these funds have exceeded the expected returns given their risk levels. Mid cap funds present varied results. For example, the Franklin India Prima Fund has a Jensen's Alpha of -3.61, indicating underperformance, whereas the Kotak Emerging Equity Fund Mid-Cap Opportunities Fund exhibits a positive Alpha of 1.13, suggesting it has managed to generate returns exceeding the predicted returns given its risk profile. In Large cap funds HDFC Top 100 Fund – Growth exhibits positive alpha of 5.14 reflects effective management and strategic stock selection.

Treynor Ratio

The Treynor Ratio assesses a portfolio's performance by relating the return above the risk-free rate to the amount of market risk undertaken, with risk quantified by the portfolio's beta. This ratio is particularly useful for assessing the performance of mutual funds in relation to their market risk, providing investors with insights into how well the fund compensates for the risk taken. In the provided data the analysis reveals that many funds have effectively managed market risk to achieve higher returns per unit of risk compared to their benchmarks. Small cap funds such as the Nippon India Small Cap Fund exhibit high Treynor's Ratios (0.32), indicating they provide better returns per unit of market risk compared to their benchmarks. SBI Magnum Midcap Fund exhibits a high Treynor's Ratios (0.24) highlights the funds' ability to manage market risk effectively and deliver higher returns. However some large cap funds, like the Axis Bluechip Fund with a Treynor's Ratio of 0.04 compared to the benchmark's 0.10, indicate underperformance in generating returns relative to market risk. This suggests the need for improved risk management strategies in these funds.

Conclusion

The analysis of the performance of equity mutual funds relative to their benchmark indices reveals a diverse landscape of fund performance. While some funds demonstrate strong risk-adjusted returns and effective management, others show significant underperformance, indicating areas for improvement in investment strategies and management practices. By focusing on metrics such as Sharpe Ratio, Jensen's Alpha, and Treynor's Ratio, investors can gain valuable insights into the risk-adjusted performance of funds and make informed investment decisions to optimize their portfolios. These insights are valuable for investors seeking to optimize their portfolios based on the specific characteristics of these investment vehicles, highlighting the need for careful consideration of risk, volatility, and managerial skills when selecting among equity mutual funds.

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