

A Study on Risk-Return Analysis of Mutual Funds at Kotak Mahindra Bank

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Abstract: This study analyzes the risk-return profiles of four Kotak Mahindra mutual fund schemes using Sharpe Ratio, Treynor Ratio, and Beta from 1st December 2024 to 20th January 2025, benchmarked against the NIFTY index. The Kotak Mahindra Midcap Balanced Fund-Growth showed the highest risk-adjusted returns (Sharpe Ratio), while the Prudential Balanced Fund-Growth ranked best by Treynor Ratio. The Blue Chip and Income Funds underperformed with low or negative risk-return metrics. The study highlights the need for informed investment decisions, greater investor awareness, portfolio diversification, and improved fund transparency.

Keywords: Risk-Return Profiles, Sharpe Ratio, Treynor Ratio, Beta, Risk-Adjusted Returns, Informed Investment Decisions, Investor Awareness, Portfolio Diversification, Fund Transparency, Kotak Mahindra Midcap Balanced Fund-Growth, Prudential Balanced Fund-Growth, Kotak Mahindra Blue Chip Fund and Kotak Mahindra Income Fund.

I. Introduction

A mutual fund is a type of investment created from a pool of money from diversified investors intended for investment in securities like stock, bond, money market instruments and more. It's operated by qualified fund managers who invest the fund's money to create income for investors. They offer benefits such as diversification, liquidity, professional management, and reduced risk. In India, mutual funds are regulated by SEBI to ensure transparency and investor protection. Investors purchase units of mutual funds priced at the Net Asset Value (NAV), which fluctuates daily. Mutual funds are classified based on investment objectives, structure, and asset allocation.

- **Equity Funds:** Invest primarily in stocks and are suitable for investors seeking long-term capital appreciation.
- **Debt Funds:** Invest in fixed-income securities like government bonds and corporate debentures, ideal for conservative investors.
- **Hybrid Funds:** Combine equity and debt instruments to balance risk and return.
- **Index Funds:** Track the performance of a market index such as NIFTY or Sensex.
- **ELSS (Equity Linked Saving Schemes):** Tax-saving funds under Section 80C with a lock-in period of 3 years.
- **Sectoral/Thematic Funds:** Focus on specific sectors like IT, Pharma, or Infrastructure.
- **Money Market Funds:** Invest in short-term debt instruments and are highly liquid.

The key advantages of mutual funds include:

Diversification: Reduces the risk of capital loss by spreading investments across different sectors and instruments.

Liquidity: Open-ended funds allow investors to redeem units at any time.

Affordability: Investors can start with small amounts.

Transparency and Regulation: Regular disclosures and SEBI regulations protect investors.

Professional Management: Expert fund managers handle investment decisions on behalf of investors.

Need for The Study:

Mutual funds play a crucial role in mobilizing savings and channeling them into the capital market, influencing the economy and financial intermediation. They enhance market liquidity, reshape banking dynamics, and contribute to India's growing domestic savings.

Scope of The Study:

The study covers mutual fund performance, risk-return analysis, fee impact, fund size, strategies, and investor behavior. It may also include comparisons with other funds, regional trends, and sustainable investing practices.

Objective of Study:

- To analyze the performance of various mutual fund schemes.
- To assess the risk-return relationship in mutual fund investments.
- To examine how fund management fees, influence investor returns.

II. Review of Literature

Chaturvedi (2015) Compared public (SBI, UTI) and private (HDFC, Birla SL) mutual funds (2010–2013). Private sector funds showed better equity returns, while debt funds performed steadily across all schemes.

Ayaluru (2016) Similar to Chaturvedi, this study excluded HDFC and SBI. Found private equity funds outperformed public ones. All debt and hybrid funds generated positive returns and outperformed the market.

Das (2017) Studied MF industry growth (2004–15) with a focus on 2007–15. Evaluated eight fund houses on performance and disclosure practices. Found a potential link between transparency and performance.

Maheshwari (2020) Conducted a comparative evaluation of selected Indian MFs, focusing on financial efficiency and investor concerns.

Eric & Anna Bahati (2023) Studied Tanzanian MFs, concluding that favorable economic conditions and fund growth significantly impact investor returns.

III. Research Methodology

A structured and theoretical analysis of methods used in a specific field, encompassing relevant theories and principles.

Secondary Data Sources:

Collected from websites, brochures, newspapers, company documents, and reference books.

Tools and Techniques Used:

Beta: Fund returns minus risk-free rate.

Standard Deviation: Total return rate divided by number of observations.

Fund Growth: Company returns rate divided by number of observations.

Treynor's Ratio: (Company return – risk-free rate) ÷ Beta.

Sharpe's Ratio: (Company return – risk-free rate) ÷ Standard deviation (Alpha).

Period of Study:

The data used spans from 1st December 2024 to 20th January 2025, covering daily NAV and market index values for selected mutual funds.

Mutual Funds Selected for Data Analysis:

- Kotak Mahindra Midcap Balanced Fund – Growth
- Kotak Mahindra Balanced Growth Fund
- Kotak Mahindra Blue Chip Fund – Growth
- Kotak Mahindra Income Fund – Growth

Key Parameters Used for Analysis:

Sharpe Ratio: Measures the excess return per unit of total risk (standard deviation). A higher Sharpe Ratio indicates better risk-adjusted performance.

Treynor Ratio: Measures the return earned per unit of market risk (beta). It helps evaluate the fund's efficiency in dealing with systematic risk.

Beta: Indicates the volatility of a fund in comparison to the market. A Beta less than 1 implies lower volatility than the market, and vice versa.

Mutual Funds Selected for Analysis (Data Analysis):

- Kotak Mahindra Midcap Balanced Fund - Growth
- Kotak Mahindra Balanced Growth Fund
- Kotak Mahindra Blue Chip Fund - Growth
- Kotak Mahindra Income Fund - Growth

Kotak Mahindra Midcap Balanced Fund – Growth

Sharpe Ratio: Highest among all (4.28), indicating excellent risk-adjusted returns.

Beta: Less than 1, signifying low volatility and effective fund management.

Conclusion: This fund outperformed others in terms of both return and risk control.

Kotak Mahindra Balanced Growth Fund

Treynor Ratio: Highest (1.30), which means the fund delivered better returns for each unit of market risk.

Sharpe Ratio: Also, relatively high, confirming balanced performance.

Conclusion: Suitable for investors seeking moderate risk with stable returns

Kotak Mahindra Blue Chip Fund – Growth:

Sharpe & Treynor Ratios: Negative and extremely low, indicating poor performance even with low market risk.

Beta: Close to 0, suggests the fund is not responsive to market changes.

Conclusion: Underperformed in both total and market-related risk perspectives.

Kotak Mahindra Income Fund – Growth

Sharpe Ratio: Negative, pointing toward returns below the risk-free rate.

Beta: Low, reflecting minimal market exposure.

Table-1 compares fund NAVs against the Nifty benchmark.

Date	Market Level (NIFTY)	Kotak midcap Balanced Fund-Growth	Kotak prudential Balanced - Growth	Kotak Mahindra Blue Chip Fund-Growth	Kotak Mahindra Income Fund-Growth
20/01/2025	7401.9	1348.58	72.13	42.76	13.71
19/01/2025	7461.37	1352.55	75.07	41.84	13.68
18/01/2025	7558.42	1351.22	70.21	47.14	13.71
17/01/2025	7498.8	1355.48	78.42	48.68	13.75
14/01/2025	7631.12	1352.35	72.16	42.57	13.77
13/01/2025	7611.14	1351.08	78.38	41.12	13.76
12/01/2025	7498.22	1356.65	77.87	46.08	13.77
11/01/2025	7591.41	1362.48	75.54	48.26	13.76
08/01/2025	7689.48	1361.94	78.76	43.15	13.77
07/01/2025	7797.07	1364.45	71.59	44.23	13.75
06/01/2025	7839.08	1342.15	77.38	44.15	13.79
05/01/2025	7956.47	1361.87	74.57	46.17	21.08
04/01/2025	7942.12	1365.47	76.71	45.13	21.22

01/01/2025	7914.19	1361.62	82.63	47.76	21.69
31/12/2024	7957.15	1349.42	81.75	49.87	21.86
30/12/2024	7876.06	1352.76	74.71	43.99	20.7
29/12/2024	7832.04	1363.41	80.32	46.88	20.18
28/12/2024	7867.54	1368.48	83.76	45.86	19.75
23/12/2024	7852.47	1349.64	71.59	47.79	19.64
22/12/2024	7841.09	1361.46	74.49	46.97	20
21/12/2024	7696.04	1344.88	75.71	40.85	20.46
18/12/2024	7705.17	1348.37	76.04	49.87	18.65
17/12/2024	7795.24	1362.47	81.16	47.80	17.75
16/12/2024	7801.34	1346.51	74.02	48.15	21.74
15/12/2024	7688.09	1341.37	72.17	43.74	16.62
14/12/2024	7541.10	1345.29	77.32	43.96	22.04
11/12/2024	7734.41	1343.42	75.14	44.29	16.48
10/12/2024	7622.08	1349.12	76.28	44.47	20.86
09/12/2024	7709.03	1348.76	79.32	43.95	15.25
08/12/2024	7650.9	1347.07	74.47	47.19	21.51
07/12/2024	7834.31	1346.62	82.24	48.17	16.85
04/12/2024	7861.07	1348.27	80.38	49.32	14.47
03/12/2024	7889.4	1345.76	75.29	48.41	14.48
02/12/2024	7981.03	1361.34	73.47	49.07	14.56
01/12/2024	7942.81	1350.18	81.12	47.01	14.59
Total	270998.08	47394.82	2741.78	1574.73	609.52
Average	7742.802286	1354.137714	78.33657143	44.99228571	17.41485714

Average Returns = Sum of all the Returns from 1st Dec 2024 to 20th January 2025

Total no. of days from 1st Dec 2024 to 20th January 2025

Average NAV of Market Level (NIFTY) = 7742.802286

Average NAV of Kotak midcap Balanced Fund Growth =1354.137714

Average NAV of Kotak prudential Balanced Growth = 78.33657143

Average NAV of Kotak Mahindra Blue Chip Fund Growth = 44.99228571

Average NAV of Kotak Mahindra Income Fund Growth = 17.41485714

The Process of Computation of Beta and standard Deviation is presented below:

1. $\beta(\text{Beta}) = \frac{n\sum xy - (\sum x)(\sum y)}{n\sum x^2 - (\sum x)^2}$

$$n\sum x^2 - (\sum x)^2$$

2. σ_i (Standard deviation of returns of Nifty) = $\sqrt{\frac{n\sum y^2 - (\sum y)^2}{N^2}}$

$$N^2$$

3. σ_m (Standard deviation of returns of Kotak Midcap Balanced Fund Growth)

$$= \frac{\sqrt{n \sum y^2 - (\sum y)^2}}{N^2}$$

Table 2: Risk calculations for Kotak Mahindra Midcap Balanced Fund-Growth, benchmarked against NIFTY, were completed for 1st December 2024 to 20th January 2025, using Treynor and Sharpe ratios.

Average return of Market Level (NIFTY) = 7742.802286

Average return of Returns (i) = 20.20

Average return of Kotak Mahindra Midcap Balanced Fund Growth = 1354.137714

Average return of Returns(m) = 0.363

Standard Deviation (SD) of Returns (i) = 11.97

Standard Deviation (SD) of Returns(m) = 0.07

Beta = - 0.007

Table 3: Calculation of the Treynor and Sharpe ratios for the Kotak Mahindra Blue-Chip Fund-Growth from 1st December 2024 to 20th January 2025.

Average return of Market Level (NIFTY) = 7742.802286

Average return of Returns (i) = 20.20

Average return of Kotak Mahindra Midcap Balanced Fund Growth = 44.99228571

Average return of Returns(m) = 0.0008

Standard Deviation (SD) of Returns (i) = 11.97

Standard Deviation i(SD) of Returns(m) = 0.01

Beta = 0.000003

Table 4: Treynor and Sharpe ratio calculation for Kotak Mahindra Income Fund-Growth over 1st December 2024 to 20th January 2025.

Average return of Market Level (NIFTY) = 7742.802286

Average return of Returns (i) = 20.20

Average return of Kotak Mahindra Midcap Balanced Fund Growth = 17.41485714

Average return of Returns(m) = 0.02

Standard Deviation (SD) of Returns (i) = 11.97

Standard Deviation i(SD) of Returns(m) = 0.25

Beta = 0.004

Table 5: Treynor and Sharpe ratio calculation for Kotak Mahindra Prudential Balanced Growth versus NIFTY over 1st December 2024 to 20th January 2025.

Average return of Market Level (NIFTY) = 7742.802286

Average return of Returns (i) = 20.20

Average return of Kotak Mahindra Midcap Balanced Fund Growth = 78.33657143

Average return of Returns(m) = 0.19

Standard Deviation (SD) of Returns (i) = 11.97

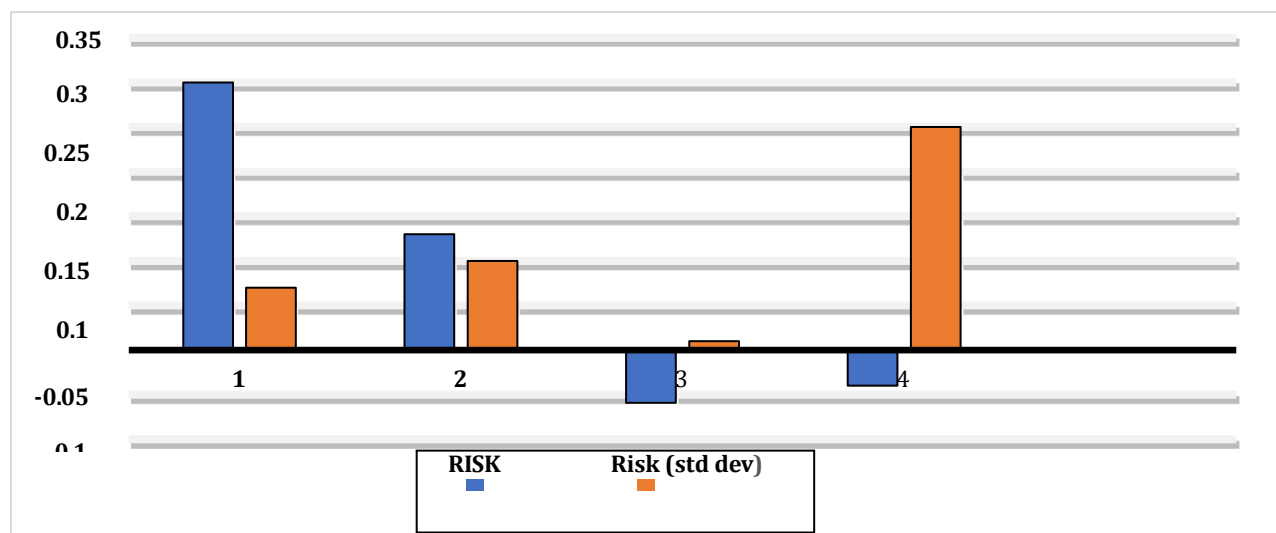
Standard Deviation (SD) of Returns(m) = 0.10

Beta = 0.001

Table 6: Sharpe and Treynor ratio for the selected Kotak Mahindra mutual funds during 1st December 2024 to 20th January 2025.

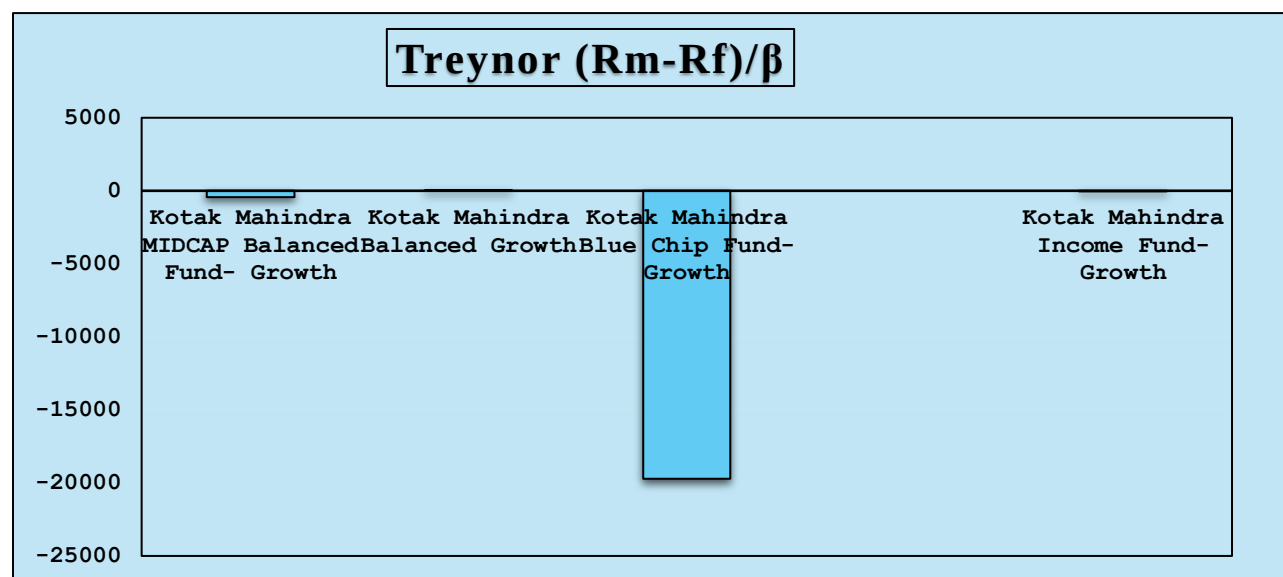
Fund Name	Return (R _m)	Risk (std dev)	Beta (β)	R _f	Sharpe' s	Treynor
					(R _m -R _f)/σ	(R _m -R _f)/β
Kotak Mahindra MIDCAP Balanced Growth - Fund	0.36	0.07	-0.0007	0.06	4.285	-4.285
Kotak Mahindra Balanced Growth – Fund	0.19	0.10	0.001	0.06	1.30	1.30
Kotak Mahindra Blue Chip Growth - Fund	0.0008	0.01	0.000003	0.06	-5.92	-19733.3
Kotak Mahindra Income Growth - Fund	0.02	0.25	0.004	0.06	-0.23	-14.5

The Sharpes Index Pictured Graphical Representation:



Interpretation: Looking at the table and the bar above, we see KOTAK MAHINDRA MIDCAP Fund-Growth and KOTAK MAHINDRA BALANCED GROWTH handing out the best returns.

The Treynors Index Pictured Graphical Representation:



Interpretation: Again, the numbers and the line tell us that KOTAK MAHINDRA BLUE CHIP FUND GROWTH is clearly on bottom.

IV. Findings

Top Risk-Adjusted Performer: Kotak Mahindra Midcap Balanced Fund – Growth had the highest Sharpe Ratio (4.28), showing strong returns per unit of total risk.

Best Market Risk Management: Kotak Mahindra Balanced Growth Fund had the highest Treynor Ratio (1.30), indicating efficient handling of systematic (market) risk.

Underperformers: Blue Chip and Income Funds had poor/negative Sharpe and Treynor Ratios, implying low or negative returns for the risk taken.

Volatility (Beta): All funds had Beta < 1, indicating lower market volatility exposure. Income Fund was especially stable, suiting conservative investors.

Suggestions

Boost Financial Literacy: Educate investors on fund risks, returns, and ratios like Sharpe/Treynor.

Promote Diversification: Spread investments across asset classes to balance risk and return.

Prefer Low-Cost Funds: Guide investors toward direct, no-load options with low expense ratios.

Monitor Performance Regularly: Use tools like SIP calculators and charts to track consistency.

Ensure Fund Transparency: AMCs should disclose key fund details openly and frequently.

Strengthen Regulations: Encourage SEBI to implement investor-friendly reforms and promote innovative schemes.

V. Conclusion:

The study on Risk-Return Analysis of Mutual Funds at Kotak Mahindra Bank emphasizes using risk-adjusted metrics like Sharpe Ratio, Treynor Ratio, and Beta to evaluate fund performance. Among the four funds analyzed, the Midcap Balanced Fund – Growth excelled in total risk (Sharpe), while the Balanced Growth Fund led in market risk (Treynor). Conversely, the Blue-Chip and Income Funds underperformed, highlighting low returns for the risk taken.

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