COMPARISON OF MUTUAL FUNDS THROUGH VARIOUS DESCRIPTIVE STATISTICAL METHODS AND RISK-ADJUSTED PERFORMANCE RATIOS

Ananya Banerjee
Student
Department of Economics
The University of Burdwan

Abstract: This study evaluates the performance of selected mutual funds in India using descriptive statistics and risk-adjusted performance measures. Monthly NAV data for four mutual funds: Mirae Asset Aggressive Hybrid Fund, Shriram Aggressive Hybrid Fund, Nippon India CPSE ETF, and Bandhan Aggressive Hybrid Fund are analyzed for the period April 2021 to March 2025. The analysis examines average returns, volatility, market sensitivity, and diversification using measures such as standard deviation, beta, correlation, and R^2. Risk-adjusted performance is assessed through Sharpe's Ratio, Treynor's Index, Jensen's Alpha, and Fama's Measure, with the risk-free rate proxied by the 182-day Treasury Bill yield. The results reveal notable differences in risk-return profiles across funds. The Nippon India CPSE ETF delivers higher returns and stronger risk-adjusted performance but exhibits greater volatility, while aggressive hybrid funds show relatively stable returns with lower risk. The findings emphasize that mutual fund evaluation requires joint consideration of both return and risk.
Keywords: Mutual Fund Performance; Risk-Adjusted Measures; Sharpe Ratio; Treynor Index; Jensen's Alpha; NAV Analysis; Indian Mutual Funds

INTRODUCTION:

A **mutual fund** is a financial instrument that pools money from multiple investors and invests the collective capital in a diversified portfolio of securities, such as stocks, bonds, money market instruments, or other assets. The fund is managed by professional fund managers, who allocate and manage the assets in accordance with the investment objectives stated in the fund's prospectus. Each investor in a mutual fund owns units, which represent a proportionate share of the fund's holdings.

Mutual funds are regulated investment vehicles that provide investors with access to professionally managed portfolios and are typically characterized by diversification, liquidity, and affordability.

Mutual funds are one of the most popular investment options today, especially for individuals who prefer not to directly invest in the stock market. Through this project, I've tried to analyze and compare the performance of four different mutual funds over a period of four financial years from **1st April 2021 to 31st March 2025**. This analysis considers multiple risk and returns parameters, including statistical measures like **standard deviation, beta, Sharpe's ratio, Treynor's index, Jensen's alpha**, and more.

This study helped me understand how mutual funds are evaluated, how they behave with respect to the market, and how returns can be measured against the level of risk involved. I've used basic formulas and Excel to calculate and interpret these values.

The four mutual funds selected are:

1. **Mirae Asset Aggressive Hybrid Fund - Direct Plan - Growth**

2. **Shriram Aggressive Hybrid Fund - Direct Growth**

3. **Nippon India Mutual Fund CPSE ETF**

4. **Bandhan Aggressive Hybrid Fund - Regular Plan IDCW**

The objective of this project is to analyze and compare the average returns and risk (measured by standard deviation) of each selected mutual fund. It also aims to understand how these funds respond to market movements by calculating beta and R^2. To evaluate their overall performance, the project uses key risk-adjusted return measures like Sharpe's Ratio, Treynor's Index, Jensen's Alpha, and Fama's Measure. Through this analysis, the goal is to build a simple yet clear understanding of the risk-return trade-offs involved in real-world mutual fund investments.

The analysis in this project is based on monthly NAV data collected for each selected mutual fund, from which both monthly and annualized returns were calculated. The performance of these funds has been evaluated using several key financial indicators:

- **Average Return**: Represents the simple mean of periodic returns, used to gauge overall profitability.

$$Average\ Return = \frac{\sum_{i=1}^{n} R_i}{n}$$

- **Standard Deviation (SD)**: Measures the volatility of returns, reflecting the fund's total risk.

$$SD = \sqrt{\frac{\sum_{i=1}^{n}(R_i - \bar{R})^2}{n}}$$

- **Beta**: Indicates how sensitive the mutual fund's returns are to market movements.

$$\beta = \frac{Cov(R_i, \bar{R})}{Var(\bar{R})}$$

- **Sharpe's Ratio**: Calculated as (Return – Risk-Free Rate) / Standard Deviation, showing return per unit of total risk.

$$S_i = \frac{R_p - R_f}{\sigma_p}$$

$$where, R_p - R_f = Risk\ premium$$

- **Treynor's Index**: Given by (Return – Risk-Free Rate) / Beta, representing return per unit of market risk.

$$T_i = \frac{R_p - R_f}{\beta_p}$$

$$If R_p > R_f and \beta_p > 0 \Longrightarrow a\ large\ T\ value\ shows\ good\ performance$$
$$\forall\ investors\ regardless\ of\ their\ risk\ preferences$$

- **Jensen's Alpha**: Assesses excess return generated by the fund above the CAPM benchmark.

$$Assuming\ CAPM\ empirically\ valid:$$
$$E(R_p) = R_f + \beta_p(R_m - R_f)$$

$$\alpha_p = R_p - E(R_p) \begin{array}{l} > 0 \Longrightarrow good \\ < 0 \Longrightarrow bad \end{array}$$

- **Fama's Measure**: Evaluates performance by adjusting excess return based on both systematic and unsystematic risk.

$$F_i = R_p - ((\sigma_p/\sigma_m)(R_m - R_f) + R_f)$$

- **Other Statistical Measures**: Coefficient of Variation (C.V.), Skewness, Kurtosis, Correlation (r), and R^2 were also computed to understand the distribution, stability, and strength of the relationship between the fund returns and the market.

For the purpose of calculating risk-adjusted performance measures such as Sharpe's Ratio, Treynor's Index, and Jensen's Alpha, the risk-free rate was taken as the average yield of the 182-day Treasury Bill. This data was sourced from the Reserve Bank of India (RBI) for the period spanning from 1st April 2021 to 31st March 2025. After compiling and averaging the T-bill yields over this timeframe, the annualized risk-free return was determined to be approximately **0.065199** (or 6.52%).

RESEARCH METHODOLOGY:

Research Design:

The study adopts an **analytical and comparative research design** to evaluate the performance of selected mutual fund schemes in India. The analysis focuses on examining return characteristics, risk exposure, and risk-adjusted performance in order to draw meaningful comparisons across schemes.

Sample Selection:

The sample consists of **four mutual fund schemes**, selected using a **purposive sampling method** from the list of registered mutual funds provided by the **Association of Mutual Funds in India (AMFI)**. AMFI was used as the sampling frame to ensure that only officially registered and regulated mutual fund schemes were considered.
The selection criteria included:

- availability of continuous Net Asset Value (NAV) data for the entire study period, and
- relevance of the schemes within their respective categories for retail investors.

Data Source and Period of Study:

The study is based entirely on **secondary data**. Daily NAV data for the selected mutual fund schemes were obtained from AMFI-listed fund disclosures and official mutual fund websites. The period of study spans **April 2021 to March 2025**, during which consistent NAV observations were available for all selected schemes.

Frequency of Data:

To ensure analytical consistency and reduce the influence of short-term fluctuations, **monthly NAV data** were used. Monthly returns were computed from NAV values and form the basis of all subsequent analyses.

Variables and Measures:

Return Measurement

- **Average Return**: Computed as the arithmetic mean of periodic returns to assess overall fund performance.

Risk Measurement

- **Standard Deviation**: Used to measure total risk by capturing the variability in fund returns.
- **Beta**: Estimated to measure systematic risk and the sensitivity of fund returns to market movements.

Risk-Adjusted Performance Measures:

The performance of the selected mutual funds was evaluated using established risk-adjusted measures:

- **Sharpe Ratio**: Measures excess return per unit of total risk.
- **Treynor Index**: Measures excess return per unit of systematic risk.
- **Jensen's Alpha**: Evaluates fund performance relative to expected returns predicted by the Capital Asset Pricing Model (CAPM).
- **Fama's Measure**: Used to assess performance after accounting for both systematic and unsystematic risk components.

Additional descriptive statistics such as coefficient of variation, skewness, kurtosis, correlation, and R^2 were also computed to better understand the distribution and stability of fund returns.

Benchmark and Risk-free Rate:

Market returns were computed using a suitable **broad market index** as a benchmark. The **risk-free rate** was proxied by the average yield on the **182-day Treasury Bill**, obtained from Reserve Bank of India publications for the study period.

Tools and Techniques

All computations were carried out using standard statistical techniques. Data processing and analysis were performed using spreadsheet-based tools to ensure transparency, simplicity, and replicability of results.

Scope and Limitations:

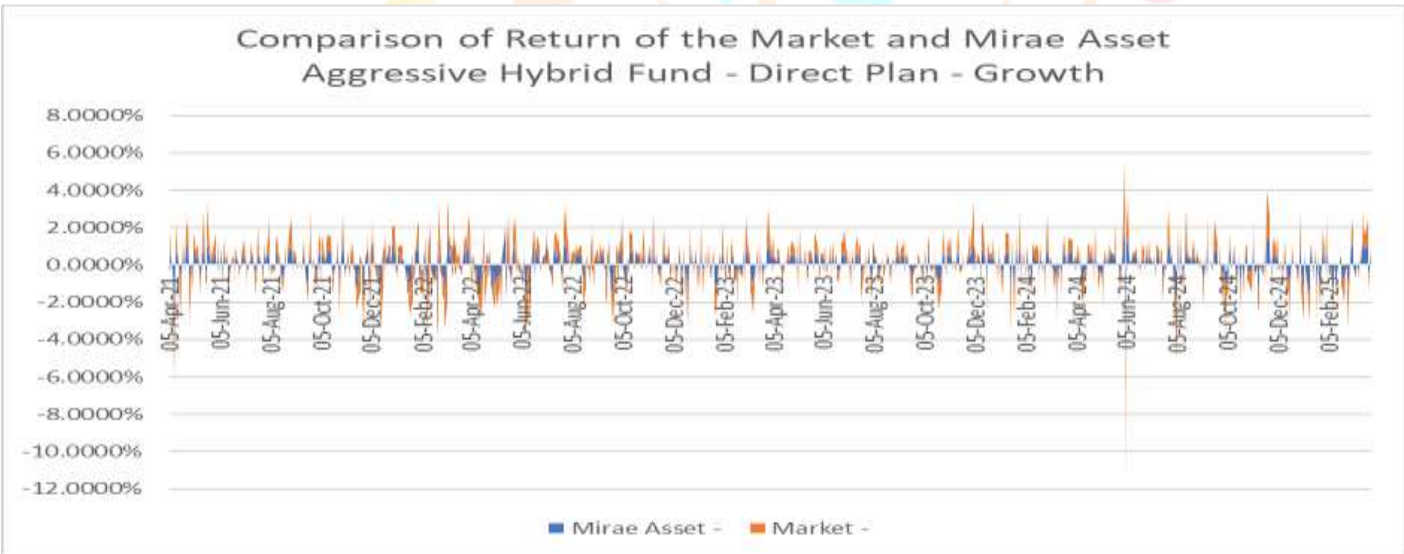
The scope of the study is limited to a small sample of mutual fund schemes selected from the AMFI database and a specific time period. The analysis relies solely on secondary data and does not incorporate factors such as expense ratios, portfolio turnover, fund manager characteristics, or macroeconomic shocks. The findings are therefore indicative rather than generalizable to the entire mutual fund industry.

ANALYSIS:

To understand how mutual funds perform under different market conditions, we begin by analyzing the **performance of four selected mutual funds** using a combination of graphical and statistical tools. The analysis aims to assess both the **return potential** and the **risk profile** of each fund over the period from **April 2021 to March 2025**.

Graphical Illustrations:

We start by looking at the **graphical illustrations** of their daily and monthly returns to visually capture the volatility and trends over time. These charts help us observe how each fund responds to market movements and whether their behavior aligns with the expected characteristics of their category. This graphical insight lays the foundation for deeper evaluation using quantitative performance metrics in the later sections.



Graph 1: Return of Mirae Asset Aggressive Hybrid Fund (Direct Plan – Growth)

The graph displays the daily returns of the Mirae Asset Aggressive Hybrid Fund (Direct Plan – Growth) over the period from April 2021 to March 2025, capturing the fund's short-term return volatility and broader trends.

In the initial years, particularly 2021 and 2022, the fund exhibits moderate daily volatility, with returns generally moving within a range of +1% to -2%. These movements reflect the typical fluctuations of a hybrid fund in a recovering post-pandemic market, with no extreme deviations during this time.

As we transition into 2023 and early 2024, the return pattern remains broadly similar, although intermittent spikes are noticeable, suggesting occasional market movements or rebalancing events within the portfolio. However, it is in mid-2024 (around June) that the most prominent outliers occur:

- A positive return spike slightly above 2%,
- And a sharp negative return falling just beyond -4%.

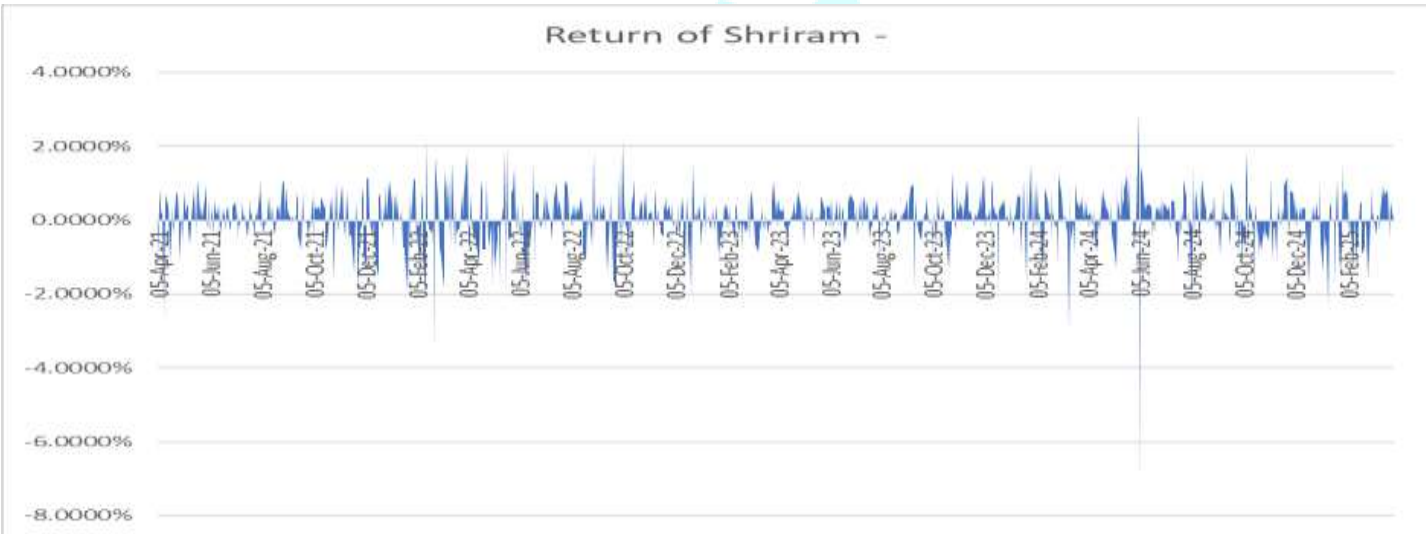
These are the most extreme daily returns observed across the entire four-year period. Such volatility may have been driven by specific macro events, policy announcements, or abrupt market reactions affecting equity and debt components differently.

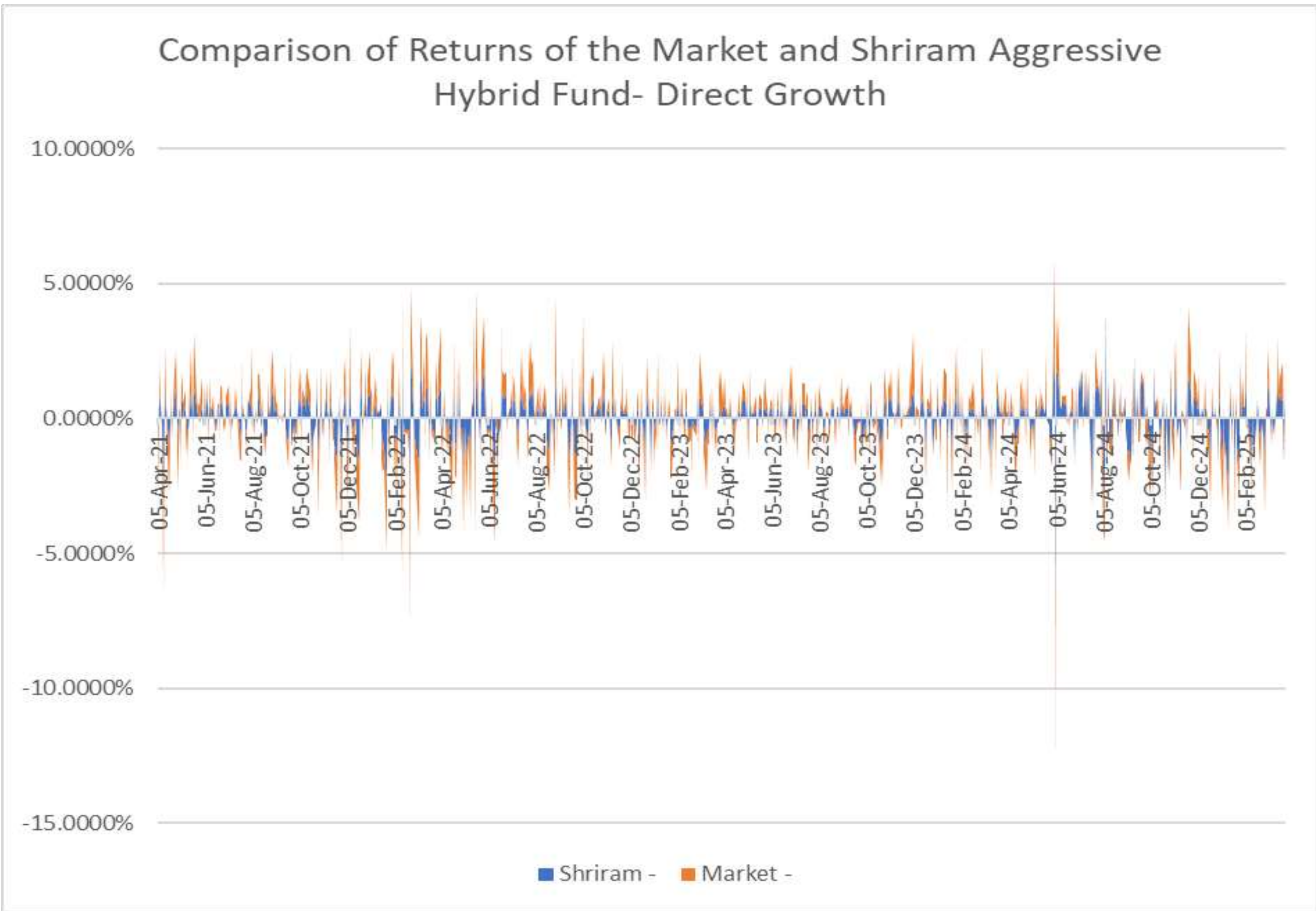
Following this turbulent period, the returns seem to normalize again towards the end of 2024 and into early 2025, with fewer large spikes and a tighter clustering around the zero-return axis — suggesting more stable market conditions or conservative portfolio adjustments.

In summary, while daily returns predominantly hover near zero (as expected), the fund did experience notable outliers in mid-2024, reflecting heightened short-term risk. This underscores the importance of active risk management in hybrid funds, even though they aim to balance growth and stability.

Graph 2: Comparison of Returns - Mirae Asset Fund v/s Market

The second chart offers a side-by-side view of the Mirae Asset fund returns (blue line) and the overall market performance (orange line). It is evident from the chart that while the mutual fund generally mirrors the direction of the market, its volatility is comparatively lower. The market line exhibits more dramatic peaks and troughs, reflecting the inherent risk of full equity exposure. In contrast, the Mirae Asset fund displays smoother fluctuations, cushioning both gains and losses. This behavior aligns with the nature of aggressive hybrid funds, which balance equity exposure with debt instruments to moderate overall risk. As such, while the fund may slightly underperform in bullish phases, it tends to offer better downside protection during bearish spells. This makes it a prudent choice for investors looking for balanced growth with reduced volatility over the long term.





Graph 1: Return of Shriram Aggressive Hybrid Fund - Direct Growth

The first chart illustrates the daily returns of the Shriram Aggressive Hybrid Fund – Direct Growth over the four-year period from April 2021 to March 2025. The return distribution appears to fluctuate closely around the zero line, with frequent short spikes both in the positive and negative directions. While the majority of returns remain within ±2%, there are several noticeable outliers, with a few days experiencing extreme negative returns close to -6%, especially around mid-2022 and mid-2024. The general volatility appears higher in the earlier part of the period, particularly around 2022, followed by a relatively more compressed return distribution in later years. This may indicate a phase of adjustment or rebalancing in the fund's portfolio. The persistence of mild fluctuations around the zero mark suggests a balanced risk approach typical of hybrid funds, but the sporadic sharp drawdowns highlight exposure to some equity-related risk.

Graph 2: Comparison of Returns - Shriram Fund v/s Market

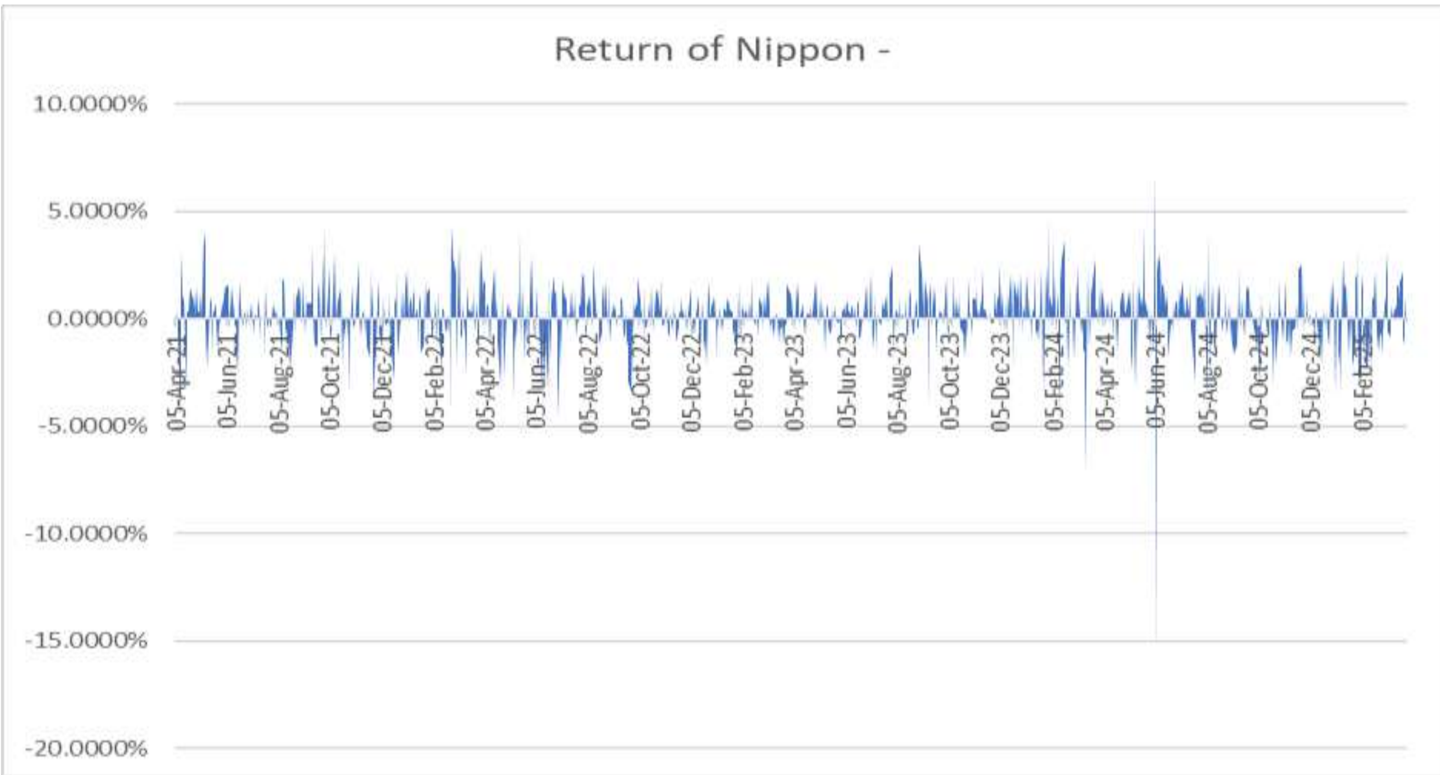
This graph illustrates a daily return comparison between the Shriram Aggressive Hybrid Fund – Direct Growth Plan (blue line) and the market (orange line) from April 2021 to March 2025. The Y-axis shows daily percentage returns, ranging from about -15% to +10%, while the X-axis represents the timeline over four years.

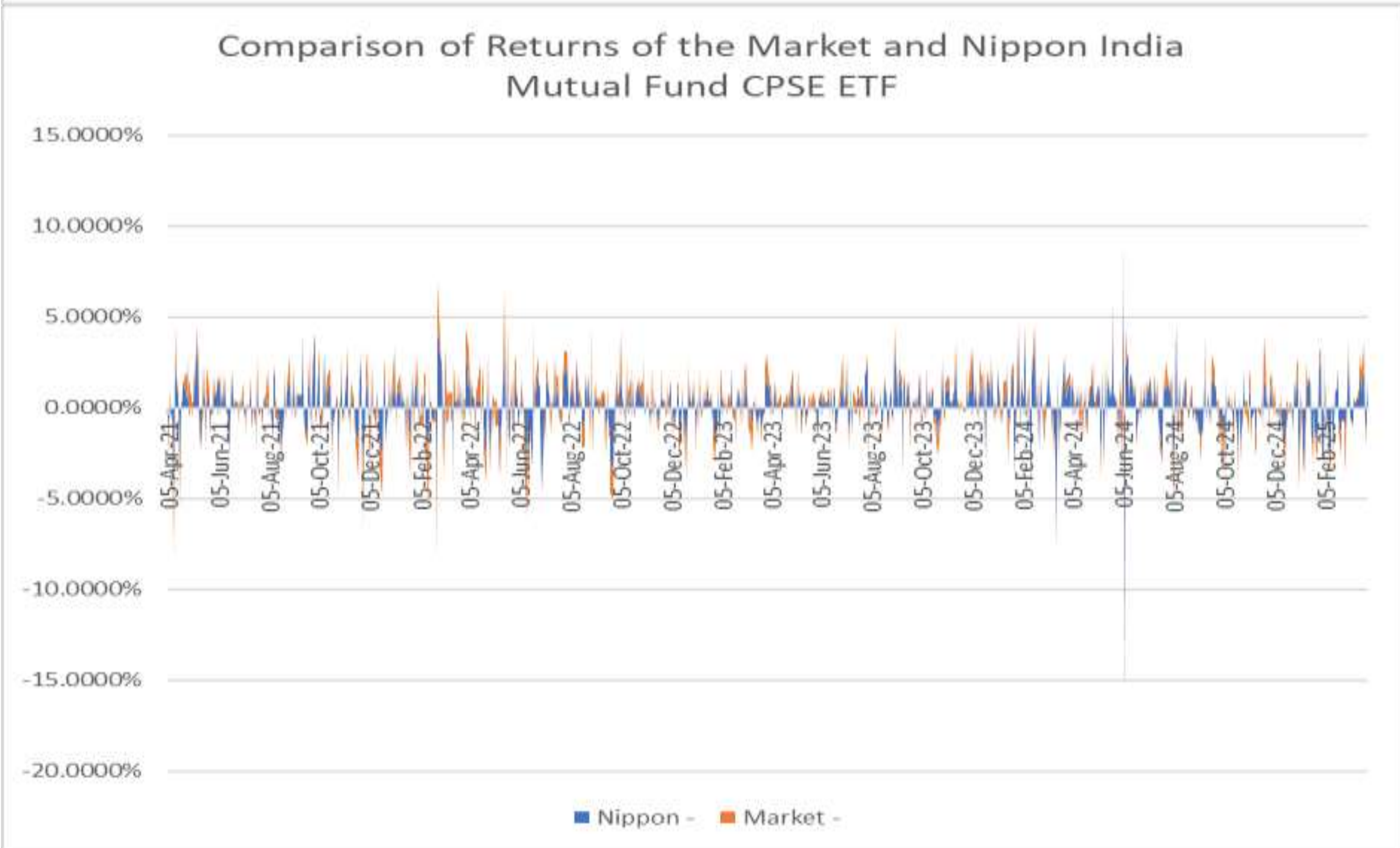
The orange line (market returns) consistently shows higher volatility than the blue line (Shriram fund), confirming that the market is subject to sharper daily fluctuations. This is expected, as the market typically comprises pure equity instruments, whereas an aggressive hybrid fund has a mix of equity and debt, which cushions extreme market movements.

The Shriram fund mirrors the general direction of the market, meaning it tends to rise when the market rises and fall when the market falls. However, its daily return spikes are much narrower, both on the upside and downside. This behavior aligns with the fund's goal of providing equity participation with limited risk through debt allocation.

Interestingly, the fund exhibits fewer extreme negative returns (e.g., beyond -5%), while the market line frequently dips lower—especially visible in sharp market events such as mid-2022 and mid-2024. On the upside, market rallies often exceed 5%, which the Shriram fund rarely matches, indicating some opportunity cost in high-growth market phases.

From a risk perspective, the Shriram fund displays a lower standard deviation in returns, making it more suitable for moderately conservative investors. However, some spikes (both positive and negative) in the fund's return line suggest occasional volatility, potentially due to internal portfolio changes or dividend adjustments.





Graph 1: Return of Nippon India CPSE ETF

The first chart shows the daily returns (percentage change) of the Nippon India CPSE ETF mutual fund from April 2021 to March 2025. The vertical axis represents the percentage return, ranging roughly from -20% to +10%, while the horizontal axis covers a timeline of four years.

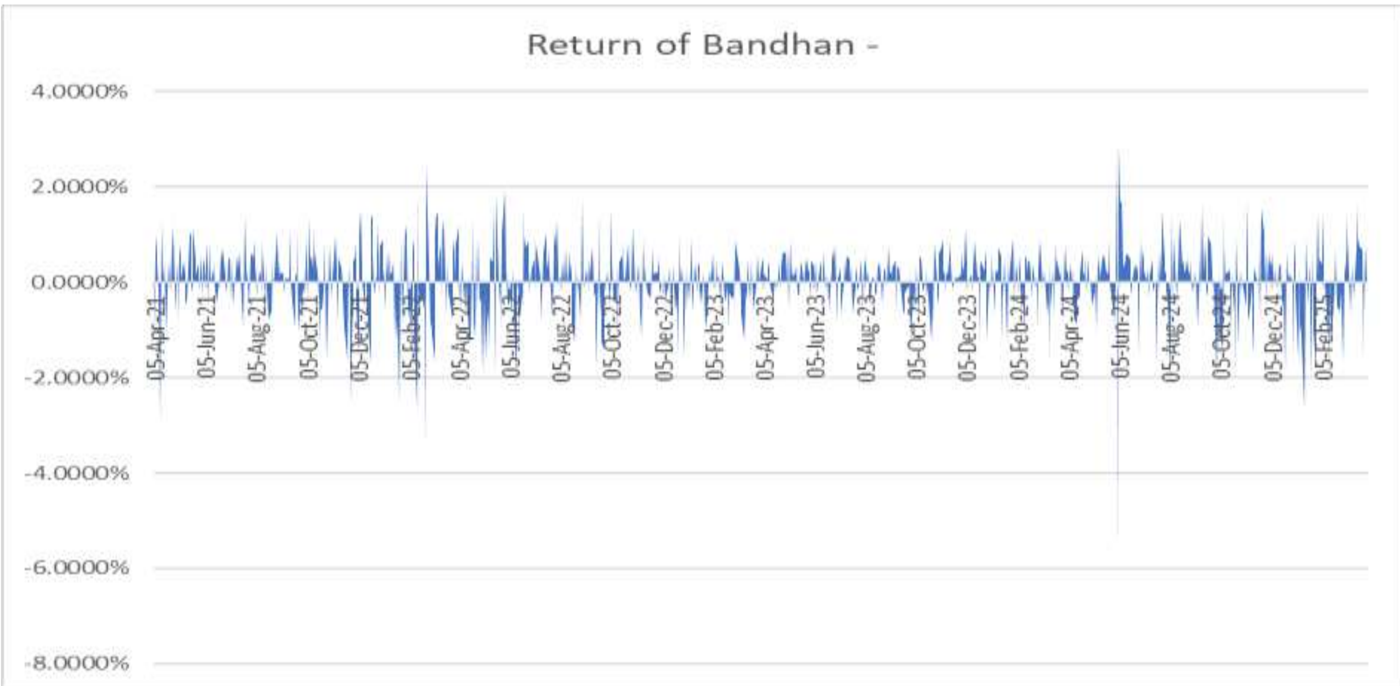
The chart reveals a high degree of volatility in the fund's returns, with most daily changes clustering around 0%, and occasional sharp spikes both upward and downward. There are a few standout drops (notably in early 2024) where returns dip below -15%, suggesting significant market events or rebalancing effects. The volatility seems slightly higher in 2024–2025 compared to earlier years, indicating increased market fluctuations during that period.

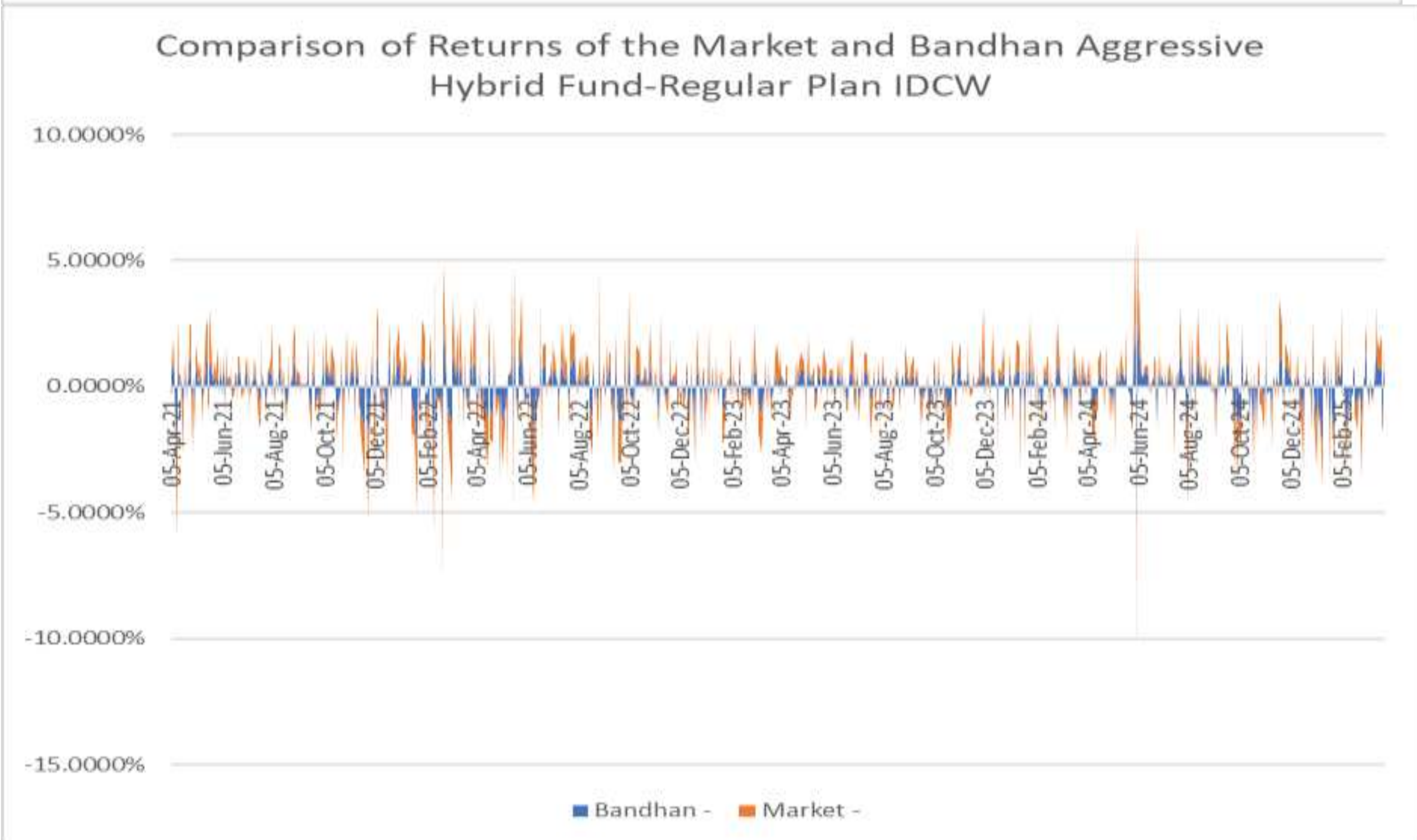
Graph 2: Comparison of Returns - Nippon Fund v/s Market

The second graph overlays the daily returns of the broader market (in orange) with the Nippon India CPSE ETF (in blue) over the same time period. This comparative analysis provides insight into how closely the mutual fund tracks the broader market and how it responds to market movements.

From the visual pattern, we observe a generally strong correlation between the fund and the market: peaks and troughs often occur on the same dates, though the magnitude of movement sometimes differs. For instance, during certain market drops, the Nippon ETF appears to exhibit more intense negative returns, reflecting its concentrated exposure to select public sector enterprises (as opposed to a more diversified market index). This results in higher volatility and sharper movements, both upward and downward.

Notably, the market return line (orange) remains slightly smoother than the fund, indicating broader market stability relative to the more reactive nature of the CPSE ETF. This suggests that while the ETF is generally aligned with the market directionally, it carries higher risk due to its narrower portfolio composition.





Graph 1: Return of Bandhan Aggressive Hybrid Fund

This graph presents the daily return pattern of the **Bandhan Aggressive Hybrid Fund - Regular Plan IDCW** over a four-year span from April 2021 to March 2025. The vertical axis reflects the daily percentage return, ranging from approximately -8% to +4%, while the horizontal axis tracks the timeline.

The return distribution appears mostly concentrated around 0%, which is typical for daily returns, but there are occasional significant dips, particularly in early 2022 and mid-2024, where the fund experienced sharp negative returns of more than -6%. On the positive side, the fund rarely crosses +2% in daily gains, suggesting a relatively conservative upside. The volatility appears somewhat dampened compared to more aggressive equity funds, aligning with the nature of a hybrid fund that mixes debt and equity.

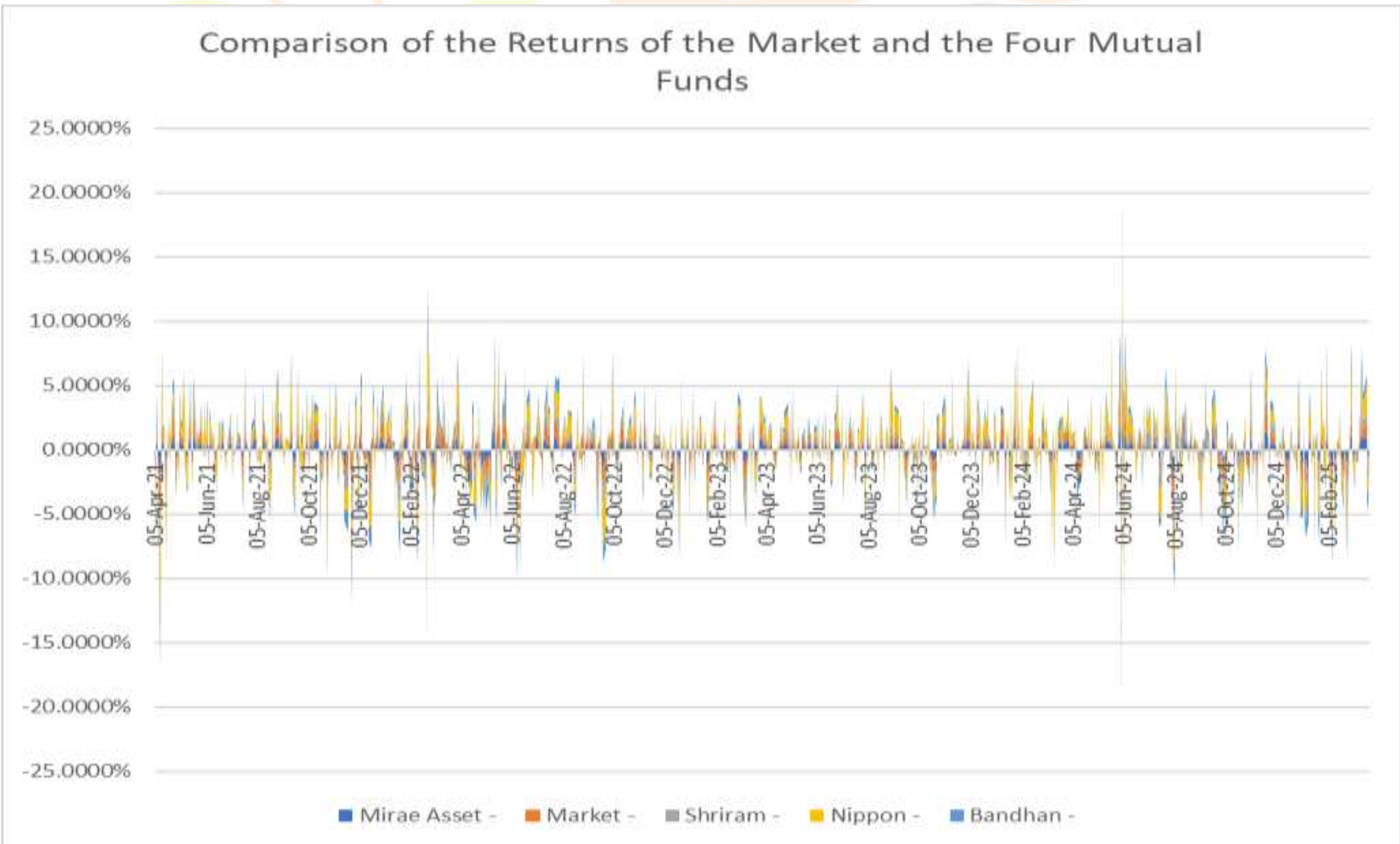
Notably, volatility reduces slightly post-2022 and remains relatively steady throughout 2023–2025, with a few sharp fluctuations. This indicates a potentially more stable fund performance in the later part of the timeline.

Graph 2: Comparison of Returns – Bandhan Fund vs. Market

In this graph, the performance of the Bandhan Aggressive Hybrid Fund (blue) is compared directly with that of the broader market (orange). The market shows sharper and more frequent peaks and troughs than the Bandhan fund, consistent with the expectation that hybrid funds, by design, are less volatile due to debt exposure.

From the visual trend, we can observe that the Bandhan fund generally mirrors the direction of the market, although with lower amplitude. For example, during significant market movements—both rallies and crashes—the Bandhan fund also moves in the same direction but with less intensity. This dampened response confirms that the fund behaves defensively, buffering against market extremes.

There are isolated events, such as mid-2024, where the Bandhan fund exhibits a large negative spike while the market does not show a correspondingly large dip, suggesting a possible fund-specific issue (e.g., rebalancing, dividend payout, or an underlying holding shock). Similarly, the market occasionally shows sharp upward spikes (5%+) that the Bandhan fund does not match, indicating opportunity cost in high-growth periods.



This graph compares the **daily returns** of the **market** and four mutual funds, **Mirae Asset (blue), Shriram (gray), Nippon (orange), and Bandhan (light blue)**, over a period from **April 2021 to March 2025**. The Y-axis shows the daily percentage returns, ranging approximately from **-25% to +25%**, capturing both regular volatility and extreme movements.

At first glance, the **market (orange)** line shows the **highest frequency and amplitude of volatility**, consistent with its full exposure to equity price swings. All four mutual funds exhibit **dampened volatility**, though to varying degrees, reflecting their respective levels of diversification and asset allocation between equity and debt.

Among the funds, **Shriram and Bandhan** appear to have **smoother and less erratic return profiles**, suggesting a more conservative or balanced hybrid approach. Their daily return fluctuations are narrower, rarely exceeding ±5%, and they maintain more stability during sharp market corrections. This implies better downside protection, possibly due to higher debt allocation or active risk management.

Mirae Asset and Nippon, in contrast, exhibit **sharper spikes** in both directions, at times approaching or exceeding the market's returns on the upside and downside. This behavior points to a **more aggressive or equity-heavy stance**, which can be beneficial in bullish markets but increases exposure to drawdowns during downturns.

A key observation is that **no fund consistently outperforms the market in volatility or return magnitude**. Instead, all mutual funds tend to **mirror market direction**, with varying intensity. This is typical of hybrid or diversified funds that aim to deliver moderate returns with lower risk compared to pure equity.

Some extreme events, visible as sharp downward or upward spikes, are present in all lines, though the market line shows the most dramatic movements. The **divergence becomes most evident during market shocks**, where the mutual funds show reduced volatility, highlighting their protective characteristics.

Hence, we can draw the following overall conclusions from the return patterns of the mutual funds and the market between April 2021 and March 2025:

Across this four-year period, all mutual funds: Mirae Asset, Shriram, Nippon CPSE ETF, and Bandhan, exhibit return patterns that largely follow the broader market's direction, though with differing levels of volatility. A clear standout period is mid-2024, where each fund shows heightened fluctuations with extreme daily return outliers on both the positive and negative sides. This points to a significant macroeconomic or market-wide event that temporarily increased risk exposure across the board.

Hybrid funds like Mirae, Shriram, and Bandhan consistently display lower volatility than the market, staying more closely clustered around the zero-return mark. This behavior aligns with their structure, which blends equity and debt components to smooth out returns. Among them, Shriram and Bandhan appear more conservative, while Mirae shows slightly more pronounced responses to market movements.

On the other hand, the Nippon India CPSE ETF demonstrates much higher volatility, frequently experiencing sharper spikes and dips than the broader market itself. This reflects its concentrated sectoral exposure and heavier reliance on equity, making it more sensitive to market swings and policy developments.

Overall, while hybrid funds provide a cushion against full market volatility and are suitable for investors seeking balanced risk and return, they are not completely insulated from systemic shocks—as evidenced during mid-2024. This highlights the importance of diversification, active fund management, and awareness of macro trends when selecting investment vehicles.

DESCRIPTIVE STATISTICS METHODS:

Following the graphical representation of mutual fund performance, we now proceed to examine their **descriptive statistics**. This section provides a foundational understanding of the return characteristics of each mutual fund over the selected period. Key statistical indicators such as **mean return**, **standard deviation**, **skewness**, **kurtosis**, **coefficient of variation**, and **correlation with the market index** are analyzed. These measures offer valuable insights into the **volatility**, **distribution pattern**, and **consistency** of returns, thereby enabling a more informed evaluation of each fund's behavior before delving into risk-adjusted performance metrics.

Table: Descriptive Statistical Analysis of Selected Mutual Funds

Mutual Funds	Average Return	S.D. / Risk	Beta	C.V.	Skewness	Kurtosis	r	R^2
Mirae Asset Aggressive Hybrid Fund - Direct Plan - Growth	0.1137	0.0882	0.4380	0.7757	-0.0056	0.9776	0.5753	0.3310
Shriram Aggressive Hybrid Fund- Direct Growth	0.0941	0.1179	0.6863	1.2532	0.3850	0.9883	0.7420	0.5505
Nippon India Mutual Fund CPSE ETF	0.2544	0.1877	0.5777	0.7377	0.2430	0.1140	0.3556	0.1264
Bandhan Aggressive Hybrid Fund-Regular Plan IDCW	0.0759	0.1023	0.7355	1.3490	-0.2240	0.8750	0.8751	0.7659

INTERPRETATION OF THE TABLE:

1. Average Return

- Nippon CPSE ETF has the highest average return (25.44%), which suggests higher potential profits.
- Bandhan Aggressive Hybrid Fund has the lowest return (7.59%).

2. Standard Deviation (Risk)

- Nippon again has the highest risk (18.77%), indicating high fluctuation.
- Mirae Asset is relatively stable with lower SD (8.82%).

3. Beta

- Bandhan has the highest beta (0.7355), meaning it's more sensitive to market movement.
- Mirae has the lowest beta (0.4380), showing lesser dependence on the market.

4. Coefficient of Variation (C.V.)

- Lower C.V. means better risk-adjusted return.
- Nippon (0.7377) and Mirae (0.7757) are relatively better.
- Bandhan is the worst in this category (1.3490), indicating low return for its risk.

5. Skewness & Kurtosis

- Skewness shows if returns lean towards profit or loss. A negative skew (Bandhan) suggests more downside risk.
- Kurtosis closer to 3 is normal; all funds hover near 1, suggesting low peak risk.

6. Correlation (r) and R^2

- Shriram (r = 0.7420) and Bandhan (r = 0.8751) show a strong positive relation with the market.
- Mirae has low R^2 (0.3310) — so, the market doesn't explain most of its return variability.

RISK-ADJUSTED PERFORMANCE RATIOS:

After understanding the basic statistical properties of the mutual funds, we now move on to evaluating their **risk-adjusted performance** using several key financial metrics. This section includes the computation and analysis of **Sharpe's Ratio**, **Treynor's Index**, **Jensen's Alpha**, and **Fama's Measure**. These ratios go beyond absolute returns and take into account the level of risk undertaken by each fund. By incorporating

both systematic and total risk, these tools provide a more comprehensive picture of how effectively each fund has compensated its investors for the risk borne. This assessment is crucial for comparing the true efficiency of the funds in generating returns relative to their volatility and market exposure.

Table: Risk-Adjusted Performance Ratios of Selected Mutual Funds

Mutual Funds	Sharpe's Ratio	Treynor's Index	Jensen's Alpha	Fama's Measure
Mirae Asset Aggressive Hybrid Fund - Direct Plan - Growth	0.5502	0.1109	0.0283	0.6533
Shriram Aggressive Hybrid Fund- Direct Growth	0.2451	0.0421	0.0444	0.8732
Nippon India Mutual Fund CPSE ETF	1.0081	0.3275	0.0374	1.3896
Bandhan Aggressive Hybrid Fund-Regular Plan IDCW	0.1041	0.0145	0.0476	0.7576

INTERPRETATION OF THE TABLE

1. Sharpe's Ratio

- Nippon CPSE ETF stands out (1.0081), meaning excellent return per unit of total risk.
- Bandhan has the lowest (0.1041), suggesting poor performance when adjusted for total risk.

2. Treynor's Index

- Again, Nippon performs the best (0.3275), offering good return for its market risk.
- Bandhan scores lowest (0.0145), showing very poor market-risk compensation.

3. Jensen's Alpha

- Bandhan surprisingly has a decent alpha (0.0476), suggesting it outperformed expectations even with low raw returns.
- Mirae has a low alpha (0.0283), aligning with its low beta and moderate return.

4. Fama's Measure

- Nippon dominates (1.3896), followed by Shriram and Mirae.
- Fama's Measure supports Sharpe's and Treynor's results — Nippon is the best overall performer.

CONCLUSION:

Based on the analysis of various risk-return measures, the mutual funds under study displayed varied levels of performance and stability. While some funds consistently delivered higher average returns, others showcased better risk-adjusted performance through superior Sharpe and Treynor ratios. Beta and R^2 values helped reveal each fund's sensitivity and alignment with the market, whereas Jensen's Alpha and Fama's Measure offered insights into managerial efficiency and risk diversification. Overall, the comparison highlights that no single fund excels across all parameters — emphasizing the importance of evaluating both return potential and underlying risk before making investment decisions. This study also reinforces the practical relevance of financial metrics in assessing mutual fund performance beyond just past returns.

Ranking of Funds (Overall)

Mutual Fund	**Overall Rank**
Nippon India CPSE ETF	1st
Mirae Asset Hybrid Fund	2nd
Shriram Hybrid Fund	3rd
Bandhan Hybrid Fund	4th

- **Nippon** wins in terms of return and risk-adjusted measures but is volatile.
- **Mirae** is a balanced choice for moderate risk-takers.
- **Bandhan**, despite good market alignment, **underperforms in return**.