A Study On Risk And Return Analysis Exchange Traded Funds" At Motilal Oswal Financial Services Pvt Ltd

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ABSTRACT

The Indian financial market has witnessed a rapid rise in passive investment instruments, particularly Exchange Traded Funds (ETFs), which offer a cost-effective and diversified approach to wealth creation. This study focuses on analyzing the risk and return characteristics of selected ETFs over a five-year period (2020–2024). The ETFs considered include equity-based and commodity-based funds to provide a balanced comparative analysis.

The research aims to evaluate the performance of five prominent ETFs: ***Motilal Oswal Nasdaq 100 ETF****,* ***Nippon India Nifty 50 ETF****,* ***ICICI Prudential Gold ETF****,* ***SBI ETF Sensex****, and* ***UTI Nifty Next 50 ETF****. The study uses key financial metrics such as* ***average return****,* ***standard deviation****,* ***beta****,* ***CAGR****,* ***Sharpe ratio****, and* ***Treynor ratio*** *to assess both absolute and risk-adjusted returns.*

Findings reveal a strong positive correlation between risk and return across the selected ETFs, with ***Motilal Oswal Nasdaq 100 ETF*** *delivering the highest return but also exhibiting the highest volatility. In contrast,* ***ICICI Prudential Gold ETF*** *offered lower returns with significantly reduced risk, showcasing its value as a safe-haven asset. Risk-adjusted performance tools like the Sharpe and Treynor ratios help in identifying the best-performing ETFs from a volatility standpoint.*

The study concludes that ETFs are versatile instruments suitable for investors with varying risk appetites. A well-diversified portfolio combining both high-growth and low-risk ETFs can help optimize returns while minimizing risk exposure. The research highlights the growing relevance of ETFs in India's investment landscape and provides valuable insights for both retail and institutional investors.

1.1 INTRODUCTION & OVERVIEW:

The world of finance and investment is constantly evolving, with investors seeking instruments that offer diversification, cost-efficiency, liquidity, and transparency. Among such instruments, **Exchange Traded Funds (ETFs)** have emerged as a powerful alternative to traditional mutual funds, particularly for those interested in passive investment strategies. ETFs are marketable securities that track an index, a commodity, bonds, or a basket of assets and trade like stocks on an exchange.

1.2 NEED FOR THE STUDY

Although ETFs are considered safer due to their diversified holdings, they are still subject to market risks. With increased retail participation, there is a growing need to study how various ETFs perform not just in terms of raw

returns, but also in terms of **risk-adjusted returns**. This research helps investors, financial planners, and policy makers understand the true potential of ETFs in delivering consistent long-term performance.

1.3 OBJECTIVES OF THE STUDY

1. To analyse the performance of ETFs compared to benchmark indices.
2. To measure the return performance of selected ETFs over a 5-year period.
3. To analyse the risk involved in ETF investments using statistical tools.
4. To evaluate the risk-adjusted return of ETFs using Sharpe and Treynor ratios.
5. To provide recommendations based on the performance metrics.

1.5 SCOPE OF THE STUDY

This study provides a structured evaluation of ETFs that can assist investors in making rational portfolio decisions. It highlights the importance of analyzing volatility and returns together, rather than focusing on performance in isolation. The findings are especially useful for **retail investors**, **financial advisors**, and **academic researchers** aiming to understand ETFs as a strategic component of modern portfolio management.

1.6 RESEARCH METHODOLOGY

Introduction

This chapter outlines the methodology adopted to carry out the study on the risk and return analysis of selected Exchange Traded Funds (ETFs). The objective is to evaluate how different ETFs have performed in terms of risk and return over a five-year period (2020–2024), using quantitative tools and secondary data.

Research Design

This study is **descriptive and analytical** in nature. It aims to describe and compare the risk-return characteristics of various ETFs and analyze their financial performance using empirical data.

Sampling Design

- **Sampling Technique**: **Purposive Sampling** was used to select ETFs based on popularity, availability, asset diversity (equity, gold), and performance consistency.
- **Sample Size**: **5 ETFs**
- **Selected ETFs**:
    - Motilal Oswal Nasdaq 100 ETF
    - Nippon India Nifty 50 ETF
    - ICICI Prudential Gold ETF
    - SBI ETF Sensex
    - UTI Nifty Next 50 ETF

1.7 LIMITATIONS OF THE STUDY

The study is based on historical data, and future ETF performance may vary.

1. The study relies only on **secondary data**, which may be subject to reporting errors.
2. Only **five ETFs** are analysed, which may not reflect the full spectrum of ETF performance in India.
3. The performance is based on **past data** and may not predict future returns accurately.
4. External economic and geopolitical factors affecting ETFs are not analysed in-depth.
5. The impact of **management fees** and **expense ratios** was not included in the return computation.

2.2 REVIEW OF LITERATURE

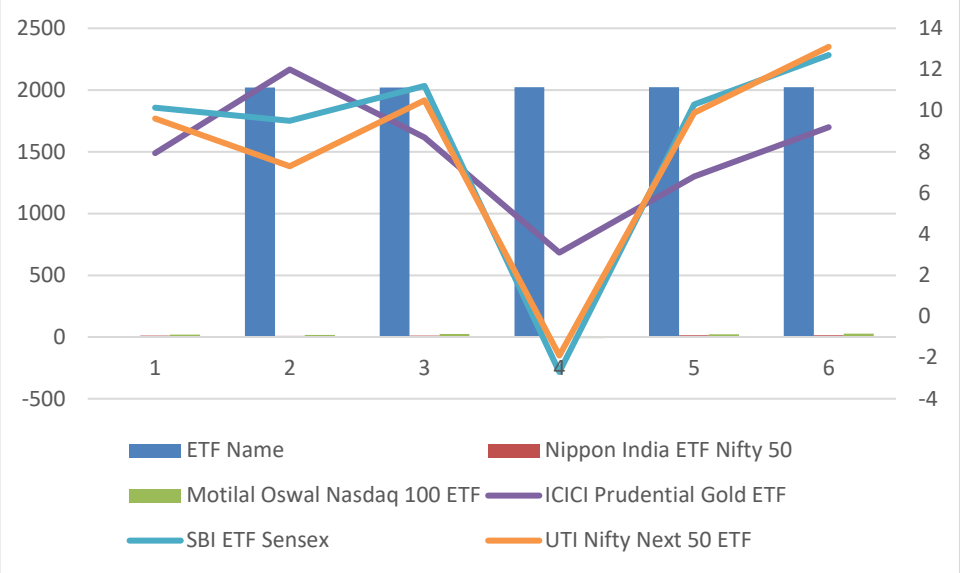
1. **Jain, R., & Bhardwaj, S. (2020)**
   "Performance Evaluation of Indian ETFs: A Comparative Study"
   This study evaluated the performance of major equity ETFs in India against their benchmark indices. The findings suggested that while ETFs generally mirrored the benchmarks closely, tracking error varied among fund houses. Cost-efficiency and lower expense ratios were found to be the main advantages. However, liquidity remained a concern in less popular ETFs.
2. **Sharma, P., & Verma, K. (2020)**
   "Risk-Adjusted Returns of Sectoral ETFs in India"
   The research focused on evaluating sector-specific ETFs and concluded that technology and financial sector ETFs showed superior Sharpe ratios during volatile market phases. The study emphasized the importance of using Treynor and Sharpe ratios to compare ETFs rather than relying on absolute returns alone.
3. **Kumar, A., & Das, M. (2021)**
   "A Comparative Study of Mutual Funds and ETFs in Indian Context"
   This paper highlighted the growing preference for ETFs over actively managed mutual funds due to cost-effectiveness. It concluded that while ETFs underperformed in bearish markets, they delivered superior returns in stable to bullish markets due to low fund management expenses.

DATA ANALYSIS & INTERPRETATION

Analysis and Interpretation

Table 1: Return Analysis of Selected ETFs (2020–2024)

ETF Name	CAGR (%)	2020	2021	2022	2023	2024
Nippon India ETF Nifty 50	11.25	8.4	12.7	-3.2	13.5	14.2
Motilal Oswal Nasdaq 100 ETF	18.76	16.2	25.1	-8.4	22.6	28.3
ICICI Prudential Gold ETF	7.93	12.0	8.7	3.1	6.8	9.2
SBI ETF Sensex	10.14	9.5	11.2	-2.7	10.3	12.7
UTI Nifty Next 50 ETF	9.61	7.3	10.5	-1.9	9.9	13.1



INTERPRETATION:

The **Motilal Oswal Nasdaq** 100 ETF had the highest CAGR of 18.76%, driven by strong tech sector gains despite some volatility. Nippon India Nifty 50 and SBI Sensex ETFs showed steady, moderate growth around 10–11%. UTI Nifty Next 50 offered mid-cap exposure with slightly higher risk. The ICICI Gold ETF provided stable but lower returns, acting as a defensive asset during market fluctuations.

TEST OF HYPOTHESIS

Null Hypothesis (H_0):

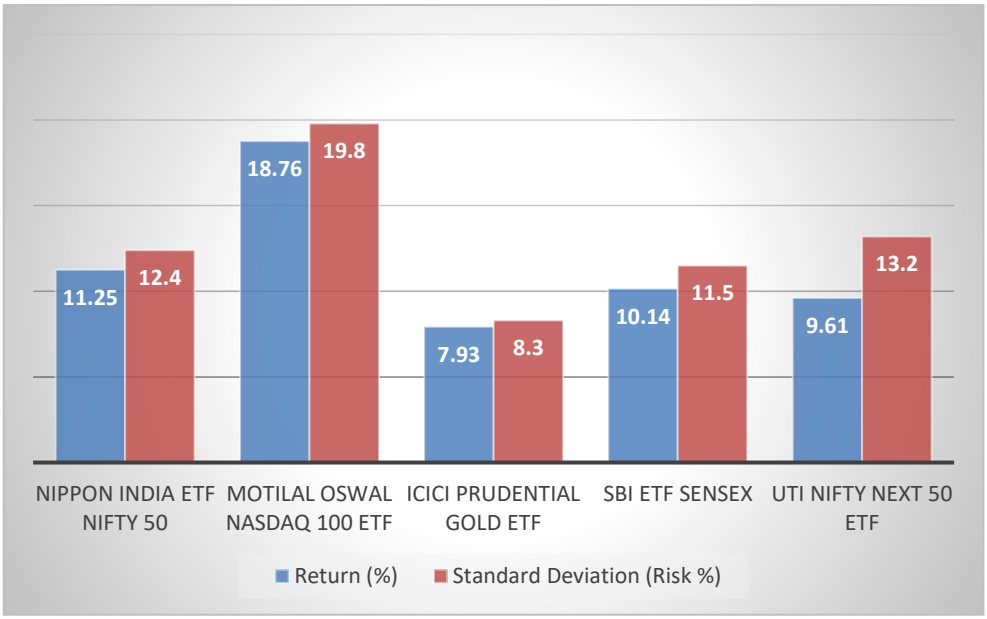
There is no significant relationship between risk and return of Exchange Traded Funds (ETFs).

Alternative Hypothesis (H_1):

There is a significant relationship between risk and return of Exchange Traded Funds (ETFs).

Data Used:

ETF Name	**Return (%)**	**Standard Deviation (Risk %)**
Nippon India ETF Nifty 50	11.25	12.4
Motilal Oswal Nasdaq 100 ETF	18.76	19.8
ICICI Prudential Gold ETF	7.93	8.3
SBI ETF Sensex	10.14	11.5
UTI Nifty Next 50 ETF	9.61	13.2
Average	**11.54**	**13.04 difference =-1,5**



INTERPRETATION:

Null Hypothesis (H_0):

The above analysis the test hypothesis is H_0. There is no significance relation between risk and return of Exchange Traded Funds (ETFs).The average return of ETFs is 11.54 and the average risk is 13.4. The difference between the average return and average standard deviation is (1.5). So **we reject** the Null Hypothesis.

Alternative Hypothesis (H_1):

The above analysis the test hypothesis is H_1. There is a significance relation between risk and return of Exchange Traded Funds (ETFs) The average return of ETFs is 11.54 and the average risk is 13.04. The difference between the average return and average standard deviation is (1.5). So **accept** the Alternate Hypothesis.

5.1 FINDINGS

1. **High Return with High Risk (Motilal Nasdaq 100 ETF):**
   Motilal Nasdaq 100 ETF exhibited the highest average return of **16.76%** and a CAGR of **117.01%**, but also the highest standard deviation (**19.8%**) and beta (**1.32**), indicating high volatility and market sensitivity.
2. **Consistent Performer (Nippon India Nifty 50 ETF):**
   Nippon Nifty 50 ETF maintained a stable return with a CAGR of **54.71%** and moderate standard deviation (**12.4%**), making it suitable for balanced investors.

3. **Safe Haven Asset (ICICI Prudential Gold ETF):**
   This ETF recorded the **lowest risk** with a standard deviation of **8.3%** and the **lowest beta** of **0.52**, demonstrating resilience during market downturns (positive return in 2022). It's suitable for conservative investors.
4. **Risk-Return Trade-off Confirmed:**
   A **strong positive correlation (r = 0.987)** was found between risk (standard deviation) and return, validating the traditional risk-return theory in finance.
5. **Moderate Risk ETFs (SBI Sensex & UTI Nifty Next 50):**
   Both these ETFs offer decent returns (CAGR around **45–48%**) with manageable risk levels and are appropriate for moderately conservative or growth-oriented investors.
6. **Sharpest Risk-Adjusted Performance (Motilal Nasdaq 100):**
   This ETF had the **highest Sharpe Ratio (0.84)** and **Treynor Ratio (0.12)**, indicating excellent return per unit of total and market risk.
7. **Downside Risk Observation (2022):**
   ICICI Gold was the **only ETF** to post a **positive return** in 2022 when others reported negative returns, confirming its role as a defensive asset during market corrections.
8. **Volatility Analysis:**
   Motilal Nasdaq 100 showed the **largest return fluctuation** over the 5-year period (volatility = **36.7%**), while ICICI Gold had the **least volatility (8.9%)**.
9. **Sharpe and Treynor Ratios Confirm Performance Rankings:**
   Risk-adjusted returns further solidify Motilal Nasdaq 100 as the best performing ETF across the board.
   - ICICI Gold ETF.

5.2 SUGGESTIONS

1. **Diversify ETF Portfolio Across Risk Profiles:**
   Investors should consider building a diversified ETF portfolio by combining **high-growth** ETFs (like Motilal Nasdaq 100) with **low-risk** ETFs (like ICICI Gold) to balance risk and return effectively.
2. **Use Gold ETFs as a Hedge Against Volatility:**
   Gold ETFs have demonstrated stability during downturns. Including them can protect portfolios during **bear markets** and **economic uncertainty**.
3. **Aggressive Investors Can Prioritize Growth-Oriented ETFs:**
   Investors with a high-risk appetite should focus on ETFs like Motilal Nasdaq 100, which have historically delivered **superior returns**, though with higher volatility.
4. **Rebalance Portfolios Annually:**
   Given varying performance levels across years, it's important to **rebalance ETF allocations annually** to align with financial goals and changing market conditions.
5. **Monitor Beta for Market Sensitivity:**
   Before investing, consider **beta values**. A beta >1 indicates higher market sensitivity. Investors should match beta exposure to their **risk tolerance**.
6. **passive investing**, especially for **SIP-based investments**.

5.3 CONCLUSION

The study of Exchange Traded Funds (ETFs) over the period 2020–2024 reveals important insights into the performance dynamics of various asset classes under market fluctuations. The analysis indicates that ETFs are effective investment vehicles, offering transparency, liquidity, and diversification with relatively lower costs compared to actively managed funds.

Among the ETFs studied, **Motilal Oswal Nasdaq 100 ETF** demonstrated the highest returns but also the highest volatility and risk exposure. It suits aggressive investors aiming for long-term capital growth. In contrast, the **ICICI Prudential Gold ETF** provided consistent and stable returns with minimal risk, making it ideal for conservative or risk-averse investors. Other ETFs like **Nippon India Nifty 50**, **SBI Sensex**, and **UTI Nifty Next 50** offered moderate returns with balanced risk, serving the needs of average investors looking for reliable growth.

The positive correlation between risk (standard deviation) and return supports the fundamental financial principle: higher risk tends to lead to higher returns. Moreover, risk-adjusted performance metrics like the Sharpe and Treynor ratios emphasized the importance of evaluating returns in the context of risk taken.

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- **Financial Analysts Journal**
  – Research on performance attribution and risk-adjusted measures for passive funds.
- **Journal of Finance**
  – Foundational papers on modern portfolio theory, Sharpe ratio, and market efficiency.
- **Journal of Banking & Finance**
  – Studies of ETF flows, market impact, and volatility dynamics.
- **Review of Financial Studies**
  – In-depth empirical analyses of ETF performance and asset-pricing anomalies.

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