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RISK AND RETURN ANALYSIS OF MUTUAL FUND IN INDIA

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ABSTRACT

India's mutual fund market is expanding quickly thanks to growing foreign involvement, the accumulation of personal financial assets, and the construction of infrastructure. Rising income levels, increased financial literacy, and an increased willingness to take risks among investors are driving this expansion. The entry of private businesses with global experience has accelerated this growth pattern even more. A key component of this phenomenon is the way selected mutual fund schemes evaluate risk and return. Risk affects the possible variance in actual returns and is defined as objective probabilities based on historical experience. On the other hand, returns represent the rise in the value of an investment over time. Analysing the return-on-investment portfolio is a necessary step in evaluating the financial performance of mutual funds. This study uses statistical measures such as Treynor Ratio, Sharpe Ratio, and Jensen's Alpha to evaluate particular Indian mutual funds. The study looks at risk and return characteristics of fifteen different mutual funds in order to shed light on how well they performed. Notably, the Treynor and Jensen's Alpha ratios, which are derived from NAVs, returns, beta, standard deviation, and risk-free returns, as well as the Sharpe ratio, which is derived from standard deviation, risk-free returns, and actual returns, provide thorough evaluations of mutual fund performance.

Key Words: Mutual Funds, Risk, Sharpe, Treynor, Jensen, Returns, Beta

Introduction

This master's thesis uses data from 2018 to 2023 to conduct a thorough investigation of the relationship between risk and return in the mutual fund industry within the changing context of the Indian financial markets. The investigation is based on a thorough econometric analysis that aims to decipher the complex relationship between risk factors and the possibility of financial gain, with a focus on the use of commonly used performance evaluation metrics like the Treynor ratio, Jensen's alpha, and Sharpe ratio.

This study's main goal is to clarify how different risk-adjusted performance measures, such as Jensen's alpha, Treynor and Sharpe ratios, add to a complex understanding of mutual fund performance in the Indian setting. The analysis looks at past fund returns in comparison to market benchmarks and systematic risk factors to determine how well mutual fund managers produce better risk-adjusted returns for investors.

This investigation is supported by a strict methodology that includes advanced statistical tests to evaluate the risk-return profiles of mutual funds that are active in India. Apart from analyzing raw returns, the research also uses the Sharpe and Treynor ratios to assess the risk-adjusted performance of mutual funds. This provides valuable information about how fund managers allocate capital effectively to generate returns that align with the level of risk they take on. In addition, Jensen's alpha is used to evaluate how much mutual fund managers beat or underperform market benchmarks following systematic risk adjustment.

Specific methodology, comprising advanced statistical tests to assess the risk-return profiles of mutual funds operating in India, supports this investigation. In addition to examining raw returns, the study evaluates the risk-adjusted performance of mutual funds using the Treynor and Sharpe ratios. This gives important insights into the efficient capital allocation used by fund managers to produce returns commensurate with the degree of risk they assume. Furthermore, the amount that mutual fund managers outperform or underperform market benchmarks after systematic risk adjustment is assessed using Jensen's alpha.

Review of Literature

Analysis of Risk and Return Relationship of Indian Equity (Dividend) Mutual Fund Schemes by M. Selvam and Bhuvanawari Palanisamy's (2011) analysis of the risk-return relationship in Indian equity mutual fund schemes. The quick expansion of mutual funds has forced

researchers to examine mutual fund performance more closely, accounting for investor expectations, fund manager skill, and portfolio managers' market timing. Investors would be able to evaluate the level of risk assumed in the creation of these funds as well as the amount of returns produced by portfolio managers. This study examined the relationship between Indian Mutual Fund Schemes' risk and return.

Gandhi, Riddhi & Joshi, Mrunal. (2018). Perception and Preference of Investor's for Equity based Mutual Funds. The mutual fund industry has experienced phenomenal growth over the past ten years. The most recent data indicates that this industry has more than Rs. 8.13 thousand billion in assets under management. More than a thousand mutual fund schemes are currently available in the Indian market, all of them promising higher returns than the competition. An attempt has been made to analyze the performance of mutual funds based on equity in this paper. A total of fifteen schemes, two from the public and two from the private sectors, were examined between April 1999 and April 2013 (15 years).

Risk and Return Profile Analysis of Selected Mutual Fund Product of Indian Mutual Fund Industry by T. Bhattacharyya. (2016) Mutual funds are a well-known investment vehicle for risk diversification. The collection of securities that make up a mutual fund's corpus is what makes it fundamental. Experts are hired in order to reduce risk while maintaining a desired level of return. The securities that the corpus is invested in determine a scheme's level of risk. The goal of the current study was to determine the risk involved in 25 different fund houses' diversified equity mutual fund schemes that were chosen.

Risk and Return Analysis of Mutual Fund Industry in India by B Pandow and Khurshid Ahmad Butt. (2017) One of the key categories of financial intermediaries that allows tens of thousands of Indian savers, both large and small, to take part in and profit from the capital market is mutual funds. Reviewing mutual funds' services for their role in money mobilization and market allocation is especially crucial given their involvement in the economic transformation of India. The mutual funds have a lot of potential to grow but to capitalize the potential fully, however, the need is to create and market innovative products and frame distinct marketing strategies.

An Analysis of Risk-Adjusted Return on Tax-Saving Mutual Fund Schemes in India by N. Santhi, K. Gurunathan. (2012) Investors' perceptions and preferences regarding mutual funds based on equity. The mutual fund industry has experienced phenomenal growth over the past ten years. The most recent data indicates that this industry has more than Rs. 8.13 thousand billion in assets under management. More than a thousand mutual fund schemes are currently available in the Indian market, all of them promising higher returns than the competition. There are hundreds of mutual fund schemes, all of which are fiercely competitive, even within equity schemes.

Performance Evaluation of selected Mutual Funds in India by S.Krishnaprabha. (2016) This paper assesses the performance of Indian mutual funds using risk-return analysis, Treynor's ratio, Sharpe's ratio, and a risk-adjusted portfolio performance metric called "Jensen's Alpha," which quantifies the fund manager's predictive capacity and expresses the correlation between mutual fund return and market return. Monthly closing and opening NAVs are the data used. The Association of Mutual Funds in India (AMFI) website is the data source. The study runs from March 2016 to April 2013.

Methodology

- **Research Design**

With a focus on Jensen's Alpha, Treynor ratio, and Sharpe ratio, the research design for evaluating the risk and return of mutual funds in India takes a methodical approach to data collection, performance metric computation, and statistical analysis. First, historical information from reliable sources like SEBI (Securities and Exchange Board of India) databases and financial research platforms will be gathered on mutual fund returns, benchmark returns, and pertinent market indices.

- **Analysis of Sharpe Ratio:**

To Use the Sharpe ratio to assess the risk-adjusted performance of mutual funds in India.

To determine which mutual fund types produce the best risk-adjusted returns, compare the Sharpe ratios of the various fund types.

- **Analysis of Treynor Ratio:**

The Treynor ratio can be used to evaluate the systematic risk-adjusted performance of mutual funds in India.

To Analyze the excess returns that Indian fund managers are producing in relation to their exposure to systematic risk.

- **Jensen's Alpha Analysis:**

To Determine the risk-adjusted excess returns that mutual funds in India produce after taking into consideration their systematic risk by calculating Jensen's alpha.

To Find mutual funds that, after risk adjustment, routinely beat or underperform their benchmark indices.

- **Methods for Data Collection**

The National Stock Exchange (NSE) and the Association of Mutual Funds in India (AMFI) websites provide comprehensive and trustworthy data on a range of performance metrics and fund attributes that are needed for return and risk analysis of mutual funds in India. In particular, researchers will use a methodical approach to obtain pertinent data in order to analyze metrics like beta, standard deviation, Treynor ratio, Jensen's Alpha, Sharpe ratio, and so on.

A. RETURN ANALYSIS

NIFTY LARGE CAP

SBI Blue Chip Fund - Direct Plan - Income Distribution cum Capital Withdrawal Option (IDCW)

YEAR	RETURN %
2019	10.44
2020	16.58
2021	34.26
2022	2.76
2023	19.54

The fund experienced particularly strong performance in 2021, with a return of 34.26%, suggesting successful investment decisions or favorable market conditions during that period. Additionally, the fund rebounded from lower returns in 2022 to achieve a substantial return of 19.54% in 2023, indicating resilience and potential for recovery.

Tata Large Cap Fund -Direct Plan Growth Option

YEAR	RETURN %
2019	5.46
2020	8.17
2021	40.90
2022	2.56
2023	21.52

The Tata Large Cap Fund - Direct Plan Growth Option has demonstrated significant growth and volatility over the five-year period, with notable spikes in returns in certain years, such as a remarkable 40.90% return in 2021, indicating periods of exceptional performance potentially driven by successful investment strategies or favorable market conditions.

Axis Blue-chip Fund - Direct Plan – Growth

YEAR	RETURN %
2019	12.91
2020	20.19
2021	28.92
2022	-1.14
2023	8.32

Over the course of the last five years, the Axis Blue-chip Fund - Direct Plan Growth Option has shown steady gains at different growth rates. The fund has typically performed well, demonstrating its durability and potential for capital appreciation over time, even with a modest negative return in 2022.

ICICI Prudential Blue-chip Fund - Direct Plan – Growth

YEAR	RETURN %
2019	4.25
2020	13.45
2021	35.17
2022	6.72
2023	24.38

Over the last five years, the ICICI Prudential Blue-chip Fund - Direct Plan Growth Option has shown steady, positive growth at varied rates. The fund saw notable growth in 2021, yielding a return of 35.17%, suggesting robust performance that could have been fueled by advantageous market conditions or excellent investment strategy. Over the course of the analysis period, the fund has demonstrated durability and the potential for capital appreciation.

HDFC Top 100 Fund - Growth Option - Direct Plan

YEAR	RETURN %
2019	7.26
2020	2.53
2021	38.52
2022	7.10
2023	27.10

Over the previous five years, the HDFC Top 100 Fund - Growth Option - Direct Plan has shown a fluctuating but favorable growth trend, with large returns surges, especially in 2021 and 2023. Even though 2020 saw a very low return, the fund recovered well in the years that followed, showing resilience and potential for capital growth during the studied time.

NIFTY MID CAP**Motilal Oswal Midcap Fund-Direct Plan-Growth Option**

YEAR	RETURN %
2019	-2.71
2020	10.44
2021	59.65
2022	16.62
2023	36.37

Over the last five years, the Motilal Oswal Midcap Fund - Direct Plan - Growth Option has shown a noteworthy growth trend, with big gains in 2021 and 2023. Although the fund had a negative return in 2019, it recovered well and continued to increase in the following years, demonstrating its ability to appreciate capital and its ability to weather market fluctuations.

Edelweiss Mid Cap Fund - Direct Plan - Growth Option

YEAR	RETURN %
2019	-11.76
2020	28.03
2021	59.05
2022	4.32
2023	34.17

During the last five years, the Edelweiss Mid Cap Fund - Direct Plan - Growth Option has exhibited strong growth, with notable gains in 2021 and 2023. Although the fund had a negative return in 2019, it recovered well and continued to increase in the following years, demonstrating its ability to appreciate capital and its ability to weather market fluctuations.

HDFC Mid-Cap Opportunities Fund - Growth Option - Direct Plan

YEAR	RETURN %
2019	-7.06
2020	17.73
2021	49.68
2022	10.02
2023	40.71

Over the last five years, the HDFC Mid-Cap Opportunities Fund - Growth Option - Direct Plan has seen strong growth, with notable gains in 2021 and 2023. Although the fund had a negative return in 2019, it recovered well and continued to increase in the following years, demonstrating its ability to appreciate capital and its ability to weather market fluctuations.

Tata Mid-Cap Growth Fund - Direct Plan- Growth Option

YEAR	RETURN %
2019	-6.59
2020	25.88
2021	49.19
2022	0.05
2023	37.57

Over the previous five years, the Tata Mid-Cap Growth Fund - Direct Plan - Growth Option has shown excellent growth potential and generated large returns, especially in 2021 and 2023. The fund demonstrated a strong comeback and steady growth in the years that followed, despite a negative return in 2019. This demonstrated the fund's capacity for capital appreciation and its ability to weather market fluctuations.

Quant Mid Cap Fund - Growth Option - Direct Plan

YEAR	RETURN %
2019	-2.64
2020	37.66
2021	60.28
2022	19.24
2023	31.72

Over the previous five years, the Quant Mid Cap Fund - Growth Option - Direct Plan has shown excellent growth potential and generated notable returns, with 2021 being especially noteworthy. The fund demonstrated a strong comeback and steady growth in the years that followed, despite a negative return in 2019. This demonstrated the fund's capacity for capital appreciation and its ability to weather market fluctuations.

NIFTY SMALL CAP**Tata Small Cap Fund-Direct Plan-Growth**

YEAR	RETURN %
2019	6.05
2020	23.66
2021	76.85
2022	10.81
2023	32.57

Over the previous five years, the Tata Small Cap Fund - Direct Plan - Growth has demonstrated great growth potential and produced large returns, especially in 2021. The fund has demonstrated steady development and the possibility for capital appreciation despite returns that have fluctuated, demonstrating its adaptability and capacity to handle market conditions.

Axis Small Cap Fund - Direct Plan – Growth

YEAR	RETURN %
2019	10.51
2020	24.54
2021	60.71
2022	6.92
2023	32.02

Over the previous five years, the Axis Small Cap Fund - Direct Plan - Growth has shown strong growth and high returns, with 2021 being especially noteworthy. The fund has continuously produced outstanding performance despite return swings, demonstrating its ability for capital appreciation and tenacity in navigating market situations.

HDFC Small Cap Fund - Growth Option

YEAR	RETURN %
2019	-6.63
2020	3.26
2021	68.03
2022	5.09
2023	41.37

Over the last five years, the HDFC Small Cap Fund - Growth Option has had a strong track record of performance, with noteworthy returns in 2021 and 2023. The fund showed resilience and steady growth in the years that followed, despite a negative return in 2019, underscoring its capacity for capital development and adeptness at managing market swings.

IDBI Small Cap Fund - Growth Direct

YEAR	RETURN %
2019	-13.17
2020	13.50
2021	66.32
2022	12.27
2023	6.60

Over the last five years, the IDBI Small Cap Fund - Growth Direct has demonstrated a noteworthy track record of substantial gains, with 2021 being especially noteworthy. The fund demonstrated a significant rebound and steady growth in the years that followed, despite a negative return in 2019. This demonstrated the fund's capacity for capital appreciation and its adaptability to changing market conditions.

ICICI Prudential Small cap Fund - Direct Plan – Growth

YEAR	RETURN %
2019	-13.91
2020	23.19
2021	70.31
2022	5.21
2023	36.08

Over the previous five years, the ICICI Prudential Small Cap Fund - Direct Plan - Growth has shown strong growth potential and produced outstanding returns, with 2021 being especially noteworthy. The fund demonstrated a strong comeback and steady growth in the years that followed, despite a negative return in 2019. This demonstrated the fund's capacity for capital appreciation and its adaptability to changing market conditions.

B. RISK RATIO

NIFTY LARGE CAP

FUND NAME	BETA	JENSEN'S ALPHA	SHARPE RATIO	TREYNOR RATIO
SBI Blue Chip Fund - Direct Plan - Income Distribution cum Capital Withdrawal Option (IDCW)	1.17	-1.90 %	0.011	12.24 %
Tata Large Cap Fund -Direct Plan Growth Option	1.43	-4.29 %	0.99	10.02 %
Axis Blue-chip Fund - Direct Plan - Growth	0.82	2.24 %	0.01	15.11 %
ICICI Prudential Blue-chip Fund - Direct Plan - Growth	1.17	0.30 %	0.012	13.09 %
HDFC Top 100 Fund - Growth Option - Direct Plan	1.31	-1.88 %	0.115	11.50 %

NIFTY MID CAP

FUND NAME	BETA	JENSEN'S ALPHA	SHARPE RATIO	TREYNOR RATIO
Motilal Oswal Midcap Fund-Direct Plan-Growth Option	0.95	2.35 %	0.009	23.72
Edelweiss Mid Cap Fund - Direct Plan - Growth Option	1.14	-0.76 %	0.19	18.73 %
HDFC Mid-Cap Opportunities Fund - Growth Option - Direct Plan	1.01	-0.76 %	0.009	20.56 %
Tata Mid Cap Growth Fund - Direct Plan-Growth Option	1.05	-2.70 %	0.0083	18.80 %
Quant Mid Cap Fund - Growth Option - Direct Plan	0.85	9.82 %	0.012	32.64

NIFTY SMALL CAP

FUND NAME	BETA	JENSEN'S ALPHA	SHARPE RATIO	TREYNOR RATIO
Tata Small Cap Fund-Direct Plan-Growth	0.68	15.20 %	0.0101	41.77 %
Axis Small Cap Fund - Direct Plan - Growth	0.56	14.85 %	0.012	45.89 %
HDFC Small Cap Fund - Growth Option	0.81	4.75 %	0.007	25.67 %
IDBI Small Cap Fund - Growth Direct	0.54	5.26 %	0.008	28.79 %
ICICI Prudential Small cap Fund - Direct Plan - Growth	0.83	6.20%	0.0071	27.27 %

Research Outcome and Findings**SBI Blue Chip Fund - Direct Plan - Income Distribution cum Capital Withdrawal Option (IDCW):**

- SBI Blue Chip fund performs Terrific in 2021 , yielding a 34.26% return.
- Resilient comeback from reduced returns in 2022, with a notable 19.54% return in 2023.
- The fund has a positive Sharpe Ratio of 0.011, which suggests a favorable risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
Jensen's Alpha (-1.90%): This negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.
- Treynor Ratio (12.24%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

Tata Large Cap Fund - Direct Plan Growth Option:

- Significant expansion and fluctuation during the course of the five years.
Notable returns surges, especially in 2021 when there was an astounding 40.90% return.
- The fund has a comparatively high Sharpe Ratio of 0.99, which suggests outstanding risk-adjusted returns.
- Jensen's Alpha (-4.29%): The negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.
- Treynor Ratio (10.02%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

Axis Blue-chip Fund - Direct Plan – Growth:

- Consistent increases during the previous five years at varying growth rates.
Despite a slight decline in 2022, the investment is generally showing resilience and growth potential.
- The fund has a positive Sharpe Ratio of 0.01, which suggests a good risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (2.24%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark.
- Treynor Ratio (15.11%): This ratio is positive, meaning that the fund has outperformed the other funds by generating returns that are higher than the risk-free rate per unit of systematic risk.

ICICI Prudential Blue-chip Fund - Direct Plan – Growth:

- Consistently strong growth with noteworthy results in 2021 (35.17% return).
shown resilience and the ability to increase in value during the course of the analysis.
- The fund has a positive Sharpe Ratio of 0.012, which suggests a favorable risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (0.30%): After controlling for risk, the positive alpha indicates that the fund has slightly exceeded its benchmark.
- Treynor Ratio (13.09%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

HDFC Top 100 Fund - Growth Option - Direct Plan:

- A good but inconsistent growth tendency for the preceding five years.
Significant return spikes, particularly in 2021 and 2023, demonstrating capital growth potential and resilience.
- The fund has a comparatively high Sharpe Ratio of 0.115, which suggests robust risk-adjusted returns.
- Jensen's Alpha (-1.88%): The negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.

- Treynor Ratio (11.50%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns higher than the risk-free rate.

NIFTY MID CAP

Motilal Oswal Midcap Fund - Direct Plan - Growth Option:

- Indicated a notable increase pattern during the course of the five years.
- The fund had a negative return in 2019, but it recovered well in the following years, showing notable profits in 2021 and 2023.
- This demonstrates the fund's potential for capital appreciation and shows how resilient and able it is to take advantage of market opportunities.
- The fund has a positive Sharpe Ratio (0.009), which suggests a favorable risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (2.35%): The positive alpha indicates that, after accounting for risk, the fund has performed better than its benchmark.
- Treynor Ratio (23.72%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns that are higher than the risk-free rate.

Edelweiss Mid Cap Fund - Direct Plan - Growth Option:

- Demonstrated robust expansion, with noteworthy increases in 2021 and 2023.
- In spite of a poor performance in 2019, the fund bounced back and grew in the following years, demonstrating its resilience to market ups and downs and yield healthy returns.
- The fund has a comparatively high Sharpe Ratio of 0.19, which suggests outstanding risk-adjusted returns.
- Jensen's Alpha (-0.76%): The negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.
- Treynor Ratio (18.73%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

HDFC Mid-Cap Opportunities Fund - Growth Option - Direct Plan:

- Observed rapid expansion, with notable increases in 2021 and 2023.
- The fund showed tenacity and steady development in the years that followed, despite a poor return in 2019, suggesting its potential for capital growth and its capacity to handle market swings.
- The fund has a positive Sharpe Ratio (0.009), which suggests a favorable risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (-0.76%): The negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.
- Treynor Ratio (20.56%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

Tata Mid-Cap Growth Fund - Direct Plan- Growth Option:

- shown remarkable growth potential and produced substantial profits, particularly in 2021 and 2023.
- The fund demonstrated a robust recovery and consistent growth despite a negative return in 2019, demonstrating its ability to withstand market volatility and capitalize on its potential for capital appreciation.
- The fund has a positive Sharpe Ratio of 0.0083, which suggests that its risk-adjusted return has been positive. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (-2.70%): The negative alpha indicates that, after accounting for risk, the fund has underperformed its benchmark.
- Treynor Ratio (18.80%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns that are higher than the risk-free rate.

Quant Mid Cap Fund - Growth Option - Direct Plan:

- Demonstrated strong growth potential and noteworthy profits, especially in 2021.
- The fund showed robust recovery and consistent growth in the years that followed, notwithstanding a negative return in 2019, demonstrating its durability and potential to generate returns even in the face of market swings.
- The fund has a positive Sharpe Ratio of 0.012, which suggests a favorable risk-adjusted return. When compared to other funds, the ratio is, nevertheless, quite low.
- Jensen's Alpha (9.82%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark by a significant margin.
- Treynor Ratio (32.64%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns that are higher than the risk-free rate.

NIFTY SMALL CAP**Tata Small Cap Fund - Direct Plan - Growth:**

- Fund showed a strong potential for growth and generated substantial profits, particularly in 2021.
- The fund has developed steadily despite return swings, demonstrating its flexibility and potential for capital growth.
- The fund has a positive Sharpe Ratio (0.0101), which suggests a favorable risk-adjusted return.
- Jensen's Alpha (15.20%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark by a significant margin.
- Treynor Ratio (41.77%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns that are higher than the risk-free rate.

Axis Small Cap Fund - Direct Plan – Growth:

- Demonstrated robust expansion and excellent profits; 2021 stands out in particular. Consistently delivered exceptional results in spite of fluctuations in returns, showcasing its capacity for capital growth and perseverance in managing market conditions.
- The fund has a positive Sharpe Ratio of 0.012, which suggests a favorable risk-adjusted return.
- Jensen's Alpha (14.85%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark by a significant margin.
- Treynor Ratio (45.89%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

HDFC Small Cap Fund - Growth Option:

- A solid performance history with notable returns in 2021 and 2023. showed tenacity and consistent expansion in the face of a poor return in 2019, highlighting its ability to develop capital and skill at handling market fluctuations.
- The fund has a positive Sharpe Ratio (0.007), which suggests a favorable risk-adjusted return.
- Jensen's Alpha (4.75%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark.
- Treynor Ratio (25.67%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

IDBI Small Cap Fund - Growth Direct:

- Possesses a great history of significant growth, with 2021 being especially noteworthy. Despite a poor return in 2019 demonstrated a notable comeback and consistent growth, demonstrating its ability to appreciate capital and adjust to shifting market conditions.
- The fund has a positive Sharpe Ratio (0.008), which suggests a favorable risk-adjusted return.
- Jensen's Alpha (5.26%): After accounting for risk, the positive alpha indicates that the fund has exceeded its benchmark.
- Treynor Ratio (28.79%): A positive Treynor Ratio means that, for each unit of systematic risk, the fund has produced returns that are higher than the risk-free rate.

ICICI Prudential Small cap Fund - Direct Plan – Growth:

- Exhibited excellent development potential and yielded exceptional profits; 2021 was particularly noteworthy.
- Despite a negative return in 2019 showed a good recovery and consistent growth, demonstrating its ability to appreciate capital and adjust to shifting market conditions.
- The fund has a positive Sharpe Ratio (0.0071), which suggests a favorable risk-adjusted return.
- Jensen's Alpha (6.20%): After controlling for risk, the positive alpha indicates that the fund has exceeded its benchmark.
- Treynor Ratio (27.27%): The fund has outperformed the risk-free rate per unit of systematic risk, as seen by the positive Treynor Ratio.

CONCLUSION

An essential tool for navigating the complicated details of the investment landscape is a risk and return analysis of mutual funds in India. Through the evaluation of metrics like Treynor Ratio, Jensen's Alpha, Beta, Sharpe Ratio, and risk-adjusted returns, investors can assess the efficacy of fund managers in producing excess returns relative to market benchmarks.

With the aid of these analytical tools, investors can gain a methodical understanding of the correlation between risk and reward, enabling them to make well-informed decisions that are customized to their risk tolerance and financial objectives. It is imperative to acknowledge the inherent limitations of these analyses, such as the limitations posed by data availability, survivorship bias, and the impact of investor behavior and market

dynamics. In spite of these obstacles, mutual fund risk and return analysis is still a useful resource for Indian investors, enabling them to confidently create diversified portfolios and meet their long-term financial goals.

REFERENCES:

1. <https://www.nseindia.com/products-services/mf-about-mfss>
2. <https://www.amfiindia.com/net-asset-value/nav-history>
3. https://www.etmoney.com/learn/mutual-funds/what-is-a-standard-deviation/#3_Standard_Deviation_Formula
4. <https://in.investing.com/indices/nifty-midcap-150-historical-data>
5. https://mospi.gov.in/sites/default/files/press_release/CPI_PR_12apr23.pdf
6. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1862214
7. https://www.researchgate.net/publication/326058366_Perception_and_Preference_of_Investor%27s_for_Equity_based_Mutual_Funds
8. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2812519
9. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2931438
10. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2181210