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# A Risk-Return Analysis of SBI Mutual Fund

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**Abstract -** The aim of this study is to analyse the financial performance of SBI equity fund using statistical parameters (Standard Deviation, Beta, and Correlation Coefficient) and ratio analysis (Sharpe Ratio, Treynor Ratio). The study collected five years of data from SBI mutual fund house and focused on providing insights into the financial performance of selected mutual fund schemes. The findings of the study suggest that all SBI mutual funds have yielded more returns than bank fixed deposits.. Notably, the SBI Small Cap fund has been identified as the most volatile fund with the highest returns, while the SBI PSU fund has been found to be less volatile but with lower returns. The research findings could help investors understand the financial performance of mutual fund schemes better, enabling them to make informed investment decisions based on their risk profiles

***Key Words*:** Mutual fund, financial performance, risk return analysis

## 1. INTRODUCTION

Mutual funds have become a popular investment option for individuals looking to diversify their portfolios and generate returns. A mutual fund is a collective investment scheme that pools money from multiple investors to invest in a diverse range of securities, such as stocks, bonds, and other assets. The performance of a mutual fund depends on several factors, such as the fund manager's investment strategy, market conditions, and the performance of the underlying assets.

This study aims to conduct a risk-return analysis of SBI Mutual Fund. The study uses statistical parameters such as Standard Deviation, Beta, and Correlation Co-efficient and ratio analysis such as Sharpe Ratio and Treynor Ratio to analyze the financial performance of selected mutual fund schemes. The research data is collected from SBI Mutual Fund house for five years.

The findings of this research work are valuable for investors who wish to make informed decisions while investing in mutual funds. By analyzing the financial performance of mutual fund schemes, investors can better understand the risk-return profile of different mutual fund schemes and make investments that align with their risk appetite. The study also helps understand which mutual fund schemes suit other risk profiles.

The primary objective of this research is to analyze the financial performance of SBI Mutual Fund schemes using statistical parameters and ratio analysis. The study aims to offer valuable insights to investors, helping them make informed investment decisions by understanding the risk-return profile of different mutual fund schemes.

## 2. STATEMENT OF THE PROBLEM

The COVID-19 pandemic has led to a shift in people's mindset towards investment rather than savings. As a result, the study titled "Risk-Return Analysis of SBI Mutual Fund" aims to address the issue of investors facing difficulty in selecting the most suitable mutual fund from the array of options available. The study endeavors to evaluate selected SBI equity mutual funds against a standard index, namely Nifty, and determine the best mutual fund options for investors.

## 3. RELEVANCE AND SCOPE OF STUDY

The study aims to assist investors in making informed investment decisions by analyzing the risk and return factors associated with various open-ended mutual funds.

India's capital market offers various investment options to investors, and mutual funds have emerged as a popular investment tool due to their ability to yield attractive returns. However, with the plethora of mutual funds available in the market, investors face challenges in selecting the most profitable option. Therefore, the study of the performance analysis of mutual funds becomes essential.

The study provide a deep understanding of the performance of SBI equity mutual fund schemes, which are known to generate the highest returns and are sought-after among all categories of mutual funds. Moreover, the study also evaluates the risk and return factors associated with various open-ended mutual funds, which will assist risk-averse investors in selecting investment options that provide stable and low-risk returns.

The study's scope is limited to the analysis of open-ended equity debt growth mutual fund schemes offered by SBI, and it will focus on analyzing the risk and return factors associated with these schemes. So the study will help investors in making informed investment decisions and assist them in selecting the most profitable and returnable investment option. Moreover, the study's findings will also contribute to the existing literature on mutual funds and their performance analysis.

## 4. OBJECTIVES OF THE STUDY

- Conduct a comparative analysis of the risk and return of SBI Mutual Fund to gain insights into their performance.
- Assess the performance of SBI Mutual Fund during the given period regarding returns and risk, and compare it with industry benchmarks.
- Determine if the mutual funds have outperformed the market and identify the factors contributing to their success or lack thereof.

## 5. LITERATURE REVIEW

Several studies have been conducted in India to assess the performance of mutual funds. Jayadev (1996) used monthly returns to evaluate the performance of two growth-oriented mutual funds, Master Gain and Magnum Express. The study used Jensen, Sharpe, and Treynor measures and discovered that Master Gain outperformed Magnum Express on Jensen and Treynor measures. Magnum Express, on the other hand, performed poorly across all three metrics.

Ajay Khorana and Edward Nelling (1997) compared the management and performance characteristics of equity sector funds to those of non-sector equity funds. The research included 147 sector funds from seven industries: finance, health, metals, natural resources, technology, and utilities, as well as a control sample of 983 other domestic equity funds. Sector funds have higher expense ratios, shorter management tenures, smaller betas, and lower R Square values than non-sector equity funds, according to the study. Sector funds outperform non-sector funds in terms of risk-adjusted performance.

Elango (2004) investigated the performance of mutual funds in the private and public sectors in India. According to the study, private sector schemes outperformed public sector schemes in terms of NAV range value, innovative products, and fund deployment. The volatility and variability of public sector funds were low, indicating low consistency. The student 't' test revealed a highly significant difference in the mean NAV of private and public sector funds.

Lakshmi (2007) assessed the performance of India's mutual fund industry in a regulated environment following the implementation of the SEBI (Mutual Funds) Regulations 1996. According to the study, the mutual fund industry has seen mergers, acquisitions, and closures, as well as the entry of many new mutual funds. The amount of money raised increased dramatically, reaching Rs. 10,98,558 crores by the end of March 2006. During the period 1997-2006, funds mobilised by the industry increased by 57%, while AUM increased by 14%. According to Sanjay Kant Khare (2007), investors can purchase stocks or bonds with much lower trading costs through mutual funds and enjoy the benefits of diversification and lower risk. The researcher discovered that with a higher savings rate of 23%, channelling savings into the mutual funds sector has been rapidly growing as retail investors have gradually withdrawn from the primary and secondary markets. Mutual funds must expand into rural areas by offering diversified products, improving corporate governance, and introducing financial planners.

Debasish (2009) investigated the performance of selected mutual fund schemes using risk and return models and measures. The study lasted from April 1996 to March 2005. (nine years). According to the study, Franklin Templeton and UTI mutual funds outperformed Birla Sun Life, HDFC, and LIC mutual funds.

In the Indian mutual fund industry, Bhaskar Biswas (2013) examined the performance of diversified equity fund schemes. He chose the ten best and ten worst performing diversified equity mutual funds over a three-year period (2009-2012). The study employed mathematical and statistical methods such as arithmetic mean, percentage, standard deviation, beta, alpha, and Sharpe ratio. The study concluded that diversified equity funds attempted to invest solely in equities rather than focusing on one or a few sectors.

M.M. Goyal (2015) evaluated the top ten mutual fund schemes' performance. According to the study, all of the schemes provided higher and better average returns than the market. Franklin India Opportunities Fund outperformed the others, with a higher average return and lower risk.

Khurshid Ahmed Butt (2017) discusses the risk and return analysis of selected mutual funds in India, the growth and development of the Indian mutual fund industry, and the challenges that the industry faces. Growth, income, balanced, and tax-saving strategies were chosen for examination. These schemes belonged to 19 fund houses representing all three sectors, namely public, private, and foreign funds. They concluded that, on average, the sample schemes delivered higher returns than the market during the period at a risk that was even lower than the risk of the market portfolio.

## 6. SOURCES OF DATA

Secondary sources of data were used for this study from SBI MF website and NSE India website in order to evaluate the performance of SBI mutual fund from available schemes a list of 10 different schemes has been selected for the study from the data . For ensuring the reliability of the study, split half method is used where the data has been divided into smaller groups and compare the results.

The funds selected for the study are :

- SBI Banking and Financial service fund
- SBI Blue-chip Fund
- SBI Infrastructure Fund
- SBI Small Cap Fund
- SBI Technology Opportunities Fund
- SBI Healthcare Opportunities Fund
- SBI Consumption Opportunities fund
- SBI PSU Direct plan
- SBI magnum Midcap Fund

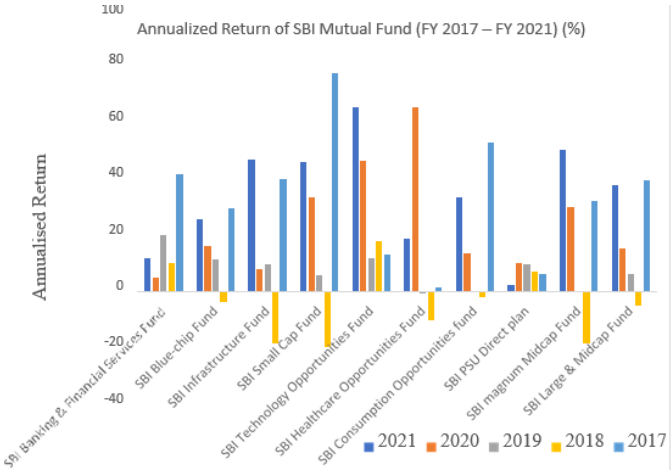
## 7. DATA ANALYSIS AND INTERPRETATION

Annualized return of selected SBI equity mutual funds are calculated to find the outstanding fund in terms of return.

Table 1 Annualized return of selected SBI equity mutual funds

| Fund Name | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|---|---|---|---|---|
| SBI Banking & Financial Services Fund | 11.81 | 4.89 | 19.99 | 10.08 | 41.76 |
| SBI Blue-chip Fund | 25.55 | 16.28 | 11.41 | -3.58 | 29.74 |
| SBI Infrastructure Fund | 46.75 | 7.92 | 9.71 | -18.28 | 40.09 |
| SBI Small Cap Fund | 46.03 | 33.44 | 6.12 | -19.66 | 77.31 |
| SBI Technology Opportunities Fund | 65.55 | 46.62 | 11.89 | 17.88 | 13.44 |

| | | | | | |
|---|---|---|---|---|---|
| SBI Healthcare Opportunities Fund | 19.03 | 65.28 | -0.63 | -9.9 | 1.49 |
| SBI Consumption Opportunities fund | 33.32 | 13.64 | 0.43 | -2.03 | 53.01 |
| SBI PSU Direct plan | 2.53 | 10.36 | 9.8 | 7.28 | 6.29 |
| SBI magnum Midcap Fund | 50.53 | 29.93 | -0.12 | -18.03 | 32.2 |
| SBI Large &Midcap Fund | 38.07 | 15.41 | 6.52 | -4.84 | 39.68 |




Based on the visual representation provided above, it can be observed that in the year 2017, all the funds had performed exceptionally well when compared to the other years. However, in the year 2018, the returns were significantly lower in comparison to the previous years. Additionally, the majority of the funds had reported negative returns in 2018, while the returns in 2017 had exceeded 20%.

Annualized return of Nifty

NIFTY 50 is owned and managed by NSE Indices Limited (formerly known as India Index Services & Products Limited) (NSE Indices). NSE Indices is India's specialized company focused upon the index as a core product.

| Index | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|---|---|---|---|---|
| Nifty | 24.12 | 14.17 | 12.02 | 3.15 | 28.65 |

The year 2018 saw a poor performance of Nifty, with returns of only 3.15%, followed by 2019 (12.02%) and 2020 (14.17%). On the other hand, in 2017 Nifty had a remarkable return of 28.65%, during which all the funds performed exceptionally well.

Table 2Correlation of SBI Mutual fund with Nifty

| Fund Name | Correlation with Nifty |
|---|---|
| SBI Banking & Financial Services Fund | 0.63 |
| SBI Blue-chip Fund | 0.98 |
| SBI Infrastructure Fund | 0.96 |
| SBI Small Cap Fund | 0.97 |
| SBI Technology Opportunities Fund | 0.28 |
| SBI Healthcare Opportunities Fund | 0.13 |
| SBI Consumption Opportunities fund | 0.95 |
| SBI PSU Direct plan | -0.53 |
| SBI magnum Midcap Fund | 0.86 |
| SBI Large & Midcap Fund | 0.98 |

*Calculated value

Based on the table above, it is observed that observe both SBI Blue-chip Fund and SBI Large & Mid Cap Fund have a high correlation with Nifty (0.98 and 0.98, respectively). This implies that they tend to move in sync with the chosen benchmark index, Nifty.

In contrast, SBI PSU Fund has a negative correlation with Nifty (-0.53) due to the underperformance of public sector companies.

BETA OF SBI EQUITY MUTUAL FUND

The beta of an SBI Equity Mutual Fund is a measure of its volatility in relation to the broader market. A beta value greater than 1 indicates that the fund is more volatile than the market, meaning that its returns are likely to be more variable and potentially higher or lower than the market as a whole. On the other hand, if the fund's beta is less than 1, it suggests that the fund's returns are less volatile than the market and are likely to be more stable over time. While higher beta investments tend to be riskier, they also offer the potential for greater returns, while lower beta investments tend to be less risky but may offer lower returns. In summary, the beta of the SBI Equity Mutual Fund is an important measure of its level of risk and potential for returns in relation to the broader market..

Table 3 Beta of SBI equity mutual fund

| Schemes | Beta |
|---|---|
| SBI Banking & Financial Services Fund | 0.9 |
| SBI Blue-chip Fund | 1.27 |
| SBI Infrastructure Fund | 2.52 |
| SBI Small Cap Fund | 3.56 |
| SBI Technology Opportunities Fund | 0.67 |
| SBI Healthcare Opportunities Fund | 0.37 |
| SBI Consumption Opportunities fund | 2.19 |
| SBI PSU Direct plan | -0.16 |
| SBI magnum Midcap Fund | 2.33 |
| SBI Large & Midcap Fund | 1.9 |

*Calculated values

Upon analyzing the figure above, it can be observed that the SBI Small Cap fund has a high beta value of 3.56, indicating that it is more volatile than other funds. Additionally, it has a higher return compared to other funds On the other hand, SBI Technology Opportunities and SBI Consumption Opportunities have relatively lower beta values of 0.90, 0.67, and 0.37, indicating that they are less volatile. Furthermore, the SBI PSU Direct fund has a negative beta value of -0.16, indicating that it is less volatile than other funds.

STANDARD DEVIATION

he standard deviation of a mutual fund can be viewed as a measure of its level of risk or volatility. Specifically, it indicates the extent to which the fund's historical returns have diverged from its expected returns. When the standard deviation is high, it means that the returns have been more widely dispersed and that there is a greater potential for significant gains or losses. On the other hand, a lower standard deviation suggests that the fund's returns have been more stable and less variable over time. In essence, the standard deviation represents the degree to which the fund's returns deviate from their average value over a certain period.

SchemesStandard Deviation (%)

Table 4 SBI Banking & Financial Services Fund

| Schemes | Standard Deviation (%) |
|---|---|
| SBI Banking & Financial Services Fund | 14.5 |
| SBI Blue-chip Fund | 13.08 |
| SBI Infrastructure Fund | 26.45 |
| SBI Small Cap Fund | 37.2 |
| SBI Technology Opportunities Fund | 23.89 |
| SBI Healthcare Opportunities Fund | 29.96 |
| SBI Consumption Opportunities fund | 23.32 |
| SBI PSU Direct plan | 3.14 |
| SBI magnum Midcap Fund | 24.6 |
| SBI Large & Midcap Fund | 19.55 |

*Calculated values

Looking at the figure above, it is evident that SBI Small cap fund has the highest standard deviation of 37.20, indicating a high level of risk involved. Following it closely are SBI Healthcare and SBI Infrastructure fund, which also have a high standard deviation.

On the other hand, SBI PSU fund has the least standard deviation of 3.14, suggesting that it has low risk among the selected funds.

Table 5 : Sharpe Ratio of Selected Mutual Fund

| Mutual Fund | Return on Mutual Fund (Rp) | Risk free Return (Rf) | Standard deviation | Sharpe Ratio |
|---|---|---|---|---|
| SBI Banking & Financial Services Fund | 17.71 | 6 | 14.5 | 0.81 |
| SBI Blue-chip Fund | 15.88 | 6 | 13.08 | 0.76 |
| SBI Infrastructure Fund | 17.24 | 6 | 26.45 | 0.43 |
| SBI Small Cap Fund | 28.65 | 6 | 37.2 | 0.61 |
| SBI Technology Opportunities Fund | 31.08 | 6 | 23.89 | 1.05 |
| SBI Healthcare Opportunities Fund | 15.05 | 6 | 29.96 | 0.3 |
| SBI Consumption Opportunities fund | 19.67 | 6 | 23.32 | 0.59 |
| SBI PSU Direct plan | 7.25 | 6 | 3.14 | 0.4 |
| SBI magnum Midcap Fund | 18.9 | 6 | 24.6 | 0.47 |
| SBI Large &Midcap Fund | 18.97 | 6 | 19.55 | 0.66 |

Based on the table above, it can be observed that SBI Technology Opportunities Fund has the highest Sharpe ratio of 1.05, indicating that it is performing well in relation to the associated risk. On the other hand, SBI Healthcare Opportunities Fund has the lowest Sharpe ratio of 0.30, which suggests that the fund is not performing well relative to the risk involved.

Table 6 Treynor Ratio for Selected Mutual Fund

| Mutual Fund | Return on Mutual Fund (Rp) | Risk free Return (Rf) | BETA (β) | Sharpe Ratio |
|---|---|---|---|---|
| SBI Banking & Financial Services Fund | 17.71 | 6 | 0.9 | 13 |
| SBI Blue-chip Fund | 15.88 | 6 | 1.27 | 7.76 |
| SBI Infrastructure Fund | 17.24 | 6 | 2.52 | 4.46 |
| SBI Small Cap Fund | 28.65 | 6 | 3.56 | 6.36 |
| SBI Technology Opportunities Fund | 31.08 | 6 | 0.67 | 37.42 |
| SBI Healthcare Opportunities Fund | 15.05 | 6 | 0.37 | 24.41 |
| SBI Consumption Opportunities fund | 19.67 | 6 | 2.19 | 6.23 |
| SBI PSU Direct plan | 7.25 | 6 | -0.16 | -7.68 |
| SBI magnum Midcap Fund | 18.9 | 6 | 2.33 | 5.53 |
| SBI Large &Midcap Fund | 18.97 | 6 | 1.9 | 6.81 |

Observing the figure above, we can see that the highest value of Treynor ratio is of SBI Technology Opportunities Fund, which is 37.42. This indicates that the fund's performance in relation to systematic risk is high.On the other hand, the lowest Treynor ratio is of SBI PSU Direct Fund, which is -7.68. This suggests that the fund's performance is poor when evaluated in respect to systematic risk. Mutual funds have become increasingly popular in the financial services market due to their suitability for all types of investors, ranging from risk-averse to risk-tolerant. With options for risk-free returns, constant returns, and market-associated returns, mutual funds cater to investors of all ages and backgrounds. Investors don't need to be experts in the equity market, as fund managers are highly skilled and invest in well-diversified portfolios. Mutual funds are increasingly trusted by investors, and those who are good at analyzing and selecting funds can do so without the help of a financial consultant.

This study evaluated the performance of 10 equity mutual fund schemes between January 2017 and December 2021, analyzing their risk and return. The analysis included various risk-adjusted performance measures, such as beta, standard deviation, correlation coefficient, Treynor ratio, and Sharpe ratio. For investors willing to take high risk for higher returns, small cap funds are ideal, while those seeking less risk and return may prefer PSU Direct funds. The evaluation of performance ratios and ranks should focus more on foreside ratios to better understand the interdependence among funds and the index. All SBI mutual fund had given more return than

bank Fixed Deposit. Majority of fund had beta more than 1 indicating fund is highly volatile. SBI Small Cap fund had given more return and is more volatile than other fund. SBI PSU Fund is less volatile and has given less return. While there have been numerous research studies on mutual funds, there is still scope for future research on the same topic, with different combinations and periods.

## 8. LIMITATIONS AND SCOPE FOR FUTURE STUDY.

This study has certain limitations that need to be considered when interpreting the findings. This study only examined mutual funds offered by SBI Mutual Fund house, further research could investigate the performance and profitability of mutual funds from other fund houses to gain a more comprehensive understanding of the industry. The study only looked at a small sample size of 10 equity schemes and did not include any debt or short-term funds. Future research could expand the sample size to include a wider range of mutual funds and investment instruments. While this study focused on the performance and profitability of SBI Mutual Fund in comparison to Nifty, future research could explore other factors that impact the performance of mutual funds, such as expense ratios, asset allocation, and market trends. This study did not examine the impact of factors such as risk management or portfolio diversification on the performance of mutual funds. Future research could investigate these factors to gain a better understanding of how they affect mutual fund performance.

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