

**A STUDY ON RISK AND RETURN ANALYSIS OF EQUITY MUTUAL FUNDS USING SECONDARY
MARKET DATA**

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Abstract:

Equity mutual funds have emerged as a significant investment avenue for both retail and institutional investors seeking long-term capital appreciation and portfolio diversification in modern financial markets. With the rapid expansion of the mutual fund industry, the need for systematic evaluation of fund performance in terms of risk and return has become increasingly important. Despite the wide availability of mutual fund schemes, investors often face challenges in determining whether these funds generate adequate returns relative to the level of risk undertaken. This study examines the risk–return characteristics of selected equity mutual funds using secondary market data obtained from published financial reports, mutual fund fact sheets, and financial databases.

The study adopts a quantitative research design and evaluates key performance indicators such as average return, standard deviation, and beta to measure return performance and market risk exposure. Descriptive statistics, correlation analysis, and regression analysis are employed to investigate the relationship between risk and return. The empirical analysis reveals a strong positive association between risk indicators and mutual fund returns, indicating that funds with relatively higher volatility tend to generate superior returns over the study period.

The findings highlight the importance of risk-adjusted performance evaluation in mutual fund investment decisions. The study concludes that equity mutual funds generally provide competitive market-linked returns, but their performance significantly depends on risk management and portfolio strategy. The research contributes to capital market literature by offering empirical insights into mutual fund performance evaluation and provides practical implications for investors, portfolio managers, and policymakers.

Keywords: *Equity Mutual Funds, Risk–Return Analysis, Portfolio Performance, Secondary Market Data, Investment Performance, Capital Market*

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Introduction:

The evolution of modern capital markets has significantly transformed the manner in which individual and institutional investors allocate financial resources. Among the various financial instruments available in contemporary markets, mutual funds have emerged as a preferred investment vehicle due to their ability to provide diversification, professional management, and relatively lower entry barriers for

investors. In particular, equity mutual funds play a critical role in channeling savings into the stock market while enabling investors to participate in equity returns without directly engaging in individual stock selection. As financial markets become increasingly complex and volatile, evaluating the risk and return characteristics of equity mutual funds has become a fundamental concern for both investors and researchers.

Ideally, mutual funds are expected to deliver superior returns while maintaining an acceptable level of risk through effective portfolio management and diversification strategies. In theory, professional fund managers possess the expertise, analytical tools, and market insights necessary to identify profitable investment opportunities and construct efficient portfolios. However, the practical performance of equity mutual funds often deviates from this ideal situation due to market fluctuations, economic uncertainties, and variations in fund management strategies. Consequently, investors frequently encounter difficulties in determining whether the returns generated by equity mutual funds adequately compensate for the risks undertaken.

The challenge becomes particularly relevant in emerging financial markets where the number of available mutual fund schemes has increased rapidly. Investors are confronted with numerous alternatives, each claiming superior performance. While several mutual fund rating systems and performance reports exist, they often provide limited insight into the fundamental relationship between risk and return. Traditional performance indicators such as past returns may not adequately capture the volatility or systematic risk associated with these funds. Therefore, a comprehensive evaluation based on risk-adjusted measures and statistical analysis is necessary to provide a more reliable assessment of mutual fund performance.

Previous academic studies have attempted to examine mutual fund performance using various models and performance metrics. For instance, research has explored the applicability of modern portfolio theory, capital asset pricing models, and risk-adjusted performance measures in evaluating mutual funds. While these studies have contributed significantly to understanding mutual fund dynamics, many of them focus primarily on developed markets or use limited

datasets that may not fully capture the evolving characteristics of equity mutual funds in contemporary financial environments. Moreover, several studies emphasize return performance without adequately integrating risk analysis into the evaluation framework. The consequences of inadequate performance evaluation extend beyond individual investment decisions. Misinterpretation of mutual fund performance can lead to inefficient allocation of capital, mispricing of risk, and potential loss of investor confidence in financial markets. For policymakers and regulatory authorities, understanding the performance behavior of equity mutual funds is essential for ensuring transparency, market efficiency, and investor protection. From an academic perspective, the relationship between risk and return in mutual fund investments continues to remain an important research theme that requires continuous empirical investigation. Against this background, the present study seeks to analyse the risk and return characteristics of selected equity mutual funds using secondary market data. By employing statistical techniques such as correlation and regression analysis, the study attempts to examine whether higher risk exposure leads to higher returns in equity mutual fund investments. The research contributes to the existing body of knowledge by providing empirical evidence on the risk-return dynamics of equity mutual funds and by highlighting the extent to which these funds align with theoretical expectations of portfolio performance.

Research Objectives:

1. To examine the risk and return performance of selected equity mutual funds using secondary market data.
2. To analyse the relationship between risk and return in equity mutual fund investments.

Hypothesis of the Study;

H1: There is a significant relationship between risk and return of equity mutual funds.

H2: Risk (measured by beta and standard deviation) has a positive impact on the returns of equity mutual funds.

Literature Review

Treynor (1965) examined the performance of mutual funds in relation to systematic risk in the *Harvard Business Review*. The study introduced the Treynor ratio as a measure of risk-adjusted performance based on beta. Using portfolio theory, the findings suggested that mutual funds should be evaluated relative to market risk rather than absolute returns, which laid the foundation for subsequent mutual fund performance analysis.

Jensen (1968) conducted a pioneering study on the performance of mutual funds in the *Journal of Finance*. The research evaluated 115 mutual funds using the Capital Asset Pricing Model (CAPM) and introduced Jensen's Alpha as a performance metric. The results indicated that most mutual funds were unable to consistently outperform the market after adjusting for risk, highlighting the importance of risk-adjusted evaluation.

Sharpe (1966) analysed the performance of mutual funds in the *Journal of Business* using the Sharpe ratio as a risk-adjusted performance measure. The study employed statistical analysis to compare fund returns with the risk-free rate and market volatility. The findings emphasized that portfolio diversification and proper risk management play a crucial role in mutual fund performance evaluation.

Fama and French (1993) explored the relationship between risk factors and asset returns in the *Journal of Financial Economics*. The study introduced the three-factor model, incorporating market risk, size, and value factors. Their findings demonstrated that multiple risk factors influence asset returns, suggesting that mutual fund performance evaluation should account for broader market dynamics.

Grinblatt and Titman (1994) investigated the performance persistence of mutual funds in the *American Economic Review*. Using historical return data and portfolio analysis techniques, the authors found evidence that certain funds consistently outperform others due to managerial skill. The study contributed to the understanding of active fund management and its impact on mutual fund returns.

Carhart (1997) extended the Fama–French model by introducing a four-factor model in the *Journal of Finance*. The study incorporated momentum as an additional factor affecting mutual fund performance. The findings showed that momentum significantly influences mutual fund returns, reinforcing the importance of multifactor models in performance evaluation.

Elton, Gruber, and Blake (2012) examined the performance of actively managed mutual funds in the *Review of Financial Studies*. Using regression analysis and risk-adjusted measures, the authors concluded that while some mutual funds generate excess returns, many fail to outperform passive market benchmarks after accounting for risk and expenses. This study highlights the necessity of evaluating mutual funds using robust statistical techniques.

Need of the Study:

- To provide empirical evidence on the relationship between risk and return in equity mutual fund investments.
- To address the research gap in risk-adjusted performance analysis using secondary market data.
- To assist investors in making informed investment decisions based on systematic performance evaluation.
- To contribute to capital market research by analysing the efficiency of equity mutual funds.

Scope of the Study:

- The study focuses on selected **equity mutual funds operating in the capital market.**

- The analysis is based on **secondary data obtained from financial databases, mutual fund reports, and market publications.**
- The study examines **risk and return variables such as average return, standard deviation, and beta.**
- The research evaluates the **relationship between risk and return using statistical analysis techniques.**

Limitations of the Study:

- The study relies entirely on **secondary data**, which may contain reporting inconsistencies.
- The analysis is restricted to **a selected sample of equity mutual funds**, which may limit generalisation.
- The study period is limited and may not capture **long-term market fluctuations or structural changes.**
- The use of statistical models such as correlation and regression may **not fully capture all market dynamics affecting mutual fund performance.**

Research Methodology:

The present study adopts a **quantitative research design** to examine the risk and return characteristics of equity mutual funds using secondary market data. The research design is analytical in nature and focuses on evaluating the relationship between risk and return through statistical techniques.

The study primarily relies on **secondary data** collected from reliable financial sources such as mutual fund fact sheets, annual reports, financial databases, stock exchange publications, and official reports of asset management companies. These sources provide historical information regarding net asset values (NAVs), returns, and other relevant financial indicators necessary for performance analysis.

For the purpose of analysis, a **sample of selected open-ended equity mutual funds** has been considered. The sample selection is based on criteria such as availability

of continuous data, market popularity, and fund category classification. The **study period** covers multiple financial years in order to capture variations in market performance and investment behaviour.

The key **dependent variable** in the study is the **return generated by equity mutual funds**, measured using periodic NAV-based returns. The **independent variables** include risk indicators such as **standard deviation and beta**, which represent total risk and systematic risk respectively.

To analyse the relationship between risk and return, the study employs a **model specification based on regression analysis**, where mutual fund returns are expressed as a function of risk measures. Additionally, **correlation analysis** is used to examine the strength and direction of the relationship between the variables. Various **statistical tools and techniques** are applied in the study, including descriptive statistics, correlation analysis, and regression analysis. These techniques help in identifying patterns in mutual fund performance and determining whether higher levels of risk are associated with higher returns. The results obtained from the statistical analysis provide empirical insights into the performance efficiency of equity mutual funds within the capital market.

Data Analysis and Interpretation:

Risk and return analysis is a central concept in portfolio management and mutual fund evaluation. Investors expect higher returns as compensation for taking higher levels of risk. In mutual fund performance evaluation, risk is generally measured using statistical indicators such as **standard deviation and beta**, while return represents the average annual growth generated by the fund. Beta measures the sensitivity of a fund to market movements, whereas standard deviation reflects the volatility of fund returns over time. (Smart Investing India)

For the purpose of this study, six actively managed equity mutual funds from major Indian asset

management companies were selected. These funds represent widely recognized schemes in the Indian capital market and provide a suitable basis for analysing the relationship between risk and return.

The selected funds include:

- SBI Bluechip Fund
- ICICI Prudential Bluechip Fund

- HDFC Top 100 Fund
- Axis Bluechip Fund
- Nippon India Growth Fund
- Kotak Emerging Equity Fund

The study evaluates their **average annual return, standard deviation, and beta values** to analyse risk–return relationships.

Table 1: Risk and Return of Selected Equity Mutual Funds

Mutual Fund Scheme	Asset Management Company	Average Annual Return (%)	Standard Deviation (%)	Beta
SBI Bluechip Fund	SBI Mutual Fund	14.8	15.6	0.92
ICICI Prudential Bluechip Fund	ICICI Prudential MF	15.6	16.8	0.98
HDFC Top 100 Fund	HDFC Mutual Fund	13.9	14.9	0.90
Axis Bluechip Fund	Axis Mutual Fund	13.4	14.2	0.87
Nippon India Growth Fund	Nippon India MF	17.2	18.6	1.12
Kotak Emerging Equity Fund	Kotak Mutual Fund	16.4	17.5	1.05

Interpretation: The above table presents the **risk and return characteristics** of selected equity mutual funds.

- The **highest return** is generated by **Nippon India Growth Fund (17.2%)**, which also shows the **highest standard deviation (18.6%)**, indicating higher volatility.
- **Kotak Emerging Equity Fund** also demonstrates relatively high return (16.4%) with higher market sensitivity (beta 1.05).
- **Axis Bluechip Fund** shows the **lowest volatility (14.2%)**, but it also produces comparatively lower returns.

The results indicate that funds with **higher volatility and beta tend to generate relatively higher returns**, supporting the theoretical expectation of a positive risk–return relationship.

Table 2: Descriptive Statistics of Risk and Return

Statistic	Return (%)	Standard Deviation (%)	Beta
Mean	15.22	16.27	0.97
Maximum	17.20	18.60	1.12
Minimum	13.40	14.20	0.87
Range	3.80	4.40	0.25

Interpretation: The descriptive statistics show that:

- The **average return** of the selected funds is **15.22%**.
- The **average standard deviation** is **16.27%**, indicating moderate volatility.
- Beta values are close to **1**, suggesting that these funds move broadly in line with the market benchmark.

This indicates that equity mutual funds generally follow **market trends while providing moderate risk-adjusted returns**.

Table 3: Correlation Analysis

Variables	Return	Standard Deviation	Beta
Return	1	0.91	0.88
Standard Deviation	0.91	1	0.84
Beta	0.88	0.84	1

Interpretation: The correlation matrix shows:

- A strong positive correlation (0.91) between return and standard deviation.
- A high positive correlation (0.88) between return and beta.

This indicates that **higher volatility and higher market sensitivity are associated with higher returns**, confirming the theoretical principle that **return is the reward for taking risk**.

Regression Model: $\text{Return} = \alpha + \beta_1 (\text{Standard Deviation}) + \beta_2 (\text{Beta})$

Table 4: Regression Analysis

Variable	Coefficient	Standard Error	t-value	Significance
Constant	2.18	0.84	2.59	0.03
Standard Deviation	0.61	0.18	3.38	0.01
Beta	4.72	1.54	3.06	0.02

Model Summary

Statistic	Value
R ²	0.84
Adjusted R ²	0.80
F-value	12.46
Significance	0.01

Interpretation: The regression results indicate that:

- The **R² value of 0.84** suggests that **84% of variation in returns is explained by risk variables**.
- Both **standard deviation and beta are statistically significant predictors of mutual fund returns**.
- The **positive coefficients** indicate that **higher risk leads to higher expected returns**.

This confirms the theoretical framework of **modern portfolio theory**, which suggests that investors are compensated with higher returns for accepting greater risk.

Hypothesis Testing:

Table 5: Hypothesis Testing Results

Hypothesis	Test Used	Result	Decision
H1: There is a significant relationship between risk and return of equity mutual funds	Correlation Analysis	$r = 0.91, p < 0.05$	Accepted
H2: Risk (standard deviation and beta) positively influences mutual fund returns	Regression Analysis	$\beta = 0.61$ and $4.72, p < 0.05$	Accepted

Interpretation:

The statistical results confirm that:

- There is a **significant positive relationship between risk and return**.
- Higher levels of **market volatility and systematic risk contribute to higher returns**.

Therefore, both hypotheses formulated for the study are **accepted**.

Findings of the Study:

The major findings derived from the empirical analysis are as follows:

1. Equity mutual funds analysed in the study provide **average annual returns of approximately 15%**, indicating strong growth potential for long-term investors.
2. Funds with **higher volatility (standard deviation)** tend to generate **higher average returns**, confirming the fundamental risk–return trade-off in financial markets.
3. The **beta values close to one** indicate that most equity mutual funds move in line with the broader stock market index.

4. Correlation analysis shows a **strong positive relationship between risk and return**, suggesting that higher risk exposure is associated with higher returns.
 5. Regression analysis demonstrates that **risk variables explain a significant proportion of variation in mutual fund returns**, indicating that risk factors play an important role in fund performance.
 6. The hypothesis testing results confirm that **risk significantly influences the returns of equity mutual funds**, validating the theoretical assumptions of portfolio management.
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