
A COMPARATIVE STUDY OF RISK AND RETURN ANALYSIS OF DEBT AND EQUITY INSTRUMENT

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ABSTRACT

Investment decisions are largely influenced by the relationship between risk and return, which plays a crucial role in financial planning. Investors often face the challenge of choosing between equity instruments, which offer higher growth potential but involve greater volatility, and debt instruments, which provide relatively stable returns with lower risk. This study aims to compare the risk and return performance of selected equity and debt mutual funds in the Indian financial market. The research is based on secondary data collected from reliable sources such as AMFI, Moneycontrol, Value Research Online, and mutual fund fact sheets. A total of eight mutual fund schemes were selected for analysis, including four equity mutual funds and four debt mutual funds, over a five-year period. The performance of these funds was evaluated using financial indicators such as Compound Annual Growth Rate (CAGR), Standard Deviation, and Beta, which help measure return, total risk, and market sensitivity. The findings reveal that equity mutual funds provide significantly higher returns compared to debt mutual funds, but they also involve higher volatility and risk. In contrast, debt mutual funds generate comparatively lower returns but offer greater stability and lower market sensitivity. The study confirms the fundamental risk–return trade-off principle. Therefore, investors are advised to maintain a balanced portfolio combining both equity and debt instruments to achieve long-term financial stability and growth.

KEYWORDS:

- Equity Mutual Funds
- Debt Mutual Funds
- Risk and Return
- CAGR (Compound Annual Growth Rate)

- Standard Deviation

1. INTRODUCTION

Investment plays a very important role in financial planning and wealth creation. Investors constantly look for investment opportunities that provide better returns while keeping risk at an acceptable level. In financial markets, different investment instruments offer different levels of risk and return. Among these, **equity and debt instruments** are considered two of the most widely used investment options. Equity investments generally provide higher return potential because they represent ownership in a company. However, they also involve higher risk due to market fluctuations. On the other hand, debt instruments provide comparatively stable and predictable returns because they represent borrowed funds that are repaid with interest. As a result, investors often face the challenge of deciding whether to invest in equity instruments for higher growth or in debt instruments for stability and lower risk. Understanding the relationship between risk and return is therefore essential for making informed investment decisions. This study focuses on analyzing and comparing the performance of selected equity and debt mutual funds to evaluate their risk and return characteristics. The study also aims to provide insights into how these investment instruments behave under different market conditions.

1.1 About the Topic

The topic of this research is “**A Comparative Study of Risk and Return Analysis of Equity vs Debt Instruments.**” The main purpose of this study is to evaluate how equity and debt mutual funds perform in terms of return and risk over a specific period. Equity mutual funds invest primarily in shares of companies and are generally considered suitable for long-term investors seeking capital appreciation. Debt mutual funds, on the other hand, invest in fixed-income securities such as government bonds, treasury bills, and corporate debt instruments, which provide relatively stable returns. This study compares selected equity and debt mutual funds using financial indicators such as **Compound Annual Growth Rate (CAGR), Standard Deviation, and Beta.**

These indicators help measure the return potential, volatility, and market sensitivity of the selected funds. By analyzing these parameters, the study attempts to determine which category of mutual funds performs better under different investment conditions.

1.2 Overview of the Indian Market

The Indian financial market has experienced significant growth over the past few decades, offering a wide range of investment opportunities to investors. With the development of the capital market and increasing awareness about financial planning, more individuals are now participating in mutual fund investments.

Regulatory bodies such as the **Securities and Exchange Board of India (SEBI)** and organizations like the **Association of Mutual Funds in India (AMFI)** play a crucial role in regulating and promoting the mutual fund industry. These institutions ensure transparency, investor protection, and proper functioning of the financial markets.

The Indian mutual fund industry provides investors with various schemes that cater to different risk appetites and financial goals. Equity mutual funds are preferred by investors seeking long-term growth, while debt mutual funds are chosen by those who prioritize safety and stable returns. As the investment environment continues to evolve, understanding the performance of these funds becomes increasingly important for investors.

1.3 Growth of the Industry

The mutual fund industry in India has witnessed remarkable growth in recent years due to increasing investor awareness, technological advancements, and improved financial literacy. The introduction of digital platforms has made investing easier and more accessible for individuals across the country.

Government initiatives promoting financial inclusion and systematic investment plans (SIPs) have also contributed to the rapid expansion of the industry. As a result, the number of investors participating in mutual funds has increased significantly.

Equity mutual funds have gained popularity among investors seeking higher returns and long-term wealth creation. At the same time, debt mutual funds continue to attract conservative investors who prefer stable income and lower risk. This growth highlights the importance of evaluating the performance of different investment options so that investors can make better financial decisions.

2. Literature Review

1. Pandow & Butt (2017)

This study examined the risk and return performance of mutual funds in India and emphasized the role of effective fund management and innovative strategies in attracting investors to the mutual fund industry.

2. Jesrani (2023)

The research analyzed the performance of equity mutual fund schemes and found that some funds performed well even in volatile markets, highlighting the importance of evaluating risk–return ratios before investing.

3. Sharma & Joshi (2021)

This study evaluated equity, debt, and hybrid mutual funds using financial indicators such as standard deviation, beta, Sharpe ratio, and Jensen’s alpha to understand their risk–return characteristics.

4. Prasad (2024)

The study examined the growth and performance of mutual funds in India and highlighted how investor behavior and market conditions influence the development of the mutual fund industry.

5. Soni & Malviya (2025)

This research compared different investment avenues including mutual funds, gold, property, and fixed deposits, and concluded that investors should diversify their investments to balance risk and return.

6. Shruthi & Manjunatha (2018)

The study analyzed Indian mutual funds using parameters such as NAV, rate of return, and standard deviation, emphasizing the importance of risk–return analysis in evaluating fund performance.

7. Kaur & Kaushik (2021)

This research evaluated mutual fund performance in emerging markets and found that economic conditions and market fluctuations significantly influence the returns of mutual fund schemes.

8. Malviya & Soni (2025)

The study compared different investment options and highlighted that each investment avenue carries different levels of risk and return, requiring investors to make informed decisions.

9. Jaiswal (2025)

This research focused on evaluating mutual fund schemes based on their risk and return characteristics, emphasizing the importance of performance analysis for investment decision-making.

10. Sharma & Joshi (2021)

This study again highlighted the importance of using statistical tools such as Sharpe ratio,

Treynor ratio, and Jensen's alpha to evaluate the efficiency and performance of mutual funds.

11. Pandow & Butt (2017)

The research emphasized the need for investor awareness and innovative mutual fund products to enhance the growth of the mutual fund industry in India.

12. Jesrani (2023)

This study analyzed diversified equity mutual funds and concluded that risk-adjusted performance measures are essential in understanding mutual fund efficiency.

13. Sharma & Joshi (2021)

The study provided insights into how different mutual fund categories perform under varying market conditions and how risk indicators help investors select suitable funds.

14. Prasad (2024)

The research discussed the long-term development of the Indian mutual fund industry and highlighted the increasing role of equity and debt funds in investment portfolios.

15. Soni & Malviya (2025)

This study emphasized the importance of comparing various investment avenues to understand their risk–return dynamics and to help investors build diversified portfolios.

3. Research Methodology

3.1 Research Design:

The study follows a descriptive and analytical research design to compare the risk and return performance of equity and debt mutual funds. The research aims to understand how these two investment categories perform in terms of returns, volatility, and market sensitivity. By analyzing selected mutual fund schemes, the study provides a clear comparison between equity and debt instruments in the Indian financial market.

3.2 Sources of Data:

The study is based on secondary data collected from reliable financial sources. The main sources include AMFI (Association of Mutual Funds in India), SEBI reports, NSE and BSE websites, and mutual fund company websites. In addition, financial research portals such as Moneycontrol, Value Research Online, and Morningstar were used to obtain information on fund performance, returns, and risk indicators.

3.3 Data Collection Method:

The data used in this research was collected through secondary data sources. Information related to mutual fund performance, NAV values, and risk indicators was gathered from

online financial databases, research portals, and mutual fund fact sheets.

3.4 Population:

The population for this study includes all mutual fund schemes operating in the Indian mutual fund industry, particularly equity and debt-oriented schemes. These funds are managed by various Asset Management Companies (AMCs) registered under SEBI and listed under AMFI.

3.5 Sampling Method:

The study uses a purposive sampling method to select mutual fund schemes. This method was used to choose funds that have a strong market reputation, consistent performance history, and availability of reliable data.

3.6 Sampling Frame:

The sampling frame consists of mutual fund schemes listed under AMFI and regulated by SEBI during the study period. The schemes are selected from well-known Asset Management Companies such as SBI Mutual Fund, HDFC Mutual Fund, ICICI Prudential Mutual Fund, Kotak Mahindra Mutual Fund, and Nippon India Mutual Fund.

3.7 Data Collection Instrument:

The study uses different tools and instruments to collect and analyze the required data. These include NAV data sheets, benchmark index data, financial reports, and published research papers. For analysis, Microsoft Excel and statistical tools were used to calculate financial indicators such as CAGR, Standard Deviation, and Beta. Graphs and tables were also used to present the results clearly.

4. Data Analysis and Interpretation

The analysis of the selected equity and debt mutual funds based on their **returns, risk, and market sensitivity**. The performance of the funds is evaluated using key financial indicators such as **Compound Annual Growth Rate (CAGR), Standard Deviation, and Beta**. CAGR represents the average annual return generated by the funds, standard deviation measures the volatility or risk associated with the returns, and beta indicates how sensitive the fund returns are to market movements.

4.1 Tabular Analysis

Table 4.1: Comparative Analysis of Equity Mutual Funds (5-Year Period)

Mutual Fund	Category	5-Year CAGR (%)	Standard Deviation (%)	Beta
ICICI Prudential Large Cap Fund	Large Cap Equity	18.2	10.9	0.90
Kotak Mid Cap Fund	Mid Cap Equity	22.7	15.0	0.89
HDFC Mid Cap Fund	Mid Cap Equity	24.1	13.8	0.86
Nippon India Small Cap Fund	Small Cap Equity	26.8	16.6	0.82

Source: Data compiled from Association of Mutual Funds in India (AMFI), Moneycontrol, Value Research Online, and respective AMC fact sheets of ICICI Prudential Mutual Fund, Kotak Mahindra Mutual Fund, HDFC Mutual Fund, and Nippon India Mutual Fund.

Interpretation

From the above table, it can be observed that **Nippon India Small Cap Fund** generated the highest return among the equity funds with a CAGR of **26.8%**, indicating strong growth potential. However, it also has the highest standard deviation, which suggests higher volatility and risk.

The **HDFC Mid Cap Fund** and **Kotak Mid Cap Fund** also showed strong performance with relatively high returns and moderate risk levels. These funds represent a balanced risk–return profile within the equity category.

On the other hand, **ICICI Prudential Large Cap Fund** recorded the lowest return among the selected equity funds but also showed the lowest volatility. This indicates that large-cap funds tend to be more stable compared to mid-cap and small-cap funds.

Overall, the analysis shows that **higher returns in equity funds are generally associated with higher risk**, confirming the fundamental risk–return relationship.

Table 4.2: Comparative Analysis of Debt Mutual Funds (5-Year Period)

Mutual Fund	Category	5-Year CAGR (%)	Standard Deviation (%)	Beta
HDFC Long Duration Debt Fund	Long Duration Debt	4.7	3.5	0.20
ICICI Prudential Short Term Fund	Short Term Debt	6.8	0.8	0.15
Nippon India Medium Duration Fund	Medium Duration Debt	9.4	4.2	0.25
SBI Liquid Fund	Liquid Debt	5.6	0.3	0.05

Source: Data compiled from Association of Mutual Funds in India (AMFI), Moneycontrol, Value Research Online, and scheme fact sheets of HDFC Mutual Fund, ICICI Prudential Mutual Fund, Nippon India Mutual Fund, and SBI Mutual Fund.

Interpretation

The analysis of debt mutual funds shows that **Nippon India Medium Duration Fund** generated the highest return with a CAGR of **9.4%**, but it also exhibited the highest standard deviation among debt funds.

The **ICICI Prudential Short Term Fund** provided stable returns with relatively low volatility, making it suitable for investors who prefer steady income with lower risk.

The **SBI Liquid Fund** recorded the lowest risk level with a very low standard deviation of **0.3%**, making it one of the safest investment options among the selected funds.

Overall, debt mutual funds provide **lower but more stable returns compared to equity funds**, making them suitable for conservative investors.

4.2 Comparative Analysis of Equity and Debt Mutual Funds

The comparison between equity and debt mutual funds clearly highlights the difference in their risk and return characteristics.

Comparison Based on Returns

Equity mutual funds generated significantly higher returns, with CAGR ranging from **18.2% to 26.8%**. In contrast, debt mutual funds produced lower returns ranging from **4.7% to 9.4%**. This indicates that equity mutual funds are more suitable for investors seeking **long-term capital appreciation**, while debt mutual funds focus more on **capital preservation and stable income**.

Comparison Based on Risk

Equity funds showed higher volatility, with standard deviation ranging from **10.9% to 16.6%**, whereas debt funds had much lower volatility between **0.3% and 4.2%**.

This confirms that equity investments involve greater risk due to market fluctuations, while debt funds provide relatively stable returns.

Comparison Based on Market Sensitivity

The beta values of equity funds ranged from **0.82 to 0.90**, indicating moderate sensitivity to market movements. In contrast, debt funds had beta values close to zero (**0.05 to 0.25**), indicating minimal exposure to stock market fluctuations.

Overall, the analysis supports the **risk–return trade-off principle**, which states that higher

returns are generally associated with higher levels of risk.

Ranking of Equity Mutual Funds Ranking Based on Return. (5-Year CAGR)

Rank	Mutual Fund	5-Year CAGR (%)
1	Nippon India Small Cap Fund	26.8
2	HDFC Mid Cap Fund	24.1
3	Kotak Mid Cap Fund	22.7
4	ICICI Prudential Large Cap Fund	18.2

Best Equity Fund (Return): Nippon India Small Cap Fund

Ranking Based on Risk (Lower Standard Deviation)

Rank	Mutual Fund	Standard Deviation (%)
1	ICICI Prudential Large Cap Fund	10.9
2	HDFC Mid Cap Fund	13.8
3	Kotak Mid Cap Fund	15.0
4	Nippon India Small Cap Fund	16.6

Safest Equity Fund: ICICI Prudential Large Cap Fund

Ranking of Debt Mutual Funds

Ranking Based on Return (5-Year CAGR)

Rank	Mutual Fund	5-Year CAGR (%)
1	Nippon India Medium Duration Fund	9.4
2	ICICI Prudential Short Term Fund	6.8
3	SBI Liquid Fund	5.6
4	HDFC Long Duration Debt Fund	4.7

Best Debt Fund (Return): Nippon India Medium Duration Fund

Ranking Based on Risk (Lower Standard Deviation)

Rank	Mutual Fund	Standard Deviation (%)
1	SBI Liquid Fund	0.3
2	ICICI Prudential Short Term Fund	0.8
3	HDFC Long Duration Debt Fund	3.5
4	Nippon India Medium Duration Fund	4.2

Safest Debt Fund: SBI Liquid Fund

5. Findings from Data Analysis

1. The study found that equity mutual funds generate higher returns compared to debt mutual funds over the five-year study period.
2. The selected equity mutual funds recorded returns ranging from 18.2% to 26.8%, while debt mutual funds generated returns between 4.7% and 9.4%.
3. Among the equity funds, Nippon India Small Cap Fund produced the highest return,

- indicating strong growth potential but also higher volatility.
4. HDFC Mid Cap Fund and Kotak Mid Cap Fund also showed good performance with relatively high returns and moderate risk levels.
 5. ICICI Prudential Large Cap Fund showed the lowest volatility among the equity funds, making it comparatively more stable.
 6. In the debt fund category, Nippon India Medium Duration Fund generated the highest return among the selected debt mutual funds.
 7. SBI Liquid Fund recorded the lowest risk with minimal volatility, making it suitable for conservative investors.
 8. The standard deviation values indicate that equity funds are more volatile and risky, while debt funds provide more stable returns.
 9. The beta values of equity funds show moderate sensitivity to market movements, whereas debt funds have very low beta values, indicating limited exposure to market fluctuations.
 10. The results clearly support the risk–return trade-off principle, which states that higher returns are generally associated with higher levels of risk.
 11. The study suggests that equity mutual funds are suitable for long-term investors seeking higher growth, while debt mutual funds are appropriate for investors who prefer stability and lower risk.

CONCLUSION

This study aimed to compare the risk and return performance of selected equity and debt mutual funds in the Indian financial market. The analysis was conducted using key financial indicators such as Compound Annual Growth Rate (CAGR), Standard Deviation, and Beta to evaluate the returns, volatility, and market sensitivity of the selected funds.

The findings of the study indicate that equity mutual funds generally provide higher returns compared to debt mutual funds. Funds such as the Nippon India Small Cap Fund and HDFC Mid Cap Fund showed strong growth potential and higher returns over the study period. However, these higher returns are accompanied by greater volatility and risk due to market fluctuations. In contrast, debt mutual funds such as the ICICI Prudential Short Term Fund and SBI Liquid Fund demonstrated relatively stable returns with significantly lower risk levels.

The results clearly highlight the fundamental investment principle of the risk–return trade-off, which states that investments with higher return potential usually involve higher levels of

risk. Therefore, the choice between equity and debt investments largely depends on an investor's risk tolerance, investment horizon, and financial goals.

Overall, the study suggests that equity mutual funds are more suitable for investors seeking long-term capital growth, while debt mutual funds are ideal for investors who prefer stability and lower risk. A balanced investment strategy that combines both equity and debt instruments can help investors achieve better portfolio diversification and manage risk effectively.

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