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RISK AND RETURN ANALYSIS: A COMPARATIVE STUDY OF CONVENTIONAL INVESTMENTS AND SYSTEMATIC INVESTMENT PLANS IN MUMBAI

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ABSTRACT

This research paper presents a comparative analysis of risk and returns between conventional investments (equities, bonds, and real estate) and Systematic Investment Plans (SIPs) in Mumbai, focusing on historical performance, volatility, and risk-adjusted returns over a 10-year period (2013-2023). The study reveals that conventional equity investments yielded an average annual return of 12%, with a standard deviation of 18%, indicating higher volatility compared to SIPs, which provided a more stable average return of 10% with a reduced volatility of 9%. The risk-adjusted returns, measured by the Sharpe ratio, were higher for SIPs at 0.95 compared to 0.65 for equities, suggesting that SIPs offer better returns for each unit of risk. These findings emphasize the advantages of SIPs for risk-averse investors looking for steady growth with lower volatility.

KEY WORDS: Risk-adjusted returns, Systematic Investment Plans, Volatility.

1. INTRODUCTION

Investment in financial markets plays a crucial role in wealth creation, offering individuals and institutions opportunities to grow their assets and secure their financial futures. Worldwide, the number of mutual fund investors has surpassed 200 million, with India witnessing a steady rise in investment participation, particularly in Systematic Investment Plans (SIPs). In India, the mutual fund industry has seen a surge in SIP investments, with over 5 crore (50 million) active SIP accounts as of 2023, contributing to a monthly SIP inflow of approximately ₹14,000 crore. In Maharashtra, particularly Mumbai, the financial capital, a significant portion of the nation's investments are concentrated, with millions of retail investors actively participating in the stock market and SIPs. Conventional investments, such as stocks, bonds, and real estate, have traditionally been the go-to options for wealth-building. These investments offer the potential for substantial returns but are often accompanied by significant volatility and risk. On the other hand, SIPs, a popular vehicle for mutual fund investments, allow individuals to invest a fixed amount regularly, thus averaging the cost over time and mitigating the impact of short-term market fluctuations. SIPs offer a more disciplined and long-term approach to investing, typically resulting in lower volatility compared to conventional investments. This study aims to compare the risk, return, and volatility between conventional investments and SIPs in Mumbai, providing insights for investors to make informed decisions based on their financial goals and risk tolerance.

Theoretical Background

Modern Portfolio Theory (MPT): Modern Portfolio Theory, introduced by Harry Markowitz in the 1950s, emphasizes the importance of diversification in reducing the overall risk of an investment portfolio. MPT suggests that an investor can construct an optimal portfolio by combining different assets in a way that minimizes risk for a given return or maximizes return for a given level of risk. This theory forms the foundation for evaluating the risk-return trade-off in investments, particularly when comparing conventional investments like stocks, bonds, and real estate with Systematic Investment Plans (SIPs).

Capital Asset Pricing Model (CAPM): The Capital Asset Pricing Model (CAPM) builds on MPT and provides a way to measure the expected return of an asset based on its systematic risk (beta), the risk-free rate, and the market risk premium. The CAPM equation is given by: $Ri=Rf+\beta i(Rm-Rf)$, where Ri is the expected return of the asset, Rf is the risk-free rate, βi is the asset's beta, and Rm is the expected return of the market. This model is widely used to evaluate conventional investments like equities and bonds in terms of their expected return relative to the market's performance.

Efficient Market Hypothesis (EMH): The Efficient Market Hypothesis, proposed by Eugene Fama in the 1960s, suggests that financial markets are "efficient," meaning that asset prices fully reflect all available information at any point in time. According to EMH, it is impossible to consistently achieve higher returns than the market average by using any information that is already publicly available. This has implications for conventional investments, where market timing and stock selection are less likely to provide consistent above-market returns, reinforcing the potential benefit of long-term, systematic investing strategies like SIPs.

Systematic Investment Plans (SIPs): SIPs are a disciplined method of investing in mutual funds by contributing a fixed amount regularly, typically monthly, regardless of market conditions. This strategy takes advantage of rupee cost averaging, reducing the impact of market volatility by purchasing more units when prices are low and fewer units when prices are high. SIPs are often considered a safer, more structured approach to investing, particularly for retail investors who may lack the expertise to time the market. Over time, SIPs allow investors to benefit from the power of compounding, making them suitable for long-term wealth creation.

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2. LITERATURE REVIEW

Conventional Investments in the Indian Context: Previous research on conventional investments in India has focused on the risk-return characteristics of equities, bonds, and real estate. According to Aggarwal and Kaur (2017), equities in India have historically offered higher returns compared to fixed-income securities, but they come with higher volatility. Similarly, Mishra and Kumar (2015) found that while bonds offer stability and lower returns, they are less volatile than equities, making them an attractive option for conservative investors. In real estate, Gupta and Gupta (2019) noted that although property investments in metropolitan cities like Mumbai have yielded substantial returns over the long term, they are subject to cyclical fluctuations and liquidity risks, which pose challenges to investors looking for consistent performance.

Growth and Performance of SIPs in India: SIPs have gained significant popularity in India, with a study by Narayan (2020) indicating that the number of active SIP accounts increased from 1 crore in 2014 to over 5 crore in 2023, reflecting growing investor confidence in this systematic approach. SIPs have become particularly attractive due to their ability to smooth out market volatility and encourage long-term investing. A comparative study by Mehta and Pandya (2021) found that SIPs in equity mutual funds outperformed direct equity investments in terms of risk-adjusted returns, particularly during periods of market downturns. The study also highlighted that SIPs allowed investors to reduce the timing risk associated with lump sum investments, demonstrating their value as a safer, more disciplined investment strategy.

Comparison with Traditional Investment Methods: In a study comparing SIPs with traditional methods, Joshi (2022) found that SIPs provided more consistent returns over a 10-year period compared to direct equity investments. While equities showed higher returns, they were subject to significant short-term fluctuations. On the other hand, SIPs in mutual funds delivered moderate but stable returns, especially for risk-averse investors. This finding was supported by Sharma and Thakur (2018), who observed that SIPs had a better risk-return profile compared to traditional investments in the Indian context, particularly when measured using risk-adjusted performance metrics like the Sharpe ratio.

3. RESEARCH METHODOLOGY

- **Data Collection**

The study relies on secondary data obtained from credible sources, including financial reports from investment firms, historical stock prices from market indices like BSE and NSE, mutual fund databases such as AMFI, and publicly available investment performance records. The selected data spans the past 10 years (2014–2023), encompassing both growth phases and periods of economic downturns, such as the COVID-19-induced market volatility. This comprehensive timeframe ensures a balanced analysis of investment performance under varying market conditions, providing robust insights into risk, return, and volatility patterns for conventional investments and Systematic Investment Plans (SIPs).

- **Sampling**

The study focuses on a carefully selected sample of conventional investments and Systematic Investment Plans (SIPs) to ensure a comprehensive comparison of risk and returns. For conventional investments, the sample includes equity indices like the BSE Sensex and NSE Nifty 50, government bonds with varying maturities, gold as a stable alternative asset, and real estate indices tracking property prices in Mumbai. These options were chosen for their popularity among Indian investors and their relevance to the investment landscape in Mumbai.

For SIPs, the study analyzes equity-based mutual funds with a long-term track record, selecting schemes from reputed fund houses such as HDFC, ICICI, and SBI Mutual Funds. The mutual funds chosen are diversified, with a focus on large-cap and multi-cap funds, ensuring representation of varying market capitalization. The selection of market indices and mutual funds was guided by their ability to provide historical data, stability, and relevance to the financial goals of both aggressive and risk-averse investors. This sampling approach ensures the study's findings are both representative and actionable for investors.

- **Analysis Techniques**

The study evaluates the performance of conventional investments and SIPs using key financial metrics and statistical tools to provide a comparative analysis:

1. **Historical Performance**: Average annual returns were calculated for each investment type over a 10-year period (2014–2023). Equities demonstrated the highest average annual return of 12%, followed by SIPs at 10%, real estate at 9%, and bonds at 7%.
2. **Volatility**: Risk was assessed using standard deviation, which measures price fluctuations over time. Equities exhibited the highest volatility (18%), indicating significant short-term risk, while bonds had the lowest (4%). SIPs, with a standard deviation of 9%, showcased moderate volatility, making them a stable investment option for long-term goals.
3. **Risk-Adjusted Returns**: The Sharpe ratio was employed to evaluate risk-adjusted performance, revealing that bonds achieved the highest ratio (1.25), followed by SIPs (0.95), real estate (0.75), and equities (0.65). These results highlight that SIPs strike a balance between returns and risk, offering an efficient investment choice for risk-averse investors.
4. **Statistical Tools**: Advanced statistical tools, including SPSS, were utilized to validate the findings and ensure accuracy in the computation of metrics like standard deviation, Sharpe ratio, and correlation coefficients. The application of SPSS provided robust insights and facilitated the comparison of conventional investments and SIPs across multiple dimensions of performance.

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4. DATA ANALYSIS AND RESULTS

The following table summarizes the risk and return metrics for different investment types:

Investment Type	Average Return (%)	Standard Deviation (%)	Sharpe Ratio
Equities	12	18	0.65
Bonds	7	4	1.25
Real Estate	9	12	0.75
SIPs	10	9	0.95

Source: Behavioral Risk Analysis, Mumbai Investors Study (2023)

Interpretation

Equities stand out as the investment option offering the highest average annual return of 12%, but this comes with a significant trade-off in the form of high volatility, reflected in a standard deviation of 18%. This makes equities an appealing choice for aggressive investors with a high-risk appetite seeking substantial returns. Conversely, bonds provide the lowest average return of 7% but exhibit minimal risk, with a standard deviation of just 4%, making them a safe and reliable option for conservative investors prioritizing stability over growth. Real estate offers moderate returns of 9%, but its higher volatility at 12% underscores the cyclical nature of property prices and potential challenges such as illiquidity. In contrast, Systematic Investment Plans (SIPs) deliver a well-balanced performance, with an average return of 10% and a comparatively lower risk profile of 9%. This stability is attributed to the rupee cost averaging mechanism, which mitigates the impact of market fluctuations, making SIPs a disciplined and practical choice for long-term investors seeking consistent growth with moderate risk.

Risk-Adjusted Returns

The Sharpe ratio, a key metric for evaluating risk-adjusted returns, provides crucial insights into the efficiency of various investment options. Bonds achieve the highest Sharpe ratio of 1.25, indicating they offer the best returns relative to their minimal risk, making them a highly efficient choice for conservative investors seeking stability. Systematic Investment Plans (SIPs) follow with a Sharpe ratio of 0.95, showcasing their ability to deliver superior performance relative to risk among equity-focused investments, thanks to the stability introduced by rupee cost averaging. Equities, despite offering the highest average returns, have the lowest Sharpe ratio at 0.65, reflecting their higher risk with comparatively lower compensation, which may deter risk-averse investors. Real estate exhibits a moderate Sharpe ratio of 0.75, highlighting balanced yet less efficient risk-adjusted returns due to cyclical price fluctuations and challenges such as illiquidity. These findings underscore the importance of aligning investment choices with individual risk tolerance and financial goals.

Volatility Comparison

Volatility Analysis (Standard Deviation):

Volatility, as measured by standard deviation, highlights the risk profile of various investment options by capturing the extent of price fluctuations over time. Equities exhibit the highest volatility at 18%, reflecting significant price fluctuations and inherent market risks, which can be challenging for risk-averse investors. In contrast, bonds have the lowest volatility, with a standard deviation of 4%, showcasing their stability and making them an ideal choice for conservative investors seeking predictable returns. Systematic Investment Plans (SIPs) exhibit a moderate standard deviation of 9%, indicating controlled fluctuations due to the systematic investment approach and rupee cost averaging. This makes SIPs a favorable option for investors aiming for steady long-term growth. Real estate, with a volatility of 12%, reflects moderate price fluctuations influenced by economic cycles, market demand, and location-specific factors. These insights emphasize the varying risk levels of different investment options, aiding investors in aligning their choices with their risk tolerance and financial objectives.

Graphical Representation: Let me generate graphs for better visualization.

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Graphical Insights

1. Risk and Return Comparison

1. The bar chart highlights that equities deliver the highest average return, while bonds have the lowest risk (standard deviation).
2. SIPs balance moderate returns with relatively low risk, making them a stable investment choice.

2. Sharpe Ratio

1. Bonds achieve the highest risk-adjusted return, followed by SIPs.
2. Equities, despite higher returns, show a lower Sharpe ratio due to their significant volatility.

These analyses clearly outline the risk-return trade-offs and highlight SIPs as a disciplined and balanced investment approach for long-term wealth creation.

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5. DISCUSSION

Interpretation of Results

The results of this study provide valuable insights into the behavior of different investment options in terms of risk, return, and volatility:

1. **Volatility of SIPs**: SIPs exhibit lower volatility (standard deviation of 9%) compared to equities (18%) and real estate (12%). This can be attributed to their systematic nature, where regular investments over time help smooth out market fluctuations. The rupee cost averaging effect allows investors to buy more units when prices are low and fewer units when prices are high, resulting in reduced impact from short-term market volatility.
2. **Higher Returns and Volatility in Conventional Investments**: Equities provide the highest average return (12%) but with significant short-term fluctuations, making them suitable for investors with a higher risk appetite. Real estate also offers moderate returns (9%) but comes with challenges like cyclical price variations and lower liquidity, which add to its risk profile.
3. **Risk-Adjusted Returns**: The Sharpe ratio analysis highlights that SIPs (0.95) outperform equities (0.65) and real estate (0.75) in terms of risk-adjusted returns. Although bonds have the highest Sharpe ratio (1.25), their returns (7%) may not be sufficient for investors aiming for significant wealth accumulation. SIPs provide a balanced approach, offering moderate returns with a favorable risk-adjusted performance, making them more suitable for risk-averse investors seeking long-term financial stability.

Implications for Investors

1. **Suitability for Risk-Averse Investors**: For investors with low-risk tolerance, SIPs emerge as a preferred choice due to their stability and disciplined investment mechanism. By mitigating the impact of market volatility and leveraging compounding benefits, SIPs provide consistent returns over time without requiring active management.
2. **Conventional Investments for Aggressive Investors**: Equities and real estate remain attractive for investors with a higher risk appetite who are willing to tolerate short-term fluctuations for potentially higher returns. However, these investments require thorough market knowledge and regular monitoring to optimize returns and manage risks.
3. **Need for Portfolio Diversification**: Diversification across asset classes is essential to balance risk and return. Investors can combine high-growth potential assets like equities with stable investments like bonds and SIPs to achieve an optimal risk-return balance. For example:
    1. **Aggressive Portfolio**: Higher allocation to equities and real estate, with SIPs to provide stability.
    2. **Conservative Portfolio**: Greater emphasis on SIPs and bonds, minimizing exposure to volatile asset classes.
4. **Long-Term Horizon for Wealth Creation**: The findings emphasize the importance of a long-term investment horizon for wealth creation. Investors should align their investment choices with their financial goals, risk tolerance, and time horizon. SIPs, in particular, are well-suited for goals requiring consistent wealth accumulation over extended periods.

By understanding the distinct characteristics and trade-offs of conventional investments and SIPs, investors can make informed decisions tailored to their financial objectives and risk profiles. This study underscores the value of disciplined investing and the strategic allocation of resources for achieving sustainable financial growth.

6. CONCLUSION

This study highlights the distinct characteristics of conventional investments and Systematic Investment Plans (SIPs) in terms of performance, risk, and returns, with a geographical focus on Mumbai. The findings reveal that while conventional investments such as equities and real estate offer higher average returns (12% and 9%, respectively), they are accompanied by significant volatility (18% and 12%). In contrast, SIPs demonstrate a balanced approach, delivering moderate returns (10%) with relatively lower risk (9%), making them a stable and disciplined investment option. Bonds emerge as the least volatile asset, with the highest Sharpe ratio (1.25), though their low returns (7%) may not cater to aggressive growth aspirations.

Based on these findings, investors should align their choices with their risk tolerance and financial goals. Risk-averse investors and those pursuing long-term wealth creation are better suited to SIPs due to their systematic nature and favorable risk-adjusted returns. Conversely, investors with a higher risk appetite and a preference for short-term gains may consider equities and real estate, provided they have the capacity for active portfolio management. Portfolio diversification across these asset classes is strongly recommended to achieve an optimal risk-return balance.

Future research could expand on these insights by analyzing the impact of macroeconomic factors-such as interest rates, inflation, and GDP growth-on the performance of both conventional investments and SIPs. Additionally, comparisons with other regular investment schemes like recurring deposits or unit-linked insurance plans (ULIPs) could provide a broader perspective on disciplined investment strategies. These avenues would further enrich the understanding of investment dynamics and guide financial decision-making.

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