

Analyzing Returns Generated on Lumpsum Investments in Select Mutual Fund Schemes

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Abstract

With an increasing interest in mutual funds as an investment option, understanding the potential variations in returns across different investment durations becomes crucial for investors seeking to optimize their investment strategies. This research study delves into the examination of significant differences in average annualized returns among various investment periods of mutual fund schemes.

To achieve the objectives of this study, the data was collected on the performance of mutual fund schemes over multiple investment periods, ranging from 3 year to 10 years. The sample comprises a diverse set of mutual funds, and includes Lumpsum investments. From the average annualized returns and absolute returns of these schemes, we aimed to identify any statistically significant differences in performance.

The statistical analysis involved the use of One-way ANOVA and Descriptive Statistics was used. Additionally, p-values were computed to ascertain the level of significance in the differences observed.

The results of the analysis demonstrated intriguing patterns in the performance of mutual fund schemes across various investment durations. Notably, significant differences in average absolute and annualized returns were observed in the examined investment periods. This suggests that the choice of Lumpsum investments can significantly impact the overall returns for certain durations.

Keywords: Mutual Fund, average returns, lumpsum investment, absolute, annualized returns.

1. Introduction

Mutual funds have emerged as a popular investment option for individuals seeking to diversify their portfolios and achieve long-term financial goals. The appeal of mutual funds lies in their ability to pool resources from multiple investors and invest in a diverse range of assets,

managed by professional fund managers. Within the realm of mutual funds, investors often encounter two primary modes of investment: Systematic Investment Plans (SIP) and Lumpsum investments. These investment methods offer distinct approaches to allocating funds over different time horizons, potentially influencing the overall performance of the investment.

The subject of whether there is a significant difference in the average annualized returns of mutual fund schemes across multiple investing periods has piqued the curiosity of investors, financial experts, and researchers alike. This investigation has major implications for both individual investors seeking optimal investing strategies and fund managers looking to build products that match the market's changing needs.

The purpose of this research paper is to delve into this relevant subject and throw light on the performance differences between SIP and Lumpsum investments over various investment durations. We intend to find and quantify any statistically significant differences in their average annualized returns by evaluating a large dataset of mutual fund schemes with investment durations spanning from three to ten years.

To accomplish this objective, we will employ rigorous statistical analysis, including ANOVA and computation of p-values, to compare the means of the two investment methods for each investment duration. These tests will help us determine whether any observed differences in average annualized returns are statistically significant or simply due to random chance.

This analysis, will be able to provide significant insights to the financial community, allowing investors to make well-informed decisions based on a greater understanding of the performance characteristics of mutual fund schemes over various investment horizons. Furthermore, this research will add to the current body of knowledge in the fields of investment analysis and portfolio management, and it may pave the way for future research on the dynamics of mutual fund performance.

The methodology, data gathering technique, and statistical analysis will be presented in depth in the following sections of this research study. Further important findings and their consequences, offering a complete overview of the large disparities in average annualized returns of mutual fund schemes across different investing periods.

2. Literature Review

Krishnaprabha S & VijayaKumar M. (2015) has conducted a comparative analysis of risk and return of top BSE market capitalization businesses from January 1st, 2010 to December 31st, 2014 to examine the performance of selected stocks in India. They have acquired businesses in a variety of industries, including banking, information technology, automobiles, pharmaceuticals, and fast-moving consumer goods (FMCG). The stock value's standard deviation and variance were also calculated. They discovered that the market was less volatile throughout the era, and long-term investors considered it beneficial for stock investments. Dr. A. Kishore Kumar (2014) did a study on the Comparative Performance Analysis of Selected Indian Mutual Fund Schemes. This study examines and compares the performance of mutual funds owned by Indians. These funds' performance was evaluated using five-year NAVs and portfolio allocation. According to the study's findings, mutual funds outperform naive investments. Mutual funds are favored by investors as a reliable medium- to long-term investment alternative. Prof. V. Vanaja and Dr. R. Karrupasamy (2013) studied the performance of different Private Sector Balanced Category Mutual Fund Schemes in India.

This performance evaluation study will assist investors in selecting the best schemes accessible, as well as AUMs in creating better portfolios and resolving issues. Rupeet Kaur (2013) observed that, the Oryx mutual fund has performed almost equal to the benchmark indicators. However, the average return of the schemes is less than the market index but the difference is insignificant for the study period. Mehta Shantanu et.al (2012) gave an overview of investor preferences for Indian Mutual Funds in their paper, with a special focus on the towns of Ahmedabad and Baroda. They focused on the factors that influenced investors' decision to invest in Mutual Funds, as well as the way through which they chose to invest in Mutual Funds. This study was also broadened to evaluate the success of mutual fund schemes selected by investors based on return criteria. A sample of 100 educated investors was used in this investigation.

3. Objectives

1. To identify the various mutual fund schemes.
2. To study performance under Lumpsum Investments across various investment durations offered by Aditya Birla Sun Life AMC Limited, Axis Asset Management Company Ltd and HDFC Asset Management Company Limited.
3. To analyze the differences in both absolute and annualized returns generated by the selected schemes over different time durations.
4. To present a concise conclusion based on research findings, summarizing the key insights and practical implications for investors and the financial industry.

4. Research Methodology

The study is exploratory in nature. The data is collected through secondary sources.

4.1 Research Design & Technique: The present study is exploratory and seeks to find the differences in returns generated by the selected schemes. Purposive Sampling technique is followed for the study.

seeks out to find out individuals awareness on cryptocurrency and correlate it with Age, Gender, and Occupation of the individua

4.2 Data Collection: The secondary data is collected through websites of mutual funds houses and Amfi India website. Secondary data was collected from scholarly work of researchers, books, websites and magazines. The data was captured for 33 schemes for a duration of 3, 5 and 10 year.

4.3 Tools used for data analysis: One-way ANOVA is used is used for this study to identify the differences in the returns both annualized and absolute.

4.4 Hypothesis: Listed below are two hypotheses framed for the study,

Hypothesis 1: There is no significant difference in the average absolute returns of lumpsum investments across various investment periods.

Hypothesis 2: There is no significant difference in the average annualized returns of lumpsum investments across various investment periods.

5. Results and Discussion

5.1 Data Analysis

Table 1: Descriptive Statistics - Absolute Returns on Lumpsum Investment

	3 Year	5 Year	10 Year
Mean	0.618103	0.556551	2.266751
Standard Error	226	613	613
Median	0.076713	0.037749	0.228808
Mode	555	918	887
Standard Deviation	0.5288	0.4559	1.9162
Sample Variance	0.3717	0.4311	1.3566
Kurtosis	0.427122	0.210182	1.273953
Skewness	995	646	969
Range	0.182434	0.044176	1.622958
Minimum	053	745	716
Maximum	-	0.465975	0.890097
Sum	377	79	392
Count	0.695074	1.232290	0.973087
Confidence Level(95.0%)	494	271	251
	1.4567	0.8128	4.8207
	0.1525	0.3114	0.9024
	1.6092	1.1242	5.7231
	19.1612	17.2531	70.2693
	31	31	31
	0.156669	0.077095	0.467290
	979	617	089

The above table shows that the 3 year Mean Returns are approximately 61.81% while the 5 year and 10 year Mean returns are 55.66% and 226.68% respectively. A larger variability in the returns is found for the duration of 10-year i.e. 1.27 as compared to that of 3 year and 5-year duration. A Platykurtic kurtosis in returns is noticed for the 3-year duration that indicates a flatter distribution compared to normal distribution. For 5-year duration the skewness is positive that means more positive extreme returns.

Table 2: Descriptive Statistics - Annualised Returns on Lumpsum Investment

	3 Year	5 Year	10 Year
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	0.1656419	0.0909967	0.1186774
Mean	35	74	19
	0.0180049	0.0050380	0.0074339
Standard Error	1	71	37
Median	0.152	0.0779	0.1128
Mode	0.1111	0.0742	0.0894
	0.1002470	0.0280507	0.0413904
Standard Deviation	94	93	07
	0.0100494	0.0007868	0.0017131
Sample Variance	8	47	66
	-		-
	0.9466771	0.3687468	0.9136352
Kurtosis	83	97	16
	0.4687611	1.0518878	0.4501743
Skewness	35	58	72
Range	0.3283	0.1068	0.1434
Minimum	0.0484	0.0557	0.0663
Maximum	0.3767	0.1625	0.2097
Sum	5.1349	2.8209	3.679
Count	31	31	31
	0.0367709	0.0102891	0.0151821
Confidence Level (95.0%)	31	14	24

The above table shows that the 3 year Mean of annualized returns are approximately 16.56% while the 5 year and 10 year Mean returns are 9.10% and 11.87% respectively. A Platkurtic kurtosis in returns is noticed for the 3-year and 10 year duration that indicates a flatter distribution compared to normal distribution. For 5-year duration the skewness is positive that means more positive extreme returns.

5.2 Hypothesis Testing

1. Hypothesis I – Differences between absolute returns of Lumpsum Investments made for 3years, 5years and 10-years durations

H₀: There is no significant difference in the average absolute returns of lumpsum investments across various investment periods.

H₁: There is significant difference in the average absolute returns of lumpsum investments across various investment periods.

Table 3: One-Way ANOVA – Average Absolute Returns

ANOVA: One-Way

SUMMARY

Groups	Count	Sum	Average	Variance
3 Year	31	19.1612	0.618103	0.182434

5 Year	31	17.2531	0.556552	0.044177
10 Year	31	70.2693	2.266752	1.622959

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	58.34835	2	29.17417	47.32048	0.0001818	3.097698
Within Groups	55.48709	90	0.616523			
Total	113.8354	92				

Hypothesis Rule	
p- value < .05	Reject Null Hypothesis
p- value > .05	Accept Null Hypothesis
<p>p-value (calculated) is 0.0001818 As, 0.0001818 < 0.05, Reject the Null Hypothesis. This means that there is significant difference in the average absolute returns of lumpsum investments across various investment periods.</p>	

2. Hypothesis II – Differences between annualized returns of Lumpsum Investments made for 3, 5- and 10-year durations

H₀: There is no significant difference in the average annualized returns of lumpsum investments across various investment periods.

H₂: There is significant difference in the average annualized returns of lumpsum investments across various investment periods.

Table 4: One-Way ANOVA – Average Absolute Returns

SUMMARY				
Groups	Count	Sum	Average	Variance
3 Year	31	5.1349	0.165642	0.010049
5 Year	31	2.8209	0.090997	0.000787
10 Year	31	3.679	0.118677	0.001713

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.088286	2	0.044143	10.55251	7.64E-05	3.097698

Within Groups	0.376485	90	0.004183
Total	0.464771	92	

Hypothesis Rule	
p- value < .05	Reject Null Hypothesis
p- value > .05	Accept Null Hypothesis
<p>The p-value (calculated) is 7.64E-05. As, 7.64E-05 < 0.05, Null hypothesis to be Rejected. This means that there is significant difference in the average annualized returns of lumpsum investments across various investment periods</p>	

For the 3-year investment period, the average absolute return is 16.56%, and the average annualized return is 5.21% (approximately $5.21\% = (1 + 0.165641935)^{(1/3)} - 1$). Annualized returns are significantly lower than absolute returns for this duration.

For the 5-year investment period, the average absolute return is 9.10%, and the average annualized return is 6.47% (approximately $6.47\% = (1 + 0.090996774)^{(1/5)} - 1$). Annualized returns are higher than absolute returns for this duration.

For the 10-year investment period, the average absolute return is 11.87%, and the average annualized return is 4.29% (approximately $4.29\% = (1 + 0.118677419)^{(1/10)} - 1$).

Annualize returns are significantly lower than absolute returns for this duration. Interpretation: Based on the comparison of absolute returns and annualized returns, we observe that the relative advantage of one over the other depends on the investment duration. For a 3-year investment period, the absolute returns are substantially higher than the annualized returns. This implies that the investment has experienced significant gains in absolute terms over the 3-year period.

On the other hand, for the 5-year investment period, the annualized returns are higher than the absolute returns. This suggests that the investment's performance, when measured on an annualized basis, is better than when evaluated purely in absolute terms. Lastly, for the 10-year investment period, the absolute returns are again considerably higher than the annualized returns, indicating significant gains over the longer duration.

Beneficial Duration:

To determine the most beneficial duration for lumpsum investments, the trade-off between short-term and long-term gains should be considered. Investors with a higher risk tolerance and seeking potential significant gains in absolute terms may prefer shorter investment durations (e.g., 3 years) where the absolute returns are relatively higher.

However, investors looking for smoother and more predictable returns may favor longer investment durations (e.g., 5 years) where the annualized returns are higher. Longer investment horizons tend to reduce the impact of short-term market volatility and may provide more stable returns over time.

6. Conclusion

The purpose of this study was to see if there was a substantial difference in the absolute and annualized returns of lumpsum investments over different investment periods, namely three, five, and ten years. We used one-way ANOVA to see if the choice of investment period had a significant impact on the absolute returns of lump sum investments in mutual fund schemes.

The findings from the analysis revealed compelling evidence of a significant difference in the absolute returns among the different investment periods. The p-value obtained from the ANOVA test was exceptionally small (approximately 0.0000763655), well below the predetermined significance level ($\alpha = 0.05$). This indicates a high level of statistical significance and provides strong support for the rejection of the null hypothesis.

As a result, it is possible to conclude that the absolute returns on lump sum contributions in mutual fund schemes vary greatly depending on the investment period chosen. Our findings emphasize the significance of carefully assessing the time horizon when making lump-sum investments in order to optimize prospective returns. Furthermore, the large disparities seen throughout investment eras highlight the importance of tailoring investment strategies to individual financial goals and risk preferences.

Individual investors, financial advisors, and fund managers should all be aware of these results. This knowledge can be used by investors to make educated judgments when allocating lump sum amounts, maximizing their investment selections based on their desired investment timeframe. Furthermore, financial advisors can provide tailored advice to their clients while considering the possible profits associated with various investment horizons. Understanding the influence of investment term on lumpsum returns can help fund managers build fund products that respond to the individual needs of investors over varied time frames.

Ultimately, the choice between absolute returns and annualized returns depends on the investor's risk profile, financial goals, and investment strategy. Diversifying the investment portfolio with a mix of both short-term and long-term investments can be a prudent approach to balance risk and return objectives.

Both absolute returns and annualized returns offer valuable insights into the performance of lumpsum investments in mutual fund schemes. The most beneficial investment duration will vary based on individual preferences, risk appetite, and financial objectives. Investors should carefully assess their investment goals and time horizon to make informed decisions that align with their unique financial circumstances.

It is crucial to acknowledge some limitations of this study. The research focused solely on lumpsum investments and did not explore the comparative performance of Systematic Investment Plans (SIP) across the same investment periods.

7. Scope for further research

Future studies may consider incorporating SIP investments to provide a comprehensive understanding of how SIP and lumpsum investments differ in their returns.

8. Conflict of Interest:

None.

9. References

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