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Analysis of the Performance of Selected Large Cap Mutual Funds of India

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Abstract

Mutual funds are considered the most accessible and simplest investment avenue for investors. As the investment focus is not only on one particular sector but on many other sectors as well. The money pooled from the investors is invested in a diversified portfolio thus giving collective returns to the investors. This research study focuses on the performance analysis of the open-ended scheme which focuses primarily on the equity large-cap funds. For the research study, 27 equity large-cap mutual funds were selected from India. The study aims to examine the performance of selected large-cap mutual funds and to identify which schemes to invest in relation to the risk involved and the amount of return obtained from each of them. The data obtained for research was secondary and the analysis was done by using various statistical tools and techniques like beta, Sharpe ratio, Jensen ratio, Treynor ratio, and ordinary least square regression (OLS). The findings of the study highlighted that there is a significant relation between risk and return. Results further depicted that Axis Bluechip Fund - Direct Plan-Growth had a beta value of more than 1.0 indicating that the underlying stock is more volatile and the R-square value explained that all independent variables explain 92.35% of returns (dependent variable).

Keywords: Large Cap, Risk, Return, Statistical Tools and Techniques

Introduction

Mutual funds refer to those investment avenues or trust that collects funds from various investors having the same investment objectives to invest in various money market securities. The regulator of Mutual funds is SEBI (Securities and Exchange Board of India) which is also the regulatory authority for the securities market and commodities markets. The Unit Trust of India (UTI) was the first Asset Management Company of India that was established in the year 1963 by the Reserve Bank of India.

UTI was the only Asset Management Company for mutual funds for the 24 years. In the year 1987, public sector mutual funds were set up by the public sector undertaking such as Life Insurance Corporation of India (LIC) and State Bank of India (SBI). Following that, private-sector mutual funds entered the mutual funds industry in the year 1993. Securities and Exchange Board of India was the governing body that started with the regulations of Mutual funds companies in 1993.

With the huge expansion and increase of Asset Management Companies investors now have various funds options for investment. Mutual funds comprise three categories i.e., Equity, Debt, and Hybrid funds. The Equity fund means the money is invested in the stocks or shares of the listed companies on the Stock Exchange. Debt fund refers to fixed-income instruments such as bonds, government securities, Liquid funds, etc. Hybrid funds are considered a balanced of both debt and equity-like arbitrage funds, balanced advantage funds, etc. Equity funds comprised of large-cap, small-cap, mid-cap, flexi cap, Tax benefit funds like ELSS (Equity Linked Savings Scheme), Stock indices such as NiftyFifty, and based on the sectors are called sectorial funds.

Mutual funds are preferred by most of the investors in the modern era as it is managed by the fund managers and proper research is done by them before investing in the assets of the selected mutual funds. Trust among the investors has also been build up as there is complete transparency of the funds being disclosed in the company's fact sheet. Mutual funds are considered less risky as compared to stock market also it beats inflation that implies it can give more return than the current inflation rate if invested for a long term.
In today's era, the investor's asset should not be limited to only one option rather the asset allocation must be done by creating a diversified portfolio.

There are two methods of investment, first is the traditional method and second is the modern method. The traditional method for investing is preferred by Gen Jones and Millenials. Traditional methods include the saving options such as fixed deposits, recurring deposits, gold, and real estate. Whereas Gen Z and Millenials focus on modern as well as traditional investment methods. The modern methods for investment include mutual funds, the stock market, gold, and real estate.

Gen Z is more focused and has a vast knowledge of the investment avenues as they are ready to take risks to get more returns. Investors invest in mutual funds and stock markets to make more money. However, there is no complete guarantee of consistent returns across the years. There is always a risk factor involved when investing money in such investment options. Some of the investors are not risk-averse whereas some investors such as Gen Z are willing to take risks

As there is no certainty of returns due to the market volatility proper research should be done to invest in a diversified manner. Risks are generally classified as per mutual funds investment in two types -

1) Systematic risk

2) Unsystematic risk

1) Systematic risks are not under the control of investors such as natural disasters and political changes.

2) Unsystematic risks are usually investment specific. These comprise three main categories –

i) Liquidity risk -n this situation, investors are unable to sell their mutual funds or liquidate their funds in times of need, as in the case of Equity Linked Saving Scheme (ELSS) which has a three-year lock-in period.

ii) Concentration risk - An investor's portfolio is concentrated on a single section rather than diversified. This is the riskiest.

iii) Market Volatility Risk - Typically, investments are made in underlying equities that are more volatile in nature due to economic conditions and other variables. Such stocks are extremely risky since they can decline dramatically.

Review of Literature

Shilpi Pal (2013) highlighted mutual funds enable portfolio diversification and risk aversion by pooling funds from investors and investing in the securities market. A fund should be evaluated by investors based on its risk tolerance, returns, and market gyrations (Malini,2017). Ankita and Deepak (2020) identified that some companies can give higher returns to investors. Equity shares provide high returns while some mutual funds provide low returns. It is prudent for investors to select the appropriate scheme based on the return and scheme objectives (Akshay Patel,2022). Ekta Rokade (2021) found that a positive stock performance leads to mutual fund growth that also gives alluring returns and reduces the market risk for the investors.

Priyanka Bhatt (2021) highlighted as investors want to earn more returns with the least risk, advisors may focus on the fund managers, investment objective, performing sectors, and cost. Mutual funds promote wealth growth, and better tax planning offers various investment choices and acts as a reliable source of income (Binod Kumar Singh,2009).
Sathya Swaroop (2009) found the most popular method for small investors is mutual funds as it allows for every inexpensive investment in a professionally managed and diversified portfolio.
If the investment is diversified into various different segments, then the mutual funds investors may collectively gain a better collection of funds from the diversified segments (Dauly Bansal,2013). Prof Sumant(2021) proved that mutual funds play a crucial role in resource mobilization and their efficient allocation to the productive resources of the global economic system.

Conceptual Framework

The two main factors of investment are risk and returns. These two variables are common for all investment avenues. Both of them are correlated with each other. If there is high risk then the returns will also be high and if there is a low risk so the returns will be low. Risk is considered the independent variable and returns are considered the dependent variable. Risk is an uncertain factor of the investment, the profit returns of the portfolio could get affected due by market volatility, economic conditions, change in cost, etc. The market is governed by various types of risks, including liquidity risk, credit risk, inflation risk, concentration risk, and market volatility risk. Risk is generally calculated using statistical tools and techniques such as standard deviation, beta, Sharpe ratio, Jensen ratio, and Treynor ratio, which have a direct impact on the number of returns provided to investors by various mutual funds.

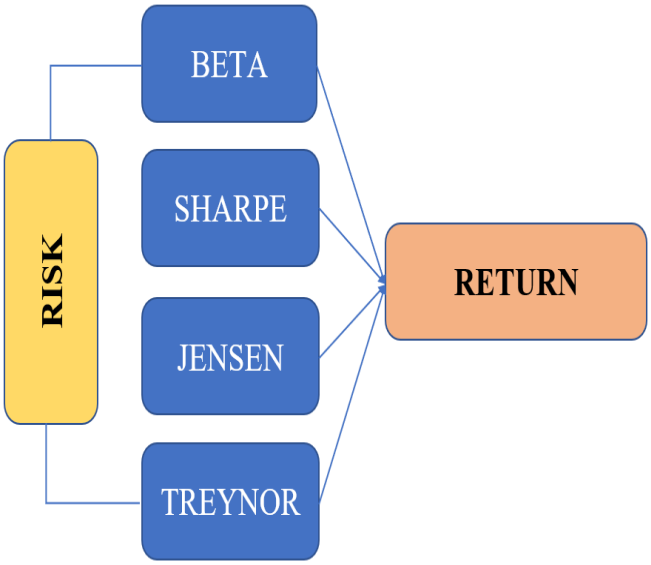

Figure 1 Conceptual Framework

Objective of the study

To study whether there is any relation between risk and return of the selected large-cap mutual funds.

Hypothesis of the study

The hypothesis have been framed on the risk and return of large-cap mutual funds.

H0: There is no significant relation between risk and return of the selected large-cap mutual funds.

H1: There is a significant relation between risk and return of the selected large-cap mutual funds.

Research Methodology

The study relied on secondary data. Secondary data was gathered from a variety of sources, including websites, journals, and fund fact sheets of various

Asset Management Companies. The main source of this current data was collected from the website **https://www.moneycontrol.com/mutual-funds/performance-tracker/risk-ratios/large-cap-fund.html** as of the date 4th October 2022**.**
Various statistical tools and techniques were used to calculate the risk and return measures of the selected large-cap mutual funds for the past 3 years. The mutual funds ratios are used to calculate the risk and return factors for mutual fund schemes.

Tools of Analysis

Beta:
A stock's anticipated movement in relation to changes in the entire market is measured by the concept of **beta.** When compared to the overall market, a beta value that is higher than 1.0 implies that the underlying stock is more volatile, while a beta value that is lower than 1.0 indicates that the stock is less volatile.

Sharpe Ratio:
The **Sharpe Ratio** shows how much money a mutual fund could make based on how much risk it takes. The risk-adjusted returns are how much more money an investment makes than a risk-free asset like a fixed deposit. But higher returns mean there is more risk. A Sharpe ratio that falls between 1 and 2 is regarded as satisfactory. Any result that is higher than three is considered exceptional, while a ratio of between two and three is considered very good.

Jensen Ratio:
The **Jensen's** measure, also known as Jensen's alpha, is a risk-adjusted performance metric that measures whether the average return on an investment or portfolio is higher or lower than the return forecasted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. If the value is positive, it means that the asset did better than expected. If the value is negative, it means that the asset did worse than expected.

Treynor Ratio:
The **Treynor ratio**, which is sometimes referred to as the reward-to-volatility ratio, is a performance indicator that is used to determine the amount of additional return that a portfolio has created for each individual unit of risk that it has assumed. In this context, "excess return" refers to the amount of money made on an investment in addition to the amount of money that could have been made on a risk-free investment. When a stock's beta value is in the negative range, the Treynor ratio is less beneficial than usual.

Table no.1: Performance Analysis of Large-Cap Mutual Funds (Risk and return analysis)

ID	Scheme Name	Beta	Sharpe Ratio	Jensen's Alpha	Treynor's Ratio	Return (3Y)
1	ICICI Prudential Bluechip Fund - Direct Plan - Growth	0.94	0.56	0.93	0.12	18%
2	Mahindra Manulife Large Cap Pragati Yojana - Direct Plan - Growth	0.93	0.54	0.69	0.12	17%
3	Nippon India Large Cap Fund - Direct Plan - Growth	0.98	0.56	0.92	0.13	19%
4	Kotak Bluechip Fund - Direct Plan - Growth	0.95	0.59	1.56	0.13	18%
5	HDFC Top 100 Fund - Direct Plan - Growth	0.97	0.46	-0.95	0.10	16%
6	JM Large Cap Fund - (Direct) - Growth	0.58	0.63	2.06	0.15	15%
7	dSP Top 100 Equity Fund - Direct Plan - Growth	0.96	0.53	-0.11	0.12	17%
8	IDBI India Top 100 Equity Fund - Direct Plan - Growth	0.95	0.61	1.92	0.13	19%
9	Edelweiss Large Cap Fund - Direct Plan - Growth	0.92	0.54	1.70	0.12	17%
10	Mirae Asset Large Cap Fund - Direct Plan - Growth	0.97	0.53	0.47	0.12	17%
11	Franklin India Bluechip Fund - Direct - Growth	0.95	0.51	1.57	0.12	17%
12	Invesco India Largecap Fund - Direct Plan - Growth	0.93	0.54	1.00	0.12	17%
13	Aditya Birla Sun Life Frontline Equity Fund - Direct Plan - Growth	0.95	0.53	0.46	0.12	17%
14	Baroda BNP Paribas Large Cap Fund - Direct Plan - Growth	0.90	0.51	-0.10	0.11	16%
15	Tata Large Cap Fund - Direct Plan - Growth	0.99	0.47	-0.84	0.11	16%
16	Union Largecap Fund - Direct Plan - Growth	0.97	0.47	-1.32	0.11	16%
17	Canara Robeco Bluechip Equity Fund - Direct Plan - Growth	0.89	0.65	2.29	0.14	19%
18	UTI Mastershare Unit Scheme - Direct Plan - Growth	0.93	0.59	2.36	0.13	18%
19	IDFC Large Cap Fund - Direct Plan - Growth	0.93	0.53	0.03	0.12	17%
20	HSBC Large Cap Equity Fund - Direct Plan - Growth	0.98	0.46	-1.19	0.10	16%
21	PGIM India Large Cap Fund - Direct Plan - Growth	0.96	0.42	-1.97	0.09	14%
22	Indiabulls Bluechip Fund - Direct Plan - Growth	0.96	0.36	-3.23	0.08	13%
23	LIC MF Large Cap Fund - Direct Plan - Growth	0.90	0.45	-1.11	0.10	15%
24	L&T India Large Cap Fund - Direct Plan - Growth	0.96	0.47	-1.42	0.10	16%
25	Taurus Largecap Equity Fund - Direct Plan - Growth	0.93	0.42	-2.36	0.09	14%
26	DSP Top 100 Equity Fund - Direct Plan - Growth	0.98	0.34	-4.16	0.08	13%
27	Axis Bluechip Fund - Direct Plan - Growth	1.33	0.43	-2.71	0.06	14%

Source: Data for the last 3 years taken on 4th October 2022 from the moneycontrol.com and author's own calculations.

Interpretation

The performance of the 27 - equity large-cap mutual funds is shown in Table no. 1. The performance was calculated using various mutual fund ratios such as beta, Sharpe ratio, Jensen ratio, and Treynor ratio. These ratios provide information about various fund factors such as market volatility, performing funds, and risk and return factors.

The beta ratio depicts the stock's expected movement in the overall market, which indicates whether the stock is more volatile further implying that it carries high risk or whether the stock is less volatile thus implying less risk. In the above table 1, the 26 tabs highlighted with the green color of value lower than 1.0 implies that the stocks of those mutual funds are less volatile and the stock of Axis-Bluechip Fund-Direct Plan-Growth is highlighted with the red color which tells that the stock is more volatile as its value is more than 1.0

A Sharpe ratio is a tool that tells about the risk-adjusted performance of an investment versus a risk-free fixed deposit. From the above table, it can be interpreted that all the 27 large-cap mutual fund's value is less than 1 indicating their returns are more. However, a Sharpe ratio that falls between the value of 1 and 2 is regarded as satisfactory as it not only gives better risk-adjusted return but also there is the potential to earn more returns.

Jensen's alpha tells about whether the average return on investment of an asset's performance is better or not as compared to Capital Asset Pricing Model (CAPM). Some mutual funds highlighted in red (Table no.1) such as HDFC Top 100 Fund (-0.95), SBI Blue Chip Fund (-0.11), Baroda BNP Paribas Large Cap Fund (-0.10), Tata Large Cap Fund (-0.84) and other funds are negative indicating that the asset did not perform as expected.

Treynor ratio is also known as the reward-to-volatility ratio. This ratio indicates the performance of the mutual funds. If the risk is low and the mutual fund is giving excess returns then the focus should be on those funds that carry less risk and give high returns. In the above table, the tabs highlighted in red does depict that the five mutual funds with a Treynor ratio of less than 0.10 highlighting they fails to provide better returns despite of carrying more risk.

The past three years returns of mutual funds shows that majority mutual funds are yielding more than 15% which tells that the assets are doing good and are less risky and volatile. Although some funds are giving returns of less than 15% despite of having higher volatility.

Testing of Hypothesis

$Return_i = \alpha 0 + \beta 0$ (BETAi) + $\beta 1$ (Sharpe Ratio$i$) + $\beta 2$ (Jensen Alpha$i$) + $\beta 3$ (Treynor$i$) + $\mathcal{E}i$

α = *Intercept*
β = Constant term
Ɛ = Error
I = Target mutual funds

Dependent Variable: RETURN (3Yrs)
Method: Least Squares
Date: 10/06/22 Time: 20:07
Sample: 1 - 27
Included observations: 27

Table no.2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	0.107016	0.015185	7.047631	0.0000
SHARPE RATIO	-0.016535	0.047790	-0.345992	0.7326
JENSEN ALPHA	0.002969	0.001983	1.497469	0.1485
TREYNOR RATIO	0.904902	0.197373	4.584733	0.0001
C	-0.029166	0.031890	-0.914605	0.3703
Adjusted R-squared	0.923518	S.D. dependent var		0.017648
S.E. of regression	0.004881	Akaike info criterion		-7.641562
Sum squared resid	0.000524	Schwarz criterion		-7.401592
Log likelihood	108.1611	Hannan-Quinn criter.		-7.570206
F-statistic	79.48761	Durbin-Watson stat		1.705224
Prob(F-statistic)	0.000000			

Source: Author's own calculations

Interpretation

Table no. 2 indicates that the R2 shows that all independent variables explain 92.35% of Returns. F-statistics that was used for testing the reliability of the whole equation (Model Fit) indicated F-value as 79.48761 and p-value as 0.0000, confirming that the model is fit.

If the p-value is less than the significant value (0.05) regression model is considered a fit and if the p-value is more than the significant value (0.05) then the model is not considered a fit.

The results of table 2, clearly indicate that all independent variable influences Returns. The Durbin-Watson value is 1.705224 indicating that the model does not have a problem with Autocorrelation. This test statistic is used to find out the autocorrelation between similar series of data. If the Durbin-Watson value < Critical value (below 2) then there is a positive autocorrelation whereas if the Durbin-Watson value > Critical value (above 2) there is no significant existence of the autocorrelation.

Null Hypothesis (H0)

The null hypothesis for the above test is rejected as there is significant relation between the risk and return of large-cap mutual funds.

Alternate Hypothesis (H1)

The alternative hypothesis is accepted. This means that the risk and return factors are directly proportional to each other, as increasing one variable affects the other and vice versa. This signifies that if the risk is high, the fund's return will be high, and if the risk is low, the return for the selected mutual funds will be low with exceptional of few mutual funds.

Conclusion

Equity large-cap mutual funds provide better returns if the funds are invested in the long run. Money is invested in the Top 100 companies which are stable and will be stable in the long run thus giving investors the benefit of more profitable returns in the future. All mutual funds carry some amount of risk and the returns vary according to the different factors of the securities market. Investors should maintain a diversified portfolio to earn more money from various investment sources.

Both the risk and returns are the major factors for determining the performance of mutual funds and are directly proportional to each other thus providing a relation between risk and return.

Limitations of the study and future scope

No research is fully completed, and with the changing time frame, some gaps might occur in the research, which has its limitations. As the secondary data is collected it is necessary to carefully examine the data before implying it for research.
There had been a time constraint for the data, in future the research can also be done on the cross - country mutual funds.
The data collected for the study focused on selected large-cap mutual funds.
No other equity funds such as small cap, mid cap, or flexi cap were selected.
The average returns of the past 3 years were considered to get the findings.