

Performance Evaluation Of Mutual Funds Before And During The Outbreak Of Covid-19 Pandemic In India. (A Case Study Of Selected Companies)

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ABSTRACT –

Mutual Fund companies are financial intermediaries providing financial services to small investors through mobilization of funds, when the investors invest in a mutual fund; they are buying shares or units of the mutual fund and become a shareholder of the fund. Mutual funds are one of the best investments ever created because they are very cost efficient and very easy to invest in. Thus, the Rupee is generated in the form of big returns to promote financial excellence. In this research paper an attempt is made on a comparative performance analysis of the growth-oriented equity diversified schemes for 5 months prior to outbreak of Covid-19 and 5 months during Covid-19 on the basis of return and risk evaluation. The analysis was achieved by assessing various financial tests like Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation and Beta. The used data is opening and closing NAVs for five months before Covid-19 effect and five months during Covid-19 pandemic. The source of data is the website of Association of Mutual Funds in India (AMFI) and Money Control and 12 schemes were used for analysis. The study of this paper improves the necessity required before investing in any mutual fund. With the inclination of investment in mutual fund gaining vogue every day. It is also important to study the risk involved and the substantial value of returns incurred through it.

Index Terms: Covid-19 pandemic, Net Assets Value, Sharpe Index, Treynor.

1. INTRODUCTION

A mutual fund is a professionally-managed form of collective investments that pools money from many investors and invests it in stocks, bonds, short-term money market instruments, and/or other securities. In a mutual fund, the fund manager, who is also known as the portfolio manager, trades the fund's underlying securities, realizing capital gains or losses, and collects the dividend or interest income.

According to Weston J. Fred and Brigham, Eugene F., [1] mutual funds are “Corporations which accept dollars from savers and then use these dollars to buy stocks, long term bonds, and short term debt instruments issued by business or government units, these corporations’ pool funds and thus reduce risk by diversification”.

According to Kamm, J.O., ‘Economics of Investments’ [2] describes the open end investment company as “an organization formed for the investment of funds obtained from individuals and institutional investors who in exchange for the funds receive shares which can be redeemed at any time at their underlying asset values”.

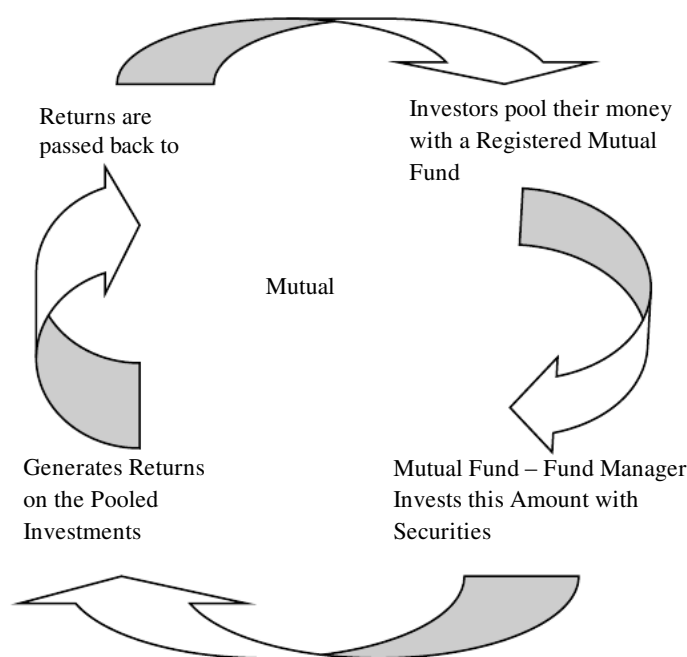


Figure 1: Registered mutual fund

The investment proceeds are then passed along to the individual investors. The value of a share of the mutual fund, known as the Net Asset Value per share (NAV), is calculated daily based on the total value of the fund divided by the number of shares currently issued and outstanding.

The growth of the industry mainly depended on awareness of the participants and investors in that industry. However, due to fewer ideas about the mutual fund industry, it may be an advantage to the other investment options like the banking sector. Volatility in the equity market, dropping of interest rates and rising inflation make a deadly disaster for the investor for whom mutual funds offer a route out of the impasse. The returns of every mutual fund like other returns in the capital market are risky due to the applicability of same forces such as regulatory frameworks, interest rate patterns, staging of company and government policies etc.

There is, therefore, a strong need for improving the awareness in a big way. It is important to study about the returns given by AMC Mutual Funds and perform a comparative analysis. Remember, every problem has several researches involved in it, each backed by study. In recent times the important trends in the mutual fund industry is the aggressive expansion of foreign owned Mutual Fund companies and the decline of the companies floated by nationalized banks and smaller private sector players. The performance study of Mutual

Funds tries to understand behaviour of the mutual funds returns and their performance ranking as per sharpes' and treynors' index in the period prior to the Covid-19 pandemic as well as during outbreak of Covid-19 pandemic.

A. Background to the Problem

From its humble beginning in 1963 with Unit Trust of India (UTI), the Indian Mutual Indian fund industry has come a long way since then. Let's trace the journey of mutual funds from the time they were first introduced in the market.

While mutual fund investment still accounts for only 3.4% of total investments by individual investors in India and AUM: GDP ratio is a mere 7%, it is also an indication of the tremendous untapped potential.

In January 2017, the mutual fund assets clocked the highest growth in 7 years to accumulate a total corpus of around Rs17 trillion. As of May 2017, AUM of the industry stands at Rs19.04 lakh crore, there are 57.2 million accounts (folios) in total and 44 fund houses are operational in the market. As of July 2017, the asset base has already crossed Rs20 trillion. For FY2016-17, direct plans have outperformed regular plans. Direct plans have given at least 1% additional returns (per annum) on an average to equity mutual fund investors.

The technology is further enhancing the growth of mutual funds in the form of paperless transactions (for example, e-KYC, BSE Star MF, NSE NMFII, digital wallets), online distribution platforms (for example, IFAXpress and iFAST Financial) and robo-advisors (for example, MoneyFront, ArthaYantra, Scripbox, FundsIndia etc).

The next revolutionary step in the Indian mutual fund industry will be the sale of mutual funds through e-commerce enterprises. In 2016, SEBI has submitted its recommendation on allowing online marketplaces such as Amazon, Flipkart and Paytm to offer mutual funds on their platforms.

B. Statement of the Problem

Mutual funds are large pools of money that invest in assets like stocks and bonds. The first step in selecting a fund is to determine the investing style and determine if it suits your objectives. It is also a good idea to scrutinize the performance of a fund over many years and look for consistency in returns. Comparing a mutual fund to its peers gives a better sense about relative performance and fees. Hence, this study is to find out the impact of Covid-19 pandemic on mutual fund industry as well as fluctuation of Net Asset Value and its performance.

C. Purpose of the Study

Economic development of every country depends on the strength and performance of the industries, which are in turn dependent on mobilization of capital as well as sales and profit of the industry. So, mobilization of capital plays a vital role for development of the industry in terms of expansion and diversification which could be done by mobilized savings of the investors or participants in the capital market. Hence, the significance of this study helps to understand how investors are affected in the period prior to Covid-19 pandemic as well as during the outbreak of Covid-19 pandemic in terms of their risk and returns.

2. REVIEW OF LITERATURE

The present study deals with the review of literature on 'Evaluating the Performance of Indian Mutual Fund Schemes'. Review of some of the studies is presented in the following discussion.

In 1966, Sharpe's research study in evaluating the performance of 34 mutual funds was very effective. Considering MFs for a period of ten years (1954-1963), he evaluated the performance based on R/V ratio (Return to Variability ratio) and further differentiated the funds based on the risk. The study also identifies the relation among the expenses incurred in various funds and ranked the funds based on the ratio of expenses to net assets [3].

In 1966, performed an attempt to explore the chances of prediction in the mutual funds market by the fund managers considering 57 mutual fund schemes in the US and could not find any mechanism in prognosticating the market swings [4].

In their study, An Analysis of Quarterly Portfolio Holdings using jensens measures and ranked mutual funds based on NAV stated that superior performance among aggressive growth funds and growth funds may exist. In the study it's been found that the portfolio of smallest mutual funds also had a significant performance, but their actual returns could not attract the investors as they have higher transaction costs [5].

After reviewed different mutual fund investment policies and strategies by various researchers in previous years in and outside India, tracing the contribution of Sharpe, Jensens and Treynor methods as important tools in evaluation of mutual fund performance. A faster growth rate has in Indian Mutual Fund industry has been observed in the previous decade as the Mutual fund performance have crossed the market return since 2012 [6].

Used statistical tools like expense ratio, CAGR, sharpe ratio, standard deviation, beta and r squared. Found that by comparing CAGR all the funds performed equally and then he used expense ratio to filter them. So the remaining is ranked based on standard deviation assuming the lower risk fund ranked top [7].

In her study, in analyzing the financial performance in terms of risk –return relationship of selected mutual fund schemes (mid & small cap, large-cap, multi cap, infrastructure and hybrid) by applying statistical tools namely alpha, beta, standard deviation, r squared and sharpe ratio and comparing the NAVs of three years (2012-2014) have observed an effective performance of mutual funds over the benchmark for the period 2013 [8].

“Comparative analysis of mutual fund schemes available at Kotak mutual fund and HDFC mutual fund”. The study concludes that Kotak mutual fund schemes are more destructive in Large Cap Equity schemes and HDFC mutual fund schemes are more destructive in Mid Cap Equity schemes, whereas both the company schemes are very well managed in the debt market. Kotak Select Focus is the best scheme in Large cap Equity, HDFC [9].

The study of equity mutual fund analysis using three models- Sharpe, Treynor, and Jensen based on their return for a three-year period. It was interpreted that the funds with high alpha did not earn enough amount. Although one of the selected funds have ranked better compared to the others, he could not observe a consistent performance over the three years from any of them [10]. Conducted a literature review with a view of to provide a better understanding of Indian mutual fund industry in 2017. This study included a review of various papers published over the past decade related to comparative performance, growth and performance, investor’s perception towards mutual funds etc. The conclusion highlighted the attention to be paid to the correlation between the funds and market return and the impact of funds specific characteristics on the fund performance. Evaluation of ratios performance and ranks has to be focused more [11].

Author has conducted study on 30 mutual fund schemes from various dimensions by reviewing the literature, applying sharpe, treynor, m square and sortino to determine the fund performance, jensens alpha to determine the selective skill of fund managers, Treynor-Mazuy (TM) and Henriksson-Merton (HM) quadratic regression model is used to detect the market timing ability of the mutual fund managers and observed positive performance from 19 schemes. This study suggests that regulation should be passed to the mutual fund industry to disclose the methods of stock selection in offer for awareness of the investors [12].

Performance evaluation of mutual funds: a study of selected equity diversified mutual funds in India, this study utilized benchmark portfolios according to the scheme objective such as BSE Sensex, for all growth/equity schemes. The performance of sample mutual fund schemes has been evaluated in terms of return and risk analysis, and risk adjusted performance measures such as Sharpe ratio and Treynor ratio. In nut shell, the performance of mutual fund in terms of Average returns, thirty percent of the diversified fund schemes have shown higher and superior returns and remaining have shown inferior returns. In terms of standard deviation, ninety percent of the selected schemes are less risky than the market [13].

12 open ended mutual funds were selected and analyzed for a period of one year (1-1-2018 to 31-12-2018) producing a risk-return relationship and helping investors to choose the best mutual fund. Standard deviation and beta are calculated quarterly and funds are ranked using sharpe, treynor and jensens index. Axis blue chip fund was ranked top in all the three indices. The study concluded that an equity open end mutual fund does not give an impressive performance throughout the year. However, annual returns may be considered for the better understanding of fund performance rather than quarterly [14].

A. Objectives of the Study:

Intention of this study is to appraising the performance of mutual funds from various selected mutual fund houses under the category of Large Cap fund in India. More specifically the movement of this study has been done to reclaim the objectives.

- To study the performance evaluation of selected Large Cap mutual funds in terms of their return and risk from various fund houses in India.
- To understand behaviour of NAV of various schemes prior and during outbreak of Covid-19 pandemic in India.
- To collate mutual fund performance of various schemes under the category of Large Cap fund in India by using Sharpe and Treynor model.

B. Source of Data

This study mainly depended on secondary data. The secondary data about twelve mutual fund schemes under the category of large cap fund from twelve fund houses. Evaluated the performance of sampled mutual fund schemes with the help of Net Asset Value (NAV). The needed daily NAV for sampled mutual funds was taken from the mutual funds websites called Association of Mutual Funds in India (AMFI). The other related information was collected from books, journals, magazines and various websites.

3. DATA ANALYSIS & INTERPRETATION

In the below case the beginning and ending Net Asset Values concerned to various funds under the category of Large Cap Fund has been extracted from published information prior five of Covid-19 pandemic started from 01st August 2019 to 31st December 2019.

Table 1: Data analysis

Large Cap Fund	Fund House	NAV as on 01 st August 2019 (Beginning)	NAV as on 31 st December 2019 (Ending)
Canara RobecoBluechip Equity Fund – Growth	Canara Robeco Mutual Fund	23.99	27.15
JM Large Cap Fund -Growth	JM Financial Mutual Fund	65.13	68.17
Axis Bluechip Fund -Growth	Axis Mutual Fund	28.60	32.05
BNP Paribas Large Cap Fund-Growth	BNP Paribas Mutual Fund	87.42	97.33
IDBI India top 100 Equity Fund-Growth	IDBI Mutual Fund	23.03	25.81
IDFC Large Cap Regular Plan	IDFC Mutual Fund	30.66	33.94
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	204.16	225.80
Baroda Large Cap Fund – Plan A –	Baroda Pioneer	13.74	15.29

Growth	Mutual Fund		
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	40.21	44.49
Indiabulls Bluechip Fund – Existing Plan – Growth	Indiabulls Mutual Funds	20.20	22.57
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	27.26	29.87
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	25.67	29.23

- NAV means the Net Asset Value of the Fund
- Such NAV is calculated as Under

$$\text{NAV} = \frac{\text{Total Market Value of the Fund}}{\text{No. Of Units Outstanding}}$$

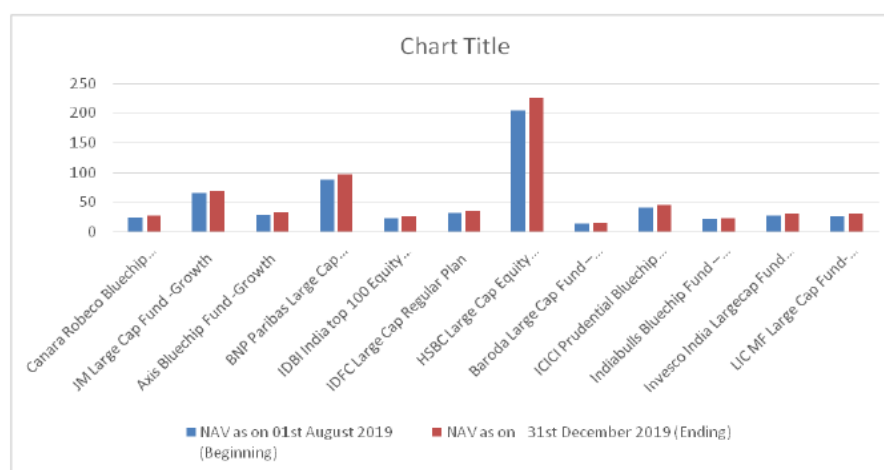


Figure 2: Graphical Representation of Net Asset Value under the Category of Large Cap Funds from the above reference table

A. Interpretation

The above graphical representation shows various Net Asset Values from various mutual fund houses under the category of Large Cap Funds prior five months of Covid-19 pandemic immediately preceding 31st December 2019. This representation helps us to understand the positions of NAV of various funds. HSBC Large Cap Equity Fund –Growth is possessing the highest value of NAV as per the above reference table. BNP Paribas Large Cap Fund occupied second position in terms of NAV i.e., next to the HSBC performance. The performance of other funds on the basis of NAV is very low as compared to HSBC Large Cap Equity Fund & BNP Paribas Large Cap Fund.

B. Five Months Returns

Table 2: Performance of the funds in past in 5 months immediately preceding 31st December 2019

Large Cap Fund	Fund House	5 Months Returns
Canara RobecoBluechip Equity Fund –Growth	Canara Robeco Mutual Fund	13.17%
JM Large Cap Fund – Growth	JM Financial Mutual Fund	4.66%
Axis Bluechip Fund – Growth	Axis Mutual Fund	12.06%
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	11.34%
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	12.07%
IDFC Large Cap Regular Plan	IDFC Mutual Fund	10.70%
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	10.60%
Baroda Large Cap Fund – Plan A – Growth	Baroda Pioneer Mutual Fund	11.28%
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	10.64%
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	11.73%
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	9.57%
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	13.87%

Return is to be calculated as the differences in the NAV positions prior 5 months of Covid-19 pandemic by taking into consideration the beginning and ending NAV's. These returns are calculated in the short run, so the dividend is not considered. Hence, the % return is directly indicating the performance in capital value of the fund.

$$\% \text{ Retu} = \frac{\text{Ending NAV} - \text{Beginning NAV}}{\text{Beginning NAV}} \times 100 \quad \text{X } 100$$

$$\text{Canara RobecoBluechip Equity Fund –Growth} = (27.15 - 23.99)/23.99 \times 100 = 13.17\%$$

$$\text{JM Large Cap Fund –Growth} = (68.17 - 65.13)/65.13 \times 100 = 4.66\%$$

$$\text{Axis Bluechip Fund –Growth} = (32.05 - 28.60)/28.60 \times 100 = 12.06\%$$

$$\text{BNP Paribas Large Cap Fund- Growth} = (97.33 - 87.42)/87.42 \times 100 = 11.34\%$$

$$\text{IDBI India top 100 Equity Fund- Growth} = (25.81 - 23.03)/23.03 \times 100 = 12.07\%$$

IDFC Large Cap Regular Plan	$= (33.94 - 30.66)/30.66 \times 100 = 10.70\%$
HSBC Large Cap Equity Fund-Growth	$= (225.80 - 204.16)/204.16 \times 100 = 10.60\%$
Baroda Large Cap Fund – Plan A –Growth	$= (15.29 - 13.74)/13.74 \times 100 = 11.28\%$
ICICI Prudential Bluechip Fund – Growth	$= (44.49 - 40.21)/40.21 \times 100 = 10.64\%$
IndiabullsBluechip Fund –Existing Plan – Growth	$= (22.57 - 20.20)/20.20 \times 100 = 11.73\%$
Invesco India Large Cap Fund – Growth	$= (29.87 - 27.26)/27.26 \times 100 = 9.57\%$
LIC MF Large Cap Fund-Growth	$= (29.23 - 25.67)/25.67 \times 100 = 13.87\%$



Figure 3: Graphical Representation of 5 months returns prior 5 months of Covid-19 pandemic

C. Interpretation

During this period all investors' returns were satisfactory because this period was not a part of Corona time. Among all returns from the above statement, LIC MF Large Cap Fund is fetching more returns to their investors. Canara RobecoBluechip Equity Fund –Growth has occupied second position in the above race i.e., next to the LIC MF Large Cap Fund.

Table 3: Performance of The Funds Based on Sharpe Method

Large Cap Fund	Fund House	Standard Deviation	Ri	Sharpe Index
Canara RobecoBluechip Equity Fund – Growth	Canara Robeco Mutual Fund	18.23	13.17 %	0.39
JM Large Cap Fund –Growth	JM Financial Mutual Fund	8.83	4.66 %	- 0.15
Axis Bluechip Fund –Growth	Axis Mutual Fund	16.96	12.06 %	0.36
BNP Paribas Large Cap Fund-	BNP Paribas Mutual Fund	17.85	11.34 %	0.30

Growth				
IDBI India top 100 Equity Fund-Growth	IDBI Mutual Fund	18.94	12.07 %	0.32
IDFC Large Cap Regular Plan	IDFC Mutual Fund	18.96	10.70 %	0.25
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	19.6	10.60 %	0.23
Baroda Large Cap Fund – Plan A – Growth	Baroda Pioneer Mutual Fund	18.67	11.28 %	0.28
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	19.34	10.64 %	0.24
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	19.34	11.73 %	0.30
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	19.3	9.57 %	0.18
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	18.1	13.87 %	0.43

- R_f = Risk Free Rate of Return
- R_i = Rate of Return on i security
- Standard Deviation is the variation in the return of the respective funds. Such figures are obtained in course of field work
- Under Sharpe Model, the INDEX is Excess Return for Risk taken. Standard Deviation is a measure of Risk. Hence, the index indicates the excess return over the Risk-free rate for 1 unit of Risk taken. Selection of the fund is generally based on higher Index.
- Rate of risk less return (Interest rate offered by RBI on bonds) is taken @ 6.00% p.a

$$\text{Sharpe Index} = \frac{R_i - R_f}{SD}$$

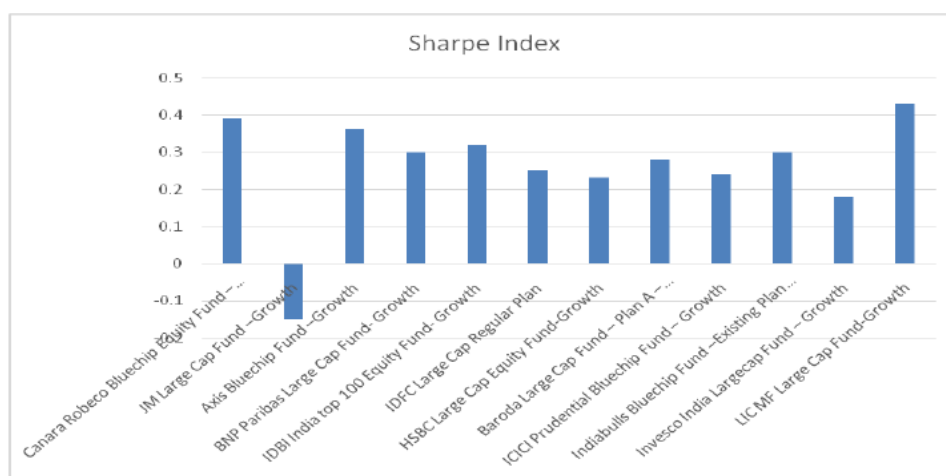


Figure 4: Graphical Presentation of Sharpe Index Values from the above table

D. Interpretation

As per the Sharpe Index method, LIC MF Large Cap Fund-Growth is the best performer and placed in the 1st position according to ranking. And Canara RobecoBluechip fund and Axis Bluechip fund- Growth occupied 2nd and 3rd ranks respectively. Even the time prior to the outbreak of Covid-19, JM Large Cap Fund returns not met riskless interest rate. Hence, it seems that this period damaged investors of JM Large Cap Fund.

Table 4: Performance Of The Funds Based On Treynor Method

Large Cap Fund	Fund House	Beta	Ri	Treynor
Canara RobecoBluechip Equity Fund –Growth	Canara Robeco Mutual Fund	0.89	13.17%	8.056
JM Large Cap Fund – Growth	JM Financial Mutual Fund	0.4	4.66%	-3.35
Axis Bluechip Fund – Growth	Axis Mutual Fund	0.72	12.06%	8.416
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	0.86	11.34%	6.209
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	0.93	12.07%	6.526
IDFC Large Cap Regular Plan	IDFC Mutual Fund	0.92	10.70%	5.109
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	0.95	10.60%	4.842
Baroda Large Cap Fund – Plan A –Growth	Baroda Pioneer Mutual Fund	0.91	11.28%	5.802
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	0.93	10.64%	4.989
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	0.93	11.73%	6.161
Invesco India Largecap	Invesco Mutual Fund	0.92	9.	3.88

Fund – Growth			57 %	
LIC MF Large Cap Fund- Growth	LIC Mutual Fund	0.88	13 .8 7 %	8.94 3

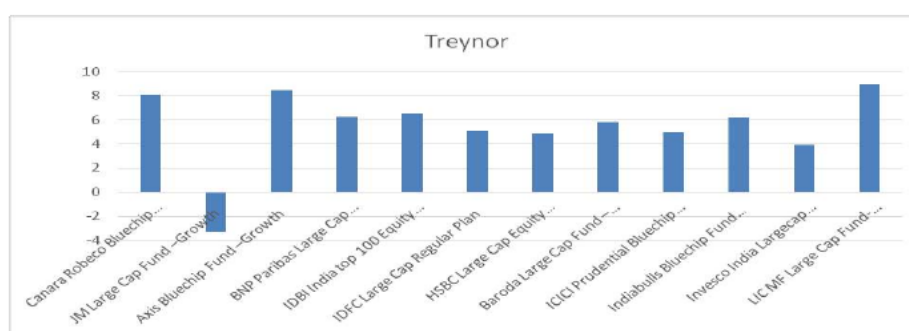
$$\text{Treynor Index} = \frac{R_i - R_f}{\text{Beta}}$$

R_i = Rate of Return on i Security

R_f = Risk-free rate of return

- Higher the Index will be higher performer
- Rate of risk less return (Interest rate offered by RBI on bond) is taken @ 6.00% p.a
- While in the Sharpe model, the Standard Deviation is used as a measure of Risk associated with variations within the funds, which means ranking was done based on the unsystematic risk i.e., Standard Deviation. Whereas in Treynor model, Beta value is taken as an index of market variations. Which means ranking was done based on the systematic risk.

Figure 5: Graphical Presentation of Treynor Index Values from the above table



E. Interpretation

As per the Treynor Index method, calculation is done based on systematic risk. LIC MF Large Cap Fund-Growth is the best performer and placed in the 1st position according to ranking. And Axis Bluechip fund- Growth and Canara RobecoBluechip funds occupied 2nd and 3rd ranks respectively. According to Sharpe index method Axis Bluechip fund and Canara RebecoBluechip fund ranking positions were reversed to Treynor method. Because of that ranking was given based on unsystematic risk. Even prior to the outbreak of Covid-19, JM Large Cap Fund returns had not met riskless interest rates. Hence, we can say that this period damaged the JM Large Cap Fund investors.

Table V: In the below case the beginning and ending of Net Asset Value concerned to various funds under the category of Large Cap Fund has been extracted from published information during Covid-19 pandemic started from 01st January 2020 to 01st June 2020.

Large Cap Fund	Fund House	NAV as on 01 st January 2020 (Beginning)	NAV as on 01 st June 2020 (Ending)
Canara RobecoBluechip	Canara	27.22	24.17

Equity Fund –Growth	Robeco Mutual Fund		
JM Large Cap Fund – Growth	JM Financial Mutual Fund	68.23	63.57
Axis Bluechip Fund – Growth	Axis Mutual Fund	32.03	27.62
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	97.38	83.92
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	25.82	21.92
IDFC Large Cap Regular Plan	IDFC Mutual Fund	33.93	28.95
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	226.12	186.44
Baroda Large Cap Fund – Plan A –Growth	Baroda Pioneer Mutual Fund	15.32	12.94
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	44.56	36.65
IndiabullsBluechip Fund – Existing Plan – Growth	Indiabulls Mutual Funds	22.58	18.12
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	29.87	25.53
LIC MF Large Cap Fund- Growth	LIC Mutual Fund	29.22	24.02

- NAV means the Net Asset Value of the Fund
- Such NAV is calculated as Under

$$\text{NAV} = \frac{\text{Total Market Value of the Fund}}{\text{No. Of Units Outstanding}}$$

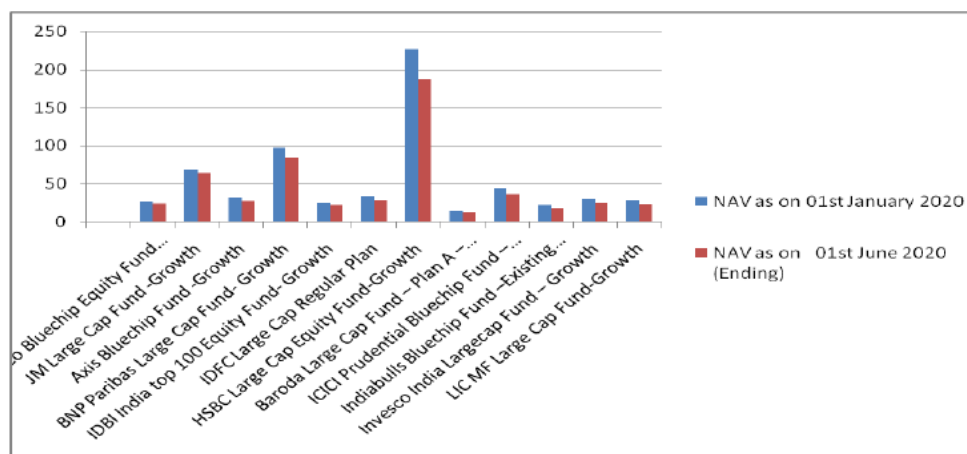


Figure 6: Graphical Representation of Net Asset Value under the Category of Large Cap Funds from the above reference table

F. Interpretation

The above graphical representation shows various Net Asset Values from various mutual fund houses under the category of Large Cap Funds during the Covid-19 pandemic in the past in 5 months immediately preceding 01st June 2020. The above values have been extracted from AMFI, dated on 01st June 2020. This representation helps us to understand the positions of NAV of various funds. HSBC Large Cap Equity Fund –Growth is processing the highest value of NAV as per the above reference table. BNP Paribas Large Cap Fund occupied second position in terms of NAV i.e., next to the HSBC performance. The performance of other funds on the basis of NAV is very low as compared to HSBC Large Cap Equity Fund & BNP Paribas Large Cap Fund.

G. Five Months Returns

Table 6: Performance of the funds in past in 5 months immediately preceding 01st June 2020

Large Cap Fund	Fund House	5 Months Returns
Canara Robeco Bluechip Equity Fund – Growth	Canara Robeco Mutual Fund	-11.21%
JM Large Cap Fund –Growth	JM Financial Mutual Fund	-6.83%
Axis Bluechip Fund –Growth	Axis Mutual Fund	-13.77%
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	-13.82%
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	-15.10%
IDFC Large Cap Regular Plan	IDFC Mutual Fund	-14.65%
HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	-17.55%
Baroda Large Cap	Baroda Pioneer Mutual	-15.54%

Fund – Plan A – Growth	Fund	
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	-17.75%
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	-19.75%
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	-14.53%
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	-17.79%

Return is to be calculated as the differences in the NAV positions during Covid-19 pandemic by taking into consideration the beginning and ending NAV's of 5 months. These returns are calculated in the short run, so the dividend is not considered. Hence, the % return is directly indicating the performance in capital value of the fund.

$$\% \text{ Retu} = \frac{\text{Ending NAV} - \text{Beginning NAV}}{\text{Beginning NAV}} \times 100$$

Canara RobecoBluechip Equity Fund –Growth	= (24.17- 27.22)/27.22 x 100 = -11.21%
JM Large Cap Fund –Growth	= (63.57 - 68.23)/68.23 x 100 = -6.83%
Axis Bluechip Fund –Growth	= (27.62 – 32.03)/32.03 x 100 = -13.77%
BNP Paribas Large Cap Fund- Growth	= (83.92 – 97.38)/97.38 x 100 = -13.82%
IDBI India top 100 Equity Fund- Growth	= (21.92 – 25.82)/25.82 x 100 = -15.10%
IDFC Large Cap Regular Plan	= (28.95– 33.93)/33.93 x 100 = -14.65%
HSBC Large Cap Equity Fund-Growth 17.55%	= (186.44 – 226.12)/226.12 x 100 = -
Baroda Large Cap Fund – Plan A –Growth	= (12.94 – 15.32)/15.32 x 100 = -15.54%
ICICI Prudential Bluechip Fund – Growth	= (36.65 – 44.56)/44.56 x 100 = -17.75%
IndiabullsBluechip Fund –Existing Plan – Growth	= (18.12 – 22.58)/22.58 x 100 = -19.75%
Invesco India Largecap Fund – Growth	= (25.53 – 29.87)/29.87 x 100 = -14.53%
LIC MF Large Cap Fund-Growth	= (24.02 – 29.22)/29.22 x 100 = -17.79%

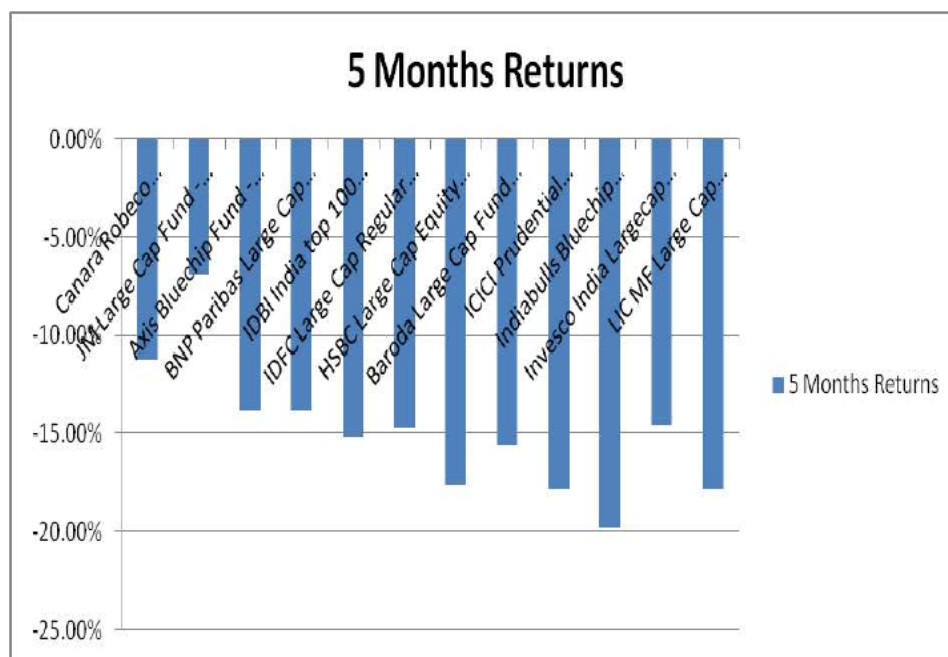


Figure 7: Graphical Representation of 5 months returns during Covid-19 pandemic

H. Interpretation

During this dangerous situation the NAV's of all funds from various mutual fund houses devastated dramatically. Due to lockdown many people lost their regular income might be one of the reasons for the drop of NAP. All mutual funds suffered loss because of this pandemic.

Table 7: Performance of The Funds Based on Sharpe Method

Large Cap Fund	Fund House	Standard Deviation	Ri	Sharpe Index
Canara RobecoBluechip Equity Fund – Growth	Canara Robeco Mutual Fund	18.23	- 11.21%	-0.944
JM Large Cap Fund –Growth	JM Financial Mutual Fund	8.83	-6.83%	-1.45
Axis Bluechip Fund –Growth	Axis Mutual Fund	16.96	- 13.77%	-1.166
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	17.85	- 13.82%	-1.11
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	18.94	- 15.10%	-1.114
IDFC Large Cap Regular Plan	IDFC Mutual Fund	18.96	- 14.65%	-1.089

HSBC Large Cap Equity Fund-Growth	HSBC Mutual Fund	19.6	- 17.55%	-1.20
Baroda Large Cap Fund – Plan A – Growth	Baroda Pioneer Mutual Fund	18.67	- 15.54%	-1.153
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	19.34	- 17.75%	-1.228
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	19.34	- 19.75%	-1.33
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	19.3	- 14.53%	-1.063
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	18.1	- 17.79%	-1.314

- R_f = Risk Free Rate of Return
- R_i = Rate of Return on i security
- Standard Deviation is the variation in the return of the respect funds. Such figures are obtained in course of field work
- Under the Sharpe Model the INDEX is Excess Return for Risk taken. Standard Deviation is a measure of Risk. Hence the index indicates the excess return over the
- Risk-free rate for 1 unit of Risk taken. Selection of the fund is generally based on higher Index.
- Rate of risk less return (Interest rate offered by RBI on bonds) is taken @ 6.00% p.a
- Sharpe Index =
$$\frac{R_i - R_f}{SD}$$

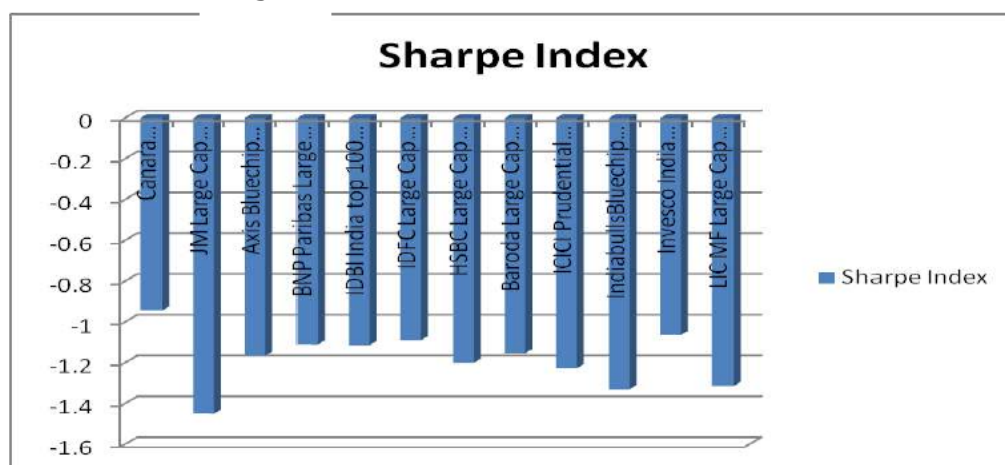


Figure 8: Graphical Presentation of Sharpe Index Values from the above table

I. Interpretation

As per the Sharpe Index method during the outbreak of Covid-19 pandemic, all the mutual fund schemes from various fund houses were affected with losses. The Sharpe ratios of various schemes turn into negative values due to negative returns of various funds during this pandemic time. As per the above graphical presentation, JM Large Cap fund value wiped out. Compared with the rest of the schemes Canara Robeco Bluechip fund has little loss as per Sharpe index method. Decline of income levels of investors, lack of savings and unfavoured movements of the markets might be the reasons for negative returns and index for various funds.

Table 8: Performance of The Funds Based on Treynor Method

Large Cap Fund	Fund House	Beta	Ri	Treynor
Canara RobecoBluechip Equity Fund – Growth	Canara Robeco Mutual Fund	0.89	- 11.21%	-19.34
JM Large Cap Fund –Growth	JM Financial Mutual Fund	0.4	-6.83%	-32.075
Axis Bluechip Fund –Growth	Axis Mutual Fund	0.72	- 13.77%	-27.46
BNP Paribas Large Cap Fund- Growth	BNP Paribas Mutual Fund	0.86	- 13.82%	-23.05
IDBI India top 100 Equity Fund- Growth	IDBI Mutual Fund	0.93	- 15.10%	-22.69
IDFC Large Cap Regular Plan	IDFC Mutual Fund	0.92	- 14.65%	-22.45
HSBC Large Cap Equity Fund- Growth	HSBC Mutual Fund	0.95	- 17.55%	-24.79
Baroda Large Cap Fund – Plan A – Growth	Baroda Pioneer Mutual Fund	0.91	- 15.54%	-23.67
ICICI Prudential Bluechip Fund – Growth	ICICI Prudential Mutual Fund	0.93	- 17.75%	-25.54
IndiabullsBluechip Fund –Existing Plan – Growth	Indiabulls Mutual Funds	0.93	- 19.75%	-27.69
Invesco India Largecap Fund – Growth	Invesco Mutual Fund	0.92	- 14.53%	-22.32
LIC MF Large Cap Fund-Growth	LIC Mutual Fund	0.88	- 17.79%	-27.03

Treynor Index $\frac{R_i - R_f}{\text{Beta}}$
 R_i = Rate of Return
 R_f = Risk-free rate of return

- Higher the Index will be higher performer
- Rate of risk less return (Interest rate offered by RBI on bond) is taken @ 6.00% p.a.
- While in the Sharpe model, the Standard Deviation is used as a measure of Risk associated with variations within the funds, which means ranking was done based on the unsystematic risk

i.e., Standard Deviation. Whereas in Treynor model, Beta value is taken as an index of market variations. Which means ranking was done based on the systematic risk.

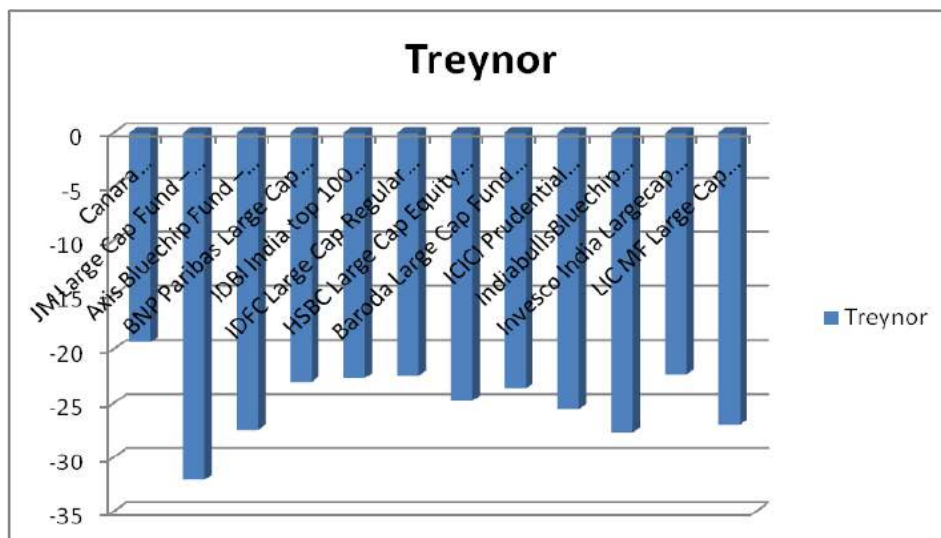


Figure 9: Graphical Presentation of Treynor Index Values from the above table

J. Interpretation

As per the Treynor's Index method during the outbreak of Covid-19 pandemic, all the mutual fund schemes from various fund houses were affected with losses. Similar to the Sharp Index method, Treynor's index also have negative values due to the negative returns of the various funds. Compared with the rest of the schemes Canara Robeco Bluechip fund has little loss whereas JM Large Cap fund wiped out. Decline of income levels of investors, lack of savings and unfavoured movements of the markets might be the reasons for negative returns and index for various funds.

4. CONCLUSIONS

This study helps the investors to understand the behaviour of various schemes of mutual funds from different fund houses during the prior period of Covid-19 and during the Covid-19 pandemic.

Mutual fund is one of the best investment options to the investors to get better returns with a certain level of risk. But, due to the outbreak of Covid-19 pandemic, NAV's of all schemes from various mutual fund houses has been decreased gradually. Decline of income levels of investors, lack of savings and unfavoured movements of the markets might be the reasons for negative returns and index for various funds. When we are observing the period prior to the outbreak of Covid-19, HSBC Large Cap Equity Fund –Growth is possessing the highest value of NAV and BNP Paribas Large Cap Fund occupied second position in terms of NAV i.e., next to the HSBC performance. The performance of other funds on the basis of NAV is very low as compared to HSBC Large Cap Equity Fund & BNP Paribas Large Cap Fund. Which means the market somewhat satisfied the majority of the investors in terms of their returns because this period was not a part of Corona time. Among all returns from the above statement, LIC MF Large Cap Fund is fetching more returns to their investors. Canara RobecoBluechip Equity Fund –Growth has occupied second position in the above race i.e., next to the LIC MF Large Cap Fund.

As per the Sharpes' and Treynors' method during the prior period of Covid-19 pandemic, LIC MF Large Cap Fund is the best performer in all aspects. But, JM Large Cap Fund returns had not

met riskless interest rates, except the above stated fund investors were satisfied with other all fund returns with different satisfaction levels.

Coming to the period outbreak of Covid-19 pandemic, which is not a good time for investors to earn. As per Sharpes' and Treynors' method, the index values for all funds thrust in the negative. Fall of stock markets, negative market moments, lack of savings and thinking of insecurity about their investments and negative sentiments of majority participants in the capital market might be the reasons for the negative returns.

Conflict of Interest

The authors confirm that there is no conflict of interest to declare for this publication.

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