

Performance Evaluation of Selected Equity Mutual Funds

Author Details:

Pratik Ketankumar Pastagiya

Ph.D. Student

Department Of Commerce, Veer Narmad South Gujarat University, Surat.

pastagiyapratik@gmail.com

Dr. Madhuben Bhavanbhai Patel

Assistant Professor

Sir. K. P. College of Commerce, Surat.

madhuip16@gmail.com



Abstract: -

Today, mutual funds are one of India's most appealing investment channels, offering a viable alternative for medium and small-scale investors who lack expert knowledge of the stock market and other investment options. Mutual funds are a risk-free financial intermediary that collects money from small participants and invests it in financial market securities. The main objectives of the study are to measure the performance evaluation of selected large-cap equity mutual funds by using Absolute rolling return, CAGR rolling return, Sharpe Ratio and Treynor Ratio. Secondary data has been used for the study from 1st April 2011 to 31st March 2021. The study found that over the period, the ICICI Prudential Bluechip Fund-Growth Large Cap Fund has performed excellently. The study suggested that investors would give first preference to this scheme for investment. The study concluded that ICICI Prudential Bluechip Fund-Growth Large Cap Fund performed better than DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund because its Absolute rolling return, CAGR rolling return, Sharpe Ratio and Treynor Ratio were lower than the other selected mutual fund schemes.

Key Words: - Fund's NAV, Benchmark NAV, Return, Sharpe Ratio, Treynor Ratio

Introduction: -

Mutual funds are an integral part of the Indian financial system. As a result, a mutual fund is a reliable investment that pools the savings of investors. Mutual funds gather funds from a variety of sources and invest them in capital market instruments. As a result, mutual funds are a good investment for the average person since they provide a variety of investment choices in diverse portfolio securities at a cheap cost.

Mutual funds are professionally managed investment plans maintained by an asset management company that pools the savings of a group of people and invests them in stocks, bonds and other assets. With as little as a few thousand rupees, anyone can begin investing in mutual funds by purchasing units of a specific mutual fund scheme with a defined investment aim and strategy.

Meaning of Large Cap Funds: -

Large-cap companies are also known as well-established companies in the stock market. whose market caps are of Rs. 20,000 crore or more. These companies' businesses are very stable and have good reputations. Their stocks are less volatile and less risky. Large cap mutual fund schemes also invest in these companies' stock. As per SEBI rules, large cap funds must invest at least 80% of their funds in large cap stocks.

Literature Review: -

Kuberudu Burlakanti, Ravi Verma Chiruvuori (2013) the study focused on comparison of risk and return of 10 equity scheme and benchmark index to identify outperforming and under performing mutual fund schemes, from December 2007 to December 2012. The study was performed using various tools namely AGR, CAGR, Standard Deviation, Beta, Sharpe Index and Treynor model etc. The study suggested that AGR and CAGR of TATA Dividend yield and ING Dividend yield fund gave higher returns to investors. Annual returns and CAGR of all funds yielded better returns compared to their benchmark NIFTY returns. Sharpe and Treynor ratio of equity funds indicated superior than benchmark NIFTY. It was found that TATA Dividend yield and ING Dividend AGR, CAGR, Sharpe and Treynor ratio of yield fund was higher than their other peers. The study concluded that all equity diversified funds yielded better returns against the Benchmark returns. TATA Dividend yield fund and ING Dividend yield fund gave better returns, so investors were suggested to invest in these funds for long terms.

Dr. Sunil M. Adhav, Mr. AnoopWaghmare (2016) to study comparative performance of selected large cap 29 equity mutual funds from the period of 2009-10 to 2013-14. The objective of this study was to assess the volatility of performance of selected large cap equity mutual fund schemes. The study focused only large cap equity mutual funds schemes. The data was collected from secondary sources. Data analyzed by Standard Deviation and Sharpe Ratio. Data was selected only for the average annual Return basis. The study concluded that during the research period some equity mutual funds had performed better than others and generated better returns for the investors.

Research Methodology: -

Objective: -

- (1) To compare the funds return against respective benchmark return.
- (2) To evaluate the performance of selected large cap equity mutual funds by using Sharpe Ratio and Treynor Ratio.

Hypothesis: -

- (1) H_0 : There is no significant difference between the fund rolling returns and benchmark rolling returns for the selected period of selected mutual funds in terms of Absolute rolling return and CAGR rolling return.

Type of Data: -

The study focuses on large-cap equity mutual funds. For the study, a total of six large-cap equity mutual funds were chosen based on the CRISIL Mutual Fund Ranking report (for the quarter ended March 2021). Secondary data has been used for the study from 1st April, 2011 to 31st March, 2021 on a quarterly basis. Data has been collected from mutual fund related websites and other secondary sources.

Table 1: List of Large-cap Equity Mutual Funds and their Benchmark Index and CRISHIL Report Rank included in the study

Sr. No.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	BENCH MARK	AS PER CRISHIL REPORT MARCH - 21 RANK
1	Franklin India Bluechip Fund - Growth Large Cap Fund	NIFTY 100 TRI	2

Sr. No.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	BENCH MARK	AS PER CRISHIL REPORT MARCH - 21 RANK
2	ICICI Prudential Bluechip Fund - Growth Large Cap Fund	NIFTY 100 TRI	3
3	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan - Growth Large Cap Fund	NIFTY 100 TRI	4
4	Tata Large Cap Fund - Regular Plan - Growth Large Cap Fund	NIFTY 100 TRI	4
5	HDFC Top 100 Fund - Growth Large Cap Fund	NIFTY 100 TRI	5
6	DSP Top 100 Equity Fund - Regular Plan - Growth Large Cap Fund	S&P BSE 100 TRI	5

Tools of Analysis: -

Return: - Return is an important tool for measuring the performance of schemes return. Return is measures on the basis of fund's NAV and Benchmark NAV.

$$R_i = \frac{\text{Ending Price} - \text{Starting Price}}{\text{Starting Price}} * 100$$

Rolling Return: - Its best way to analyze the past performance of fund's for measuring over investment period at regular intervals.

CAGR: - Its measure averagely investment growth from the beginning value to ending values.

$$CAGR = (EV / BV)^{(1/n)} - 1$$

Sharpe Ratio: - It evaluates the performance of funds with risk adjusted return.

$$S_x = \frac{R_p - R_f}{SD}$$

R_p = Average Rate of Portfolio Return

Rf = Risk Free Rate

SD = Standard Deviation of Rp

Treynor Ratio: - It evaluates the excess returns earned by a fund over and above the risk-free returns.

$$TR = R_p - R_f / \beta_p$$

Rp = Portfolio Return

Rf = Risk Free Rate

β_p = Beta of Portfolio

Risk Free Rate: - For the study 91 T-bill is used for risk free rate. As on 31st March 2021, averagely 91 T-bill rates is 7.2% from 01st April 2011 to 31st March 2021. But for the study data has been used on the basis of quarterly so here used 91 T-bill rate is 1.8% per quarter (7.2% / 4 month = 1.8%).

Analysis and Interpretation: -

Objective 1: - To compare the funds return against respective benchmark return.

For the study, the funds' and benchmark's average overall ten-year rolling return has been calculated on the basis of quarterly by using particular funds and benchmark NAV. 1-year return is found by absolute rolling return and 3, 5, 7 and 10 year returns are found through CAGR rolling return.

Out Performed: - Fund returns more than its benchmark return, (-) means Outperformed

Under Performed: - Fund returns less than its benchmark return, (+) Underperformed

The following table 2 shows the 1, 3, 5, 7 and 10-years rolling return generated by the selected large cap equity mutual funds during the selected study period. The average rolling returns have been calculated for a selected quarterly rolling period.

Table 2: Average Rolling Returns of the selected Large Cap Equity Mutual Funds with respective Benchmark Return (Return in %)

SR. NO.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	1 YEAR ABSOLUTE RETURN %	3 YEAR CAGR %	5 YEAR CAGR %	7 YEAR CAGR %	10 YEAR CAGR %
1	Franklin India Bluechip Fund - Growth Large Cap Fund	10.98	10.8	10.66	10.75	10.53
	Benchmark Return - NIFTY 100 TRI	11.38	11.11	10.56	11.06	9.99
	Change in %	3.64	2.87	-0.94	2.88	-5.13
2	ICICI Prudential Bluechip Fund - Growth Large Cap Fund	13.35	13.34	12.93	13.3	12.27
	Benchmark Return - NIFTY 100 TRI	11.38	11.11	10.56	11.06	9.99
	Change in %	-14.76	-16.72	-18.33	-16.84	-18.58
3	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan - Growth Large Cap Fund	13.61	13.46	13.01	13.33	12.07
	Benchmark Return - NIFTY 100 TRI	11.38	11.11	10.56	11.06	9.99
	Change in %	-16.39	-17.46	-18.83	-17.03	-17.23
4	Tata Large Cap Fund - Regular Plan - Growth Large Cap Fund	11.48	11.29	10.83	11.23	10.92

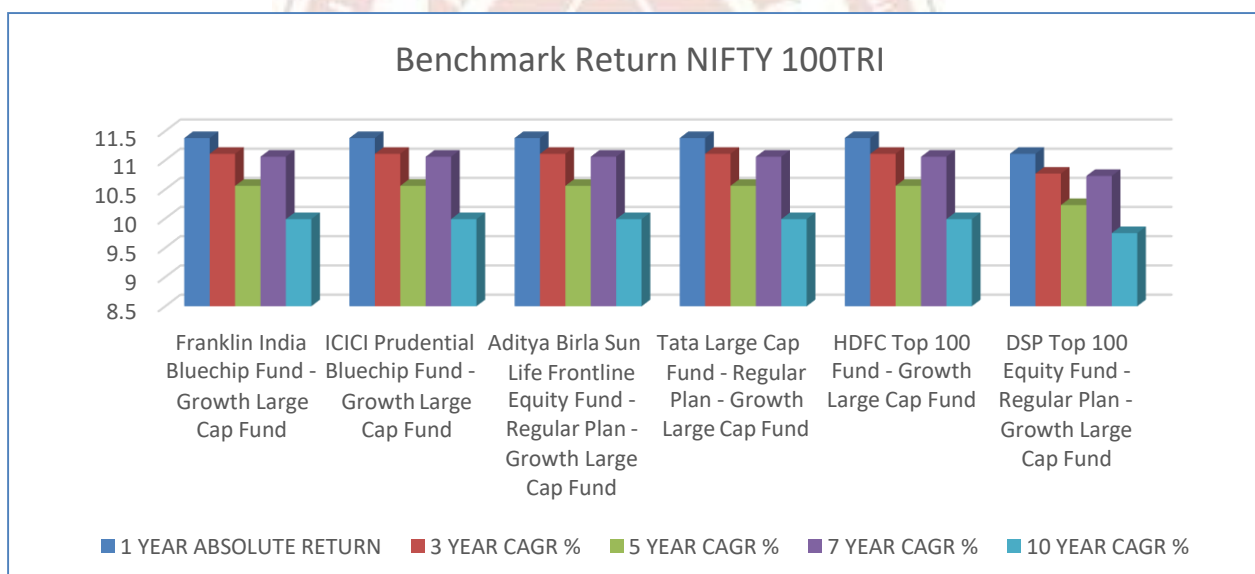
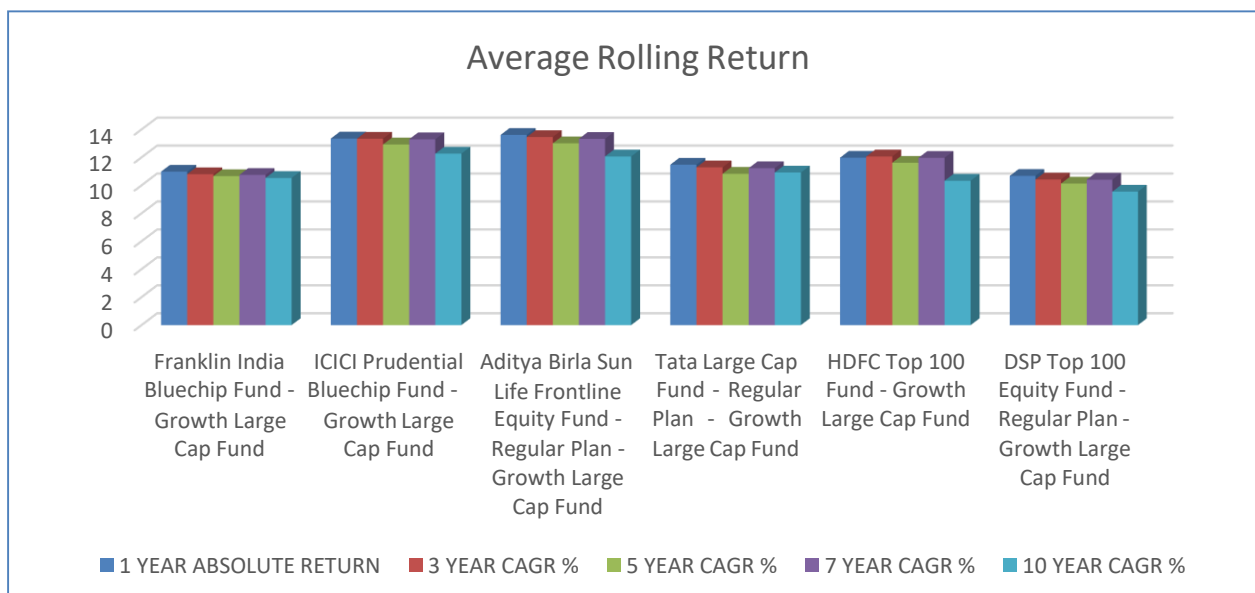
SR. NO.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	1 YEAR ABSOLUTE RETURN %	3 YEAR CAGR %	5 YEAR CAGR %	7 YEAR CAGR %	10 YEAR CAGR %
	Benchmark Return - NIFTY 100 TRI	11.38	11.11	10.56	11.06	9.99
	Change in %	-0.87	-1.59	-2.49	-1.51	-8.52
5	HDFC Top 100 Fund - Growth Large Cap Fund	11.98	12.07	11.62	11.97	10.33
	Benchmark Return - NIFTY 100 TRI	11.38	11.11	10.56	11.06	9.99
	Change in %	-5.01	-7.95	-9.12	-7.60	-3.29
6	DSP Top 100 Equity Fund - Regular Plan - Growth Large Cap Fund	10.68	10.42	10.13	10.41	9.55
	Benchmark Return - S&P BSE 100 TRI	11.11	10.77	10.23	10.73	9.75
	Change in %	4.03	3.36	0.99	3.07	2.09

Source: Compiled by Researcher

Note: - Green Colour marking is Highest Return

Red Colour marking is Lowest Return

Chart 2.1: Average Rolling Returns of the Large Cap Equity Mutual Funds with respective Benchmark Return



Inference: -

The following information can be derived from the table and chart: -

The highest 1-yearly absolute rolling return, 3, 5 and 7-year CAGR rolling returns generated by the Aditya Birla Sun Life Frontline Equity Fund-Regular Plan-Growth Large Cap Fund from 01st April, 2011 to 31st March, 2021 are 13.61%, 13.46%, 13.01% and 13.33%, while its benchmark is 11.38%, 11.11%, 10.56% and 11.06%, indicating that the fund outperformed its benchmark and was followed by ICICI Prudential Bluechip Fund - Growth Large Cap Fund. The lowest 1-yearly absolute rolling return, 3, 5 and 7-year CAGR rolling returns generated by the DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund are 10.68%, 10.42%, 10.13% and 10.41% from 01st April, 2011 to 31st March, 2021, while its benchmark is 11.11%, 10.77%, 10.23 and 10.73%, indicating that the fund underperformed its benchmark and was followed by Franklin India Bluechip Fund - Growth Large Cap Fund.

The highest 10-yearly average CAGR rolling returns generated by the ICICI Prudential Bluechip Fund-Growth Large Cap Fund over the last ten years is 12.27%, while its benchmark is 9.99%, indicating that the fund outperformed its benchmark and was followed by Aditya Birla.Sun Life Frontline Equity Fund-Regular Plan-Growth Large Cap Fund. The lowest 10-yearly average CAGR rolling return generated by the DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund is 9.55% and its benchmark is 9.75%, which means the fund underperformed its benchmark and was followed by HDFC Top 100 Fund-Growth Large Cap Fund.

Hypothesis Testing: -

- (1) H_0 : There is no significant difference between the fund rolling returns and benchmark rolling returns for the selected period of selected equity mutual funds in terms of Absolute rolling return and CAGR rolling return.

Independent Samples Test (TABLE 2.1)					
Returns	t-test for Equality of Means				
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
1-YEAR RETURN	1.354	10	0.205	0.67833	0.50093
3-YEAR RETURN	1.593	10	0.142	0.84333	0.52930
5-YEAR RETURN	2.056	10	0.067	1.02500	0.49854
7-YEAR RETURN	1.594	10	0.142	0.82667	0.51846
10-YEAR RETURN	2.310	10	0.044	0.99500	0.43075

Result of Return: - From the above table no. 2.1 we can say that the return of 1-year, 3-years, 5-years, 7-years P-value is greater than 0.05 (0.205, 0.142, 0.067, and 0.142 respectively). So, we don't reject null hypothesis. Hence its conclude that fund rolling return and benchmark return are same for the 1-year, 3-years, 5-years and 7-years. Also for the 10 years return we observe from the table 1.1 the P-value is less than 0.05. Hence we can say that there is some difference in return of 10 years between fund rolling and benchmark of selected mutual fund companies.

Objective 2: - To evaluate the performance of selected equity mutual funds by using Sharpe ratio and Treynor ratio.

Sharpe Ratio: -

Table 3: Sharpe Ratio and Ranks of the selected Mutual Funds as per Sharpe Ratio

SR. NO.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	ANNUAL SHARPE RATIO (AVERAGE)	RANK
1	Franklin India Bluechip Fund - Growth Large Cap Fund	0.258	4
2	ICICI Prudential Bluechip Fund - Growth Large Cap Fund	0.3601	1
3	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan - Growth Large Cap Fund	0.3341	2

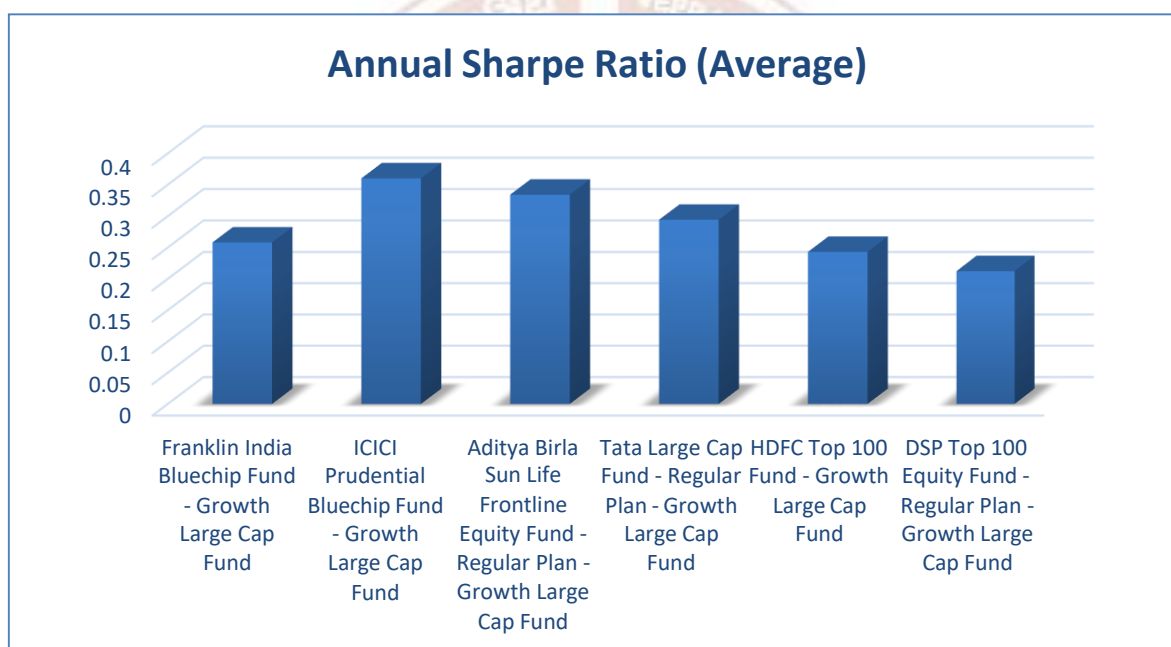
4	Tata Large Cap Fund - Regular Plan - Growth Large Cap Fund	0.2941	3
5	HDFC Top 100 Fund - Growth Large Cap Fund	0.243	5
6	DSP Top 100 Equity Fund - Regular Plan - Growth Large Cap Fund	0.2123	6

Source: Compiled by Researcher

Note: - Green Colour marking is Highest Return

Red Colour marking is Lowest Return

Chart 3.1: Sharpe Ratio and Ranks of the selected Mutual Funds



Inference: -

The above table 3 and chart 3.1 specify the value of the Sharpe Ratio of the selected large cap equity mutual funds during the study period (01st April, 2011 to 31st March, 2021). The Sharpe ratio measures the excess return over the risk-free rate return ($R_p - R_f$) per unit of total risk, which is calculated by the standard deviation of the fund.

From the above table 3, ICICI Prudential Blue chip Fund-Growth Large Cap Fund has the highest Sharpe Ratio of 0.3601, which indicates it has undertaken the highest total risk and generated a higher return as compared to the other funds. While DSP Top 100 Equity Fund-

Regular Plan-Growth Large Cap Fund has the lowest Sharpe Ratio of 0.2123, which indicates it has undertaken the lowest total risk generated a lower return among the other funds.

Treynor Ratio: -

Table 4: Treynor Ratio and Ranks of the selected Mutual Funds as per Treynor Ratio

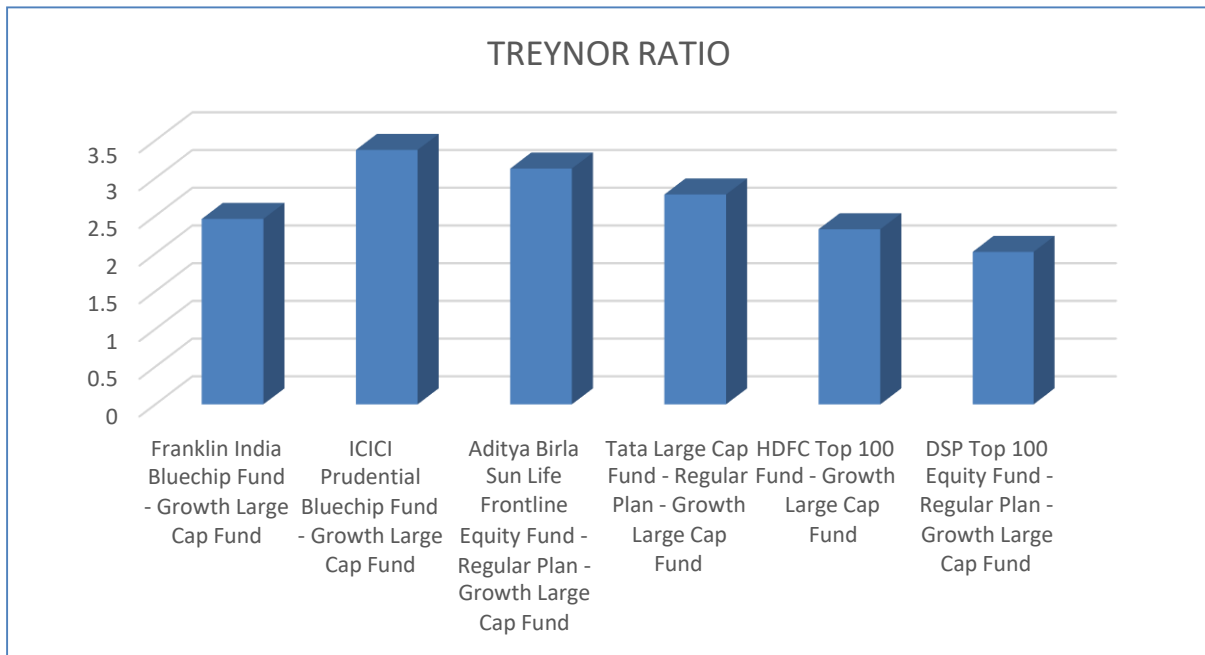
SR. NO.	Name of Large-cap Mutual Funds (Regular Growth Schemes)	ANNUAL TREYNOR RATIO	RANK
1	Franklin India Bluechip Fund - Growth Large Cap Fund	2.4579	4
2	ICICI Prudential Bluechip Fund - Growth Large Cap Fund	3.3733	1
3	Aditya Birla Sun Life Frontline Equity Fund - Regular Plan - Growth Large Cap Fund	3.1251	2
4	Tata Large Cap Fund - Regular Plan - Growth Large Cap Fund	2.7819	3
5	HDFC Top 100 Fund - Growth Large Cap Fund	2.3215	5
6	DSP Top 100 Equity Fund - Regular Plan - Growth Large Cap Fund	2.0212	6

Source: Compiled by Researcher

Note: - Green Colour marking is Highest Return

Red Colour marking is Lowest Return

Chart 4.1: Treynor Ratio and Ranks of the selected Mutual Funds



Inference: -

The above table 4 and chart 4.1 highlight the value of the Treynor Ratio of the selected large cap equity mutual funds during the study period (01st April, 2011 to 31st March, 2021). The Treynor Ratio takes into consideration the excess returns earned over the risk-free rate return per unit of systematic risk, which is calculated by the beta of the fund.

From the above table 4, ICICI Prudential Bluechip Fund-Growth Large Cap Fund has the highest Treynor Ratio of 3.3733, which means that it has the lowest systematic risk as compared to the other funds and is therefore more suitable for investment during the study periods (01st April, 2011 to 31st March, 2021). While DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund has the lowest Treynor Ratio of 2.0212, which shows that it has the highest systematic risk among the other funds.

Finding: -

The ICICI Prudential Bluechip Fund-Growth Large Cap Fund outperformed the other mutual funds in the study due to its 10-year CAGR rolling funds and benchmark returns, while its Sharpe Ratio and Treynor Ratio produced the highest returns among the other funds. In the case of the funds and benchmark returns of 1-yearly absolute rolling return, 3, 5 and 7-year CAGR rolling returns, the Aditya Birla Sun Life Frontline Equity Fund-Regular Plan-Growth Large Cap Fund has generated the highest return from 01st April, 2011 to 31st March, 2021. While the DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund underperformed the other mutual funds due to its 1-yearly rolling absolute return, 3, 5, 7 and 10-yearly CAGR rolling return of funds and benchmark, the Sharpe Ratio and Treynor Ratio generated the lowest returns among the other mutual funds.

Suggestion: -

The preceding study focuses solely on large-cap mutual fund schemes, any investor invests in large cap mutual fund schemes, they should check the long performance in terms of Returns, Sharpe Ratio and Treynor Ratio of the funds because it gives a clear idea about the funds and fund manager activity. Short term information does not give clear performance. By the analysis of the study, investors will give first preference to the ICICI Prudential Bluechip Fund-Growth Large Cap Fund for investment because during the study this scheme's performance was excellent.

Conclusion: -

During the 1-yearly absolute rolling return, 3, 5 and 7-yearly CAGR rolling return periods, Aditya Birla Sun Life Frontline Equity Fund - Regular Plan - Growth Large Cap Fund has performed outperformed. The return of the 1-year, 3-years, 5-years and 7-years P-value is greater than 0.05 (0.205, 0.142, 0.067 and 0.142 respectively). So, we don't reject the null hypothesis. Hence, it is concluded that fund rolling return and benchmark return are the same for 1-year, 3-years, 5-years and 7-years. For the last 10 years, the highest CAGR rolling returns generated by the ICICI Prudential Bluechip Fund-Growth Large Cap Fund was 12.27%, while its benchmark was 9.99%, meaning the fund performed outperformed and other funds underperformed. Also, for the 10-year return, we observe from table 2.1 that the P-value is less than 0.05. Hence, we can say that there is some difference in return over 10 years between fund

rolling and the benchmark of selected mutual fund companies. ICICI Prudential Bluechip Fund-Growth Large Cap Fund has the highest Sharpe Ratio of 0.3601 and Treynor Ratio of 3.3733 compared to the other selected mutual funds. In short, the DSP Top 100 Equity Fund-Regular Plan-Growth Large Cap Fund has shown negative performance over the study period.

References: -

Burlakanti, Kuberudu., Chiruvooori Ravi Varma. May-2013. Performance Evaluation of Select Equity Funds in India. International Journal of Social Science & Interdisciplinary Research 69-78.

Dr. Sunil M. Adhav, Mr. AnoopWaghmare. June-2016. Comparative Study of Selected Large Cap Equity Mutual Funds. International Journal of Science Technology and Management 302-308.

<http://www.niveshguru.com/mutualFundIntro.php>

https://en.wikipedia.org/wiki/Mutual_fund

<https://www.holisticinvestment.in/how-to-calculate-mutual-fund-returns/>

<https://www.fool.com/knowledge-center/how-to-calculate-return-on-indices-in-a-stock-mark.aspx>

<https://www.investopedia.com/terms/c/cagr.asp>

<https://www.rupeeest.com/Mutual-Funds/Rolling-Return>

https://www.investopedia.com/articles/07/sharpe_ratio.asp

<https://www.investopedia.com/terms/t/treynorratio.asp>

<https://groww.in/p/benchmark/>

<https://www.crisil.com/content/dam/crisil/mutual-fund-ranking/CRISIL-Mutual-Fund-Ranking-March-2021.pdf>

<https://tradingeconomics.com/india/interbank-rate>

<https://www.advisorkhoj.com/mutual-funds-research/historical-NAV>

https://www.google.com/search?q=investment+ratio+of+large+cap+mutual+fund+schemes+i+n+equity+share&rlz=1C1CHBF_enIN864IN864&oq=investment+ratio+of+large+cap+mutua

l+fund+schemes+in+equity+share&aqs=chrome..69i57.25304j0j7&sourceid=chrome&ie=UT
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<https://www.kotaksecurities.com/ksweb/share-market/difference-between-large-small-mid-cap-in-share-market>

