

Risk And Return Analysis Of Large Cap Fund

(with special reference to selected Asset management companies)

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ABSTRACT

A mutual fund is a sort of collective investment vehicle that collects money from a large number of individuals and invests it in order to achieve a certain goal, with returns given to participants on a pro-rata basis in proportion to their investment. Investing in mutual funds does not eliminate risk; nevertheless, based on the total number of assets managed by the AMCs, the investor must bear the entire expense ratio, which affects the investment's returns and determines whether the returns are influenced by market returns. Correlation between benchmark and fund returns. This study selects ten asset management companies based on their CRISEL ratings, with HDFC top 100 having a higher standard deviation and higher returns than the other AMCs, and SBI big fund being more volatile. Only a few AMCs demonstrate unidirectional causality between benchmark index and fund results. There is no link between benchmark and fund returns.

Keywords: Risk and return, Mid-cap funds, expense ratio, Granger causality test, regression analysis.

Introduction:

A mutual fund is a type of collective investment vehicle that collects and pools money from multiple investors and invests it in stocks, bonds, government securities, and money market instruments. The money collected in a mutual fund scheme is invested in stocks and bonds, among other things, by professional fund managers in accordance with the scheme's investment objective. After deducting applicable expenses and levies, the income/gains generated by this collective investment scheme are distributed proportionately among the investors by calculating the scheme's "Net Asset Value" or NAV. In exchange, the mutual fund charges a small fee. Because investment objectives differ from person to person – such as post-retirement expenses, funding children's education or marriage, or purchasing a house- The investment products required to achieve these objectives. There are clear benefits to investing in mutual funds as opposed to individual equities. Mutual funds are a great way for regular investors to take part in and profit from capital market uptrends since they offer a wide variety of investment possibilities, such as money market instruments, corporate bonds, government securities, and equity shares. The two primary advantages are

that you can leave investment decisions to a professional manager and invest in a variety of assets at a low cost.

Literature Review:

1. **Dr. V Chitra and Dr. T Hemalatha (2018).** The performance of the risk and return analysis of selected mutual fund schemes in India was investigated in this paper. For the risk-free rate of return, their performance is compared to the BSE- Sensex and the monthly yield on 91-day Treasury bills. For testing the performance, the researcher chose growth-oriented mutual fund schemes offered by UTI Mutual Fund from April 1, 2007, to March 31, 2016. This study looks at six open-ended equity schemes with a growth option offered by UTI Mutual Funds. Monthly NAV as declared by the relevant schemes was used

in this study for ten years. Specifically, from April 2007 to March 2016. For the market portfolio, the BSE-Sensex was used. Sharpe, Treynor, and Jensen's measures were used to evaluate the historical performance of the selected schemes, and the results will help investors make better investment decisions. As a result, the UTI Dividend Yield fund has a low standard deviation and beta value. This fund offers the highest return for a given unit of risk. Investors who require consistent income can put their money into the UTI Dividend Yield fund.

2. **Ganesh, Megha (2019).** A Study on Risk and Return Analysis of Mutual Fund at State Bank of India, Bengaluru. A mutual fund (MF) is a trust that pools the savings of multiple investors who share similar financial objectives. As a result, the funds raised are invested in CM products such as equities, bonds, and other securities. The profits from these investments will be distributed to shareholders in proportion to the number of shares they own. As a result, MFs are the best investment for the general public because they provide the opportunity to invest in a basket of differently managed securities at a low cost. The average assets under management (AAUM) of the mutual fund industry stood at 24.25 Lakh Crore (INR 24.25 trillion) in February 2019. The average assets under management (AAUM) of the Indian mutual fund industry stood at 24,24,932 crores in February 2019. Mutual funds provide investors with a way to gain exposure to a variety of securities, equities as well as other capital market asset instruments. The mutual fund industry has grown tremendously. Current assets under management (AUM) are INR 23.6 trillion; this number was just INR 1 trillion in January 2000. Currently INR 7.9 trillion.
3. **India K.R. Sivabagyam, Shruthi. P, Vidya.M, Suganya.P, Sandhiya.V(2019).** A Research on Risk-Return Analysis of Selected Growth Option Mutual Fund Schemes. The study looked at the risk-return of various growth schemes in India. Diversification of securities in a portfolio doesn't need to reduce a security's portfolio risk. However, diversification can help to better average a portfolio's risk. Risk is defined as the difference between an expected return and an actual return. Return is the risk premium for investing in volatile corporate securities. In this study, 26 growth schemes were used to assess risk and return, with the SBI Banking & PSU Debt Fund and Axis Banking & PSU Debt Fund outperforming and the UTI Core Equity Fund and SBI Contra Fund underperforming. All other mutual fund schemes must raise their game in the coming years.
4. **Nupur Makkar¹, Shalu Mittal², Ashu Chugh³, Kusum Dhaka⁴ (2020).** Risk and Return Analysis of Stocks listed in BSE and NSE: A Review Study. The purpose of this paper is to review the past literature available on risk and return to throw light on the relationship between them. When making any investment decision, risk and return analysis are critical. Before investing in any stock or security, any rational investor weighs the risk and return. The investment process must take into account both risk and return. It is widely assumed that if an investor wants to earn a higher return, he must take on more risk; if he does not want to take on more risk, he cannot earn a higher return. As a result, a higher return corresponds to a higher risk. However, numerous studies have been conducted to examine risk and return. A few studies concluded that higher risk is associated with a higher return, whereas other studies disagreed and concluded that higher risk is not generally associated with a higher return.
5. **Aniruddh Sahai, Prof. (Dr.) Ravinder Kumar. (2020).** The study reveals Mutual Funds (via their professional managers) enable retail investors to generate capital market returns with small amounts while benefiting from diversification. Mutual funds provide a by playing a critical role in promoting the nation's economic and industrial growth, directing savings toward productive uses in the household sector. the most important fund provider for mutual funds is the Mutual of India. The fund industry began in 1963 and has grown year after year since then. parameters such as the number of asset management companies (AMCs) and the total amount of money invested, the number of schemes, the number of investors, etc. The MF industry in India was opened to the private sector in 1993. Before privatization, UTIs, public sector banks, and insurance companies existed.

Objectives of the study:

1. To assess the risk and return on investment performance of particular mutual funds.
2. To evaluate and analyse the risk, return, and volatility of particular mutual fund schemes offered by various asset management firms.
3. To examine how the fund expense ratio lowers the investment return on mutual funds.

4. To investigate the causal connection between stock market return and mutual fund flows.

Hypothesis:

1. **H0:** There is no meaningful correlation between risk and return.
Ha: There is a strong correlation between risk and return.
2. **H0:** There is no considerable relationship between asset management companies' risk and the return on mutual fund investments for investors.
Hb: There is a significant relationship between asset management companies and the return on the mutual fund investment for investors.
3. **H0:** There is no substantial association between fund return and expense ratio for mutual fund investments.
Hc: There is a strong association between fund return and expense ratio in mutual fund investments.
4. **H0:** There is no significant causality between mutual fund flows and stock returns.
Hd: There is a significant causality between Mutual fund flow on stock return.

Research Methodology:

Design: This study is descriptive in nature.

Data collection:

This study's analysis relies on secondary data. The AMCs are picked according on their crisis rating and assets under management, and only small-cap funds are chosen, with a benchmark index used to evaluate the causal relationship between them. The research was based on secondary data acquired from several asset management businesses' publications and reports, as well as AMFI's website, Value Research Online. Daily data on the closing Net Asset Value of the chosen scheme will be gathered via websites.

Statistical Tools:

Beta and Standard Deviation evaluate the Fund's risk, return, and volatility. Regression analysis is used to analyse the link between mutual fund flow and stock market return, as well as how each variable affects the other. The Granger Causality Test is used to look into the causal relationship between the benchmark return and the return of a certain fund.

Large-cap Fund:

Large-cap mutual funds are open-ended equity funds that specialise in large-cap firms. These funds must invest at least 80% of their total assets in large-cap equity and equity-related securities. According to SEBI, the top 100 corporations by total market capitalisation are classified as large-cap companies. Large-cap firms often have a consistent market share and a competitive advantage in their respective industries. These companies have consistent cash flows and strong balance sheets, which put them in a better position to deal with adversity. They are also traded more frequently, resulting in increased liquidity. All of these factors contribute to large-cap companies' lower volatility and greater resilience to market downturns. As a result, investors in large-cap stocks minimise the risks associated with autonomous stock selection while benefiting from a diverse portfolio of leading Indian companies. Large-cap funds should account for at least 50% of one's stock portfolio. Individuals with a lower risk tolerance should consider increasing their exposure to large-cap stocks.

Sl. No	Name of The Fund
1.	Mirae Asset Large Cap Fund
2.	Axis Blue-chip Fund
3.	ICICI Prudential Blue-chip Fund
4.	SBI Blue-chip Fund
5.	Nippon India Large Cap Fund
6.	Franklin Blue-chip

7.	IDFC Large Cap
8.	HDFC Top 100
9.	L&T India Large Cap
10.	Invesco India Large cap
11.	S&P BSE 100

Source: (Data as on March 9th, 2024 Source- Value Research)

Concept of Expense ratio:

Expense ratio refers to the price charged by mutual funds for managing your money, similar to how a physician charge for their services. The expense ratio varies by fund type and is essentially the cost of operating a mutual fund. The fund manager or advisor's fee accounts for the majority of operational expenses, with the remainder going to charges such as custodial services, legal services, registrar fees, record keeping, accounting, and auditing fees, among others. Some operating expenses may involve marketing costs. Because the cost ratio is removed from your investment on a daily basis, and the Net Asset Value (NAV) is published, you do not feel the pain; but, if you are considering long-term profits (for more than 5 years), it can make a significant difference to your investment returns. The Securities and Exchange Board of India (SEBI) laws state that an equity fund's expense ratio cannot exceed 2.5%, while a debt fund's maximum is 2.25%.

SEBI Regulations on Expense Ratio:

Fund houses are permitted to charge Total Expense Ratio (TER) in accordance with the Securities and Exchange Board of India (SEBI), subject to the following maximum limits:

Asset Under Management (crores)	TER for equity-oriented schemes (%)	TER for other schemes excluding Index Funds, ETFs and Fund of Funds (%)
Rs. 0-500	2.25	2.00
Rs. 500-750	2.00	1.75
Rs. 750-2,000	1.75	1.50

Rs. 2,000-5,000	1.60	1.35
Rs. 5,000-10,000	1.50	1.25
Rs. 10,000-50,000	For every increase of 5,000 crores in AUM TER reduces by 0.05%	For every increase of 5,000 crores in AUM TER reduces by 0.05%
> Rs. 50,000	1.05	0.80

The fund's AUM and expense ratio have an inverse relationship. The expense ratio rises when a fund's asset value is low, allowing management to cover fund expenses with a lower asset base. On the other hand, the cost ratio is relatively lower when a fund has a large asset value since the expenses are spread over a larger asset base.

However, SEBI permits fund houses to sell in cities other than the top 30 by an additional 30 basis points (0.30%) in expense ratio, provided that at least 30% of new inflows originate from these places. This is done in order to increase the mutual funds' penetration in tiers two and three.

Additionally, fund houses may charge 5 basis points (0.05%) of AUM over and above the maximum expense ratio limitations in lieu of an exit fee in cases where an exit load is imposed. For closed-ended schemes, however, AMCs are not permitted to impose the expense ratio in place of exit load. As a result, the fund return and expenditure ratio have a strong correlation. **The null hypothesis is rejected.**

Data Analysis and Interpretation:

Table Showing calculated Values of Average, Standard Deviation, and Beta of Large cap fund:

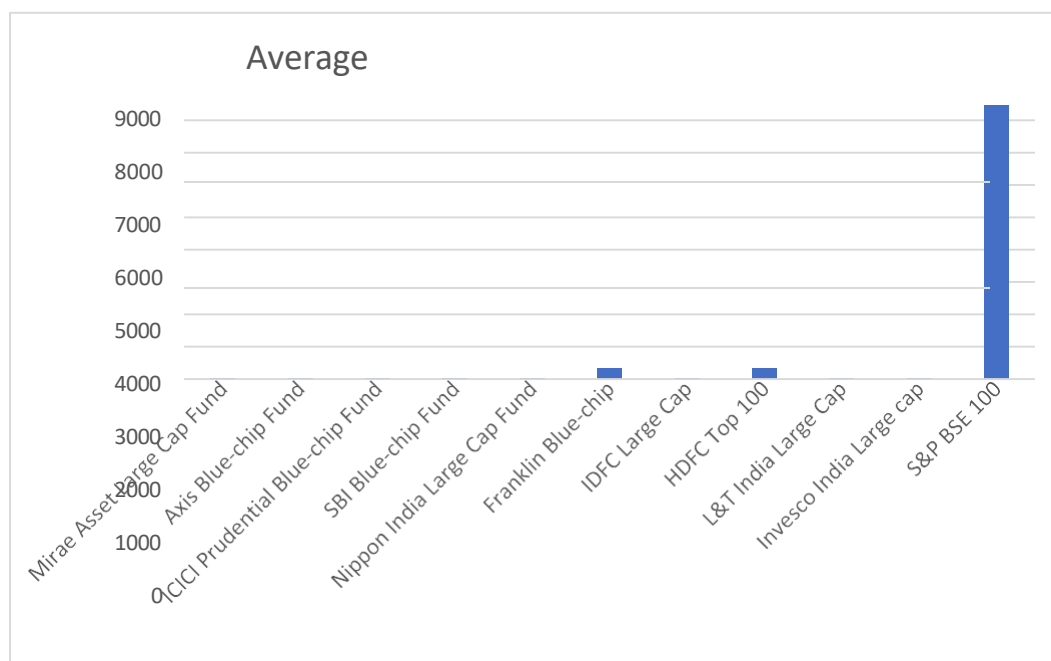
SI. No	Name of The Fund	Average	Standard Deviation	Beta
1.	Mirae Asset Large Cap Fund	29.83041	13.06332	1.4036
2.	Axis Blue-chip Fund	18.38259	6.462713	0.9783
3.	ICICI Prudential Blue-chip Fund	17.69109	6.537721	1.2538
4.	SBI Blue-chip Fund	16.20407	3.375885	1.4948
5.	Nippon India Large Cap Fund	21.30865	8.288629	-0.2233
6.	Franklin Blue-chip	318.415	99.39214	0.1103
7.	IDFC Large Cap	22.4186	6.376538	0.8532
8.	HDFC Top 100	313.6572	107.149	0.13862
9.	L&T India Large Cap	21.11499	4.298177	-0.3833
10.	Invesco India Large cap	18.74767	6.333778	0.82022
11.	S&P BSE 100	8448.553	2307.377	1

Table Showing Average Values of Large cap funds:

SI. No	Name of The Fund	Average
1.	Mirae Asset Large Cap Fund	29.83041
2.	Axis Blue-chip Fund	18.38259
3.	ICICI Prudential Blue-chip Fund	17.69109
4.	SBI Blue-chip Fund	16.20407
5.	Nippon India Large Cap Fund	21.30865
6.	Franklin Blue-chip	318.415
7.	IDFC Large Cap	22.4186
8.	HDFC Top 100	313.6572

9.	L&T India Large Cap	21.11499
10.	Invesco India Large cap	18.74767
11.	S&P BSE 100	8448.553

Graph Showing Average Values of Large cap funds:



Source: Author's Computation using Excel

Table Showing Values of Standard Deviation Each Large Cap Fund:

SI. No	Name of The Fund	Standard Deviation
1.	Mirae Asset Large Cap Fund	13.06332
2.	Axis Blue-chip Fund	6.462713
3.	ICICI Prudential Blue-chip Fund	6.537721
4.	SBI Blue-chip Fund	3.375885
5.	Nippon India Large Cap Fund	8.288629
6.	Franklin Blue-chip	99.39214
7.	IDFC Large Cap	6.376538
8.	HDFC Top 100	107.149
9.	L&T India Large Cap	4.298177
10.	Invesco India Large cap	6.333778
11.	S&P BSE 100	2307.377

According to the above table, the HDFC top 100 fund has a high standard deviation of 107.149 when compared to the remaining large-cap funds, and the Franklin blue-chip fund has the second highest standard deviation of 99.39214 when compared to all other AMC's Large cap fund returns. However, the S&P BSE 100 has a higher standard deviation of 2307.377 when compared to all other AMC's large-cap fund returns. It demonstrates that the benchmark index is more volatile and riskier than all AMC Large Cap funds combined, while the remaining large-cap funds, such as Mirae Asset, Axis Blue Chip, ICICI Prudential, IDFC, IDFC, Nippon India Fund, L&T India, and Invesco Large Cap Fund, rank third in terms of lower volatility and risk.

Graph Showing Values of Standard Deviation Each Large CapFund:

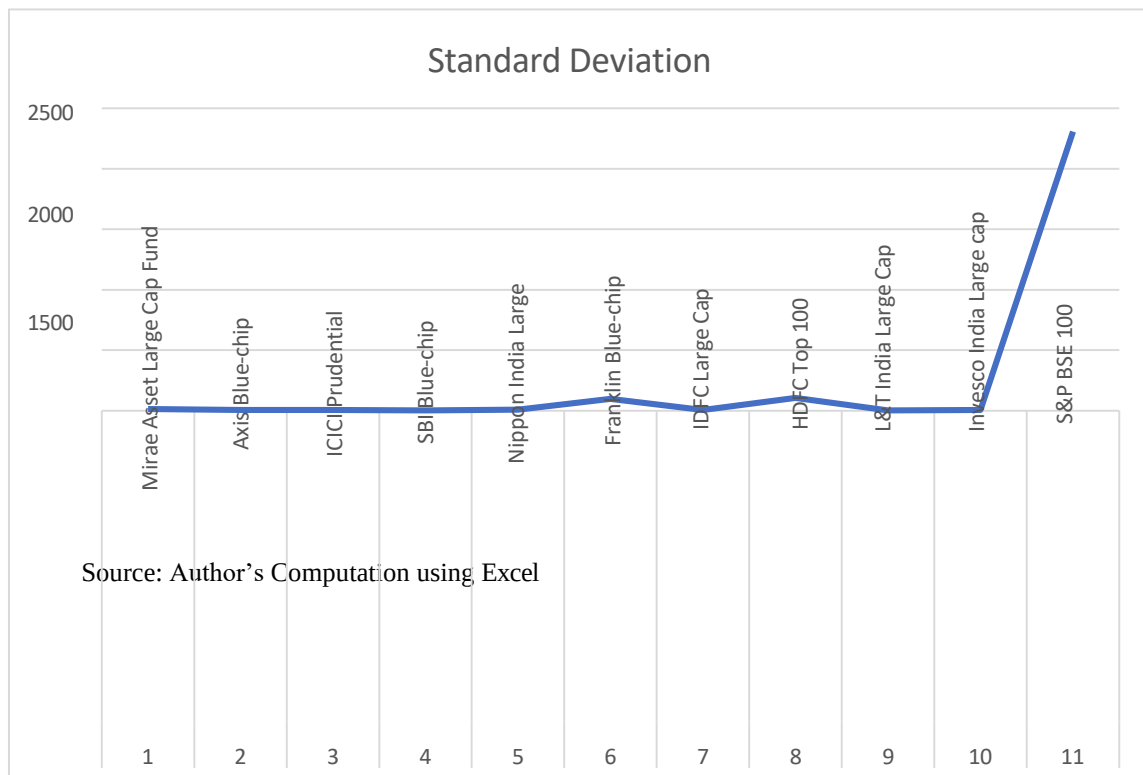
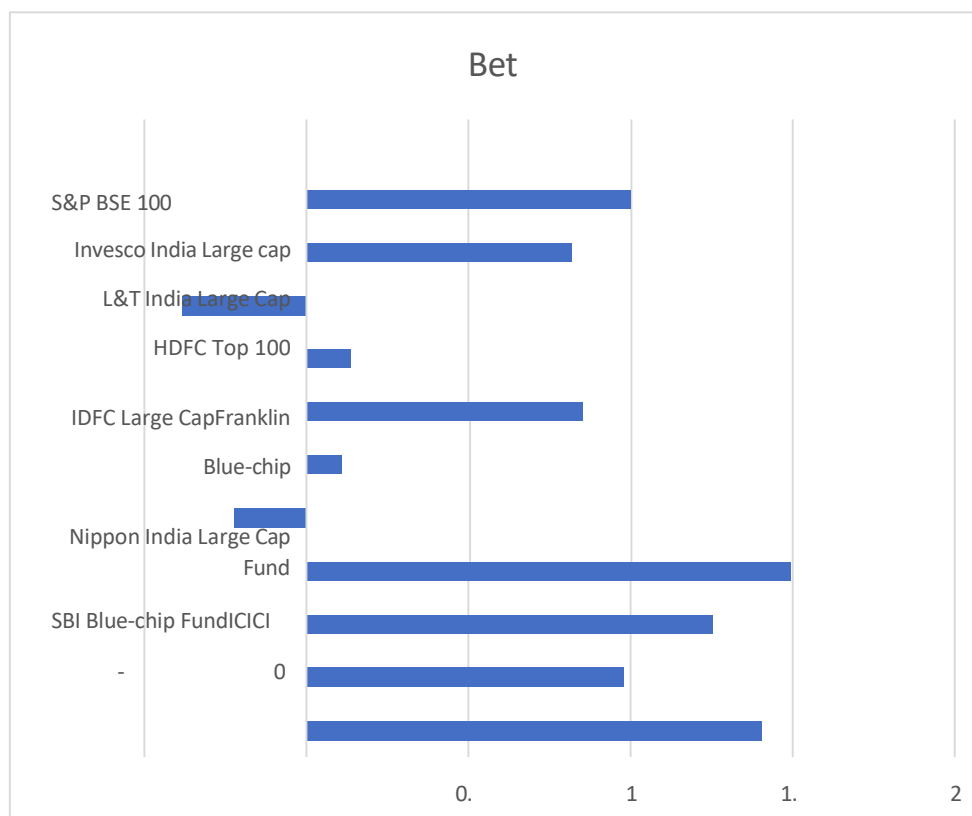


Table Showing Values of Beta of Each Large Cap Fund:

Sl. No	Name of The Fund	Beta
1.	Mirae Asset Large Cap Fund	1.4036
2.	Axis Blue-chip Fund	0.9783
3.	ICICI Prudential Blue-chip Fund	1.2538
4.	SBI Blue-chip Fund	1.4948
5.	Nippon India Large Cap Fund	-0.2233
6.	Franklin Blue-chip	0.1103
7.	IDFC Large Cap	0.8532
8.	HDFC Top 100	0.13862
9.	L&T India Large Cap	-0.3833
10.	Invesco India Large cap	0.82022
11.	S&P BSE 100	1

According to the table above, the beta value of the SBI big fund is 1.4948, making it more volatile than the other AMC large fund beta values and carrying more risk, despite the fact that the beta value of the S&P BSE benchmark index is 1. The beta values of the remaining AMC large-cap funds, including Mirae Asset, ICICI Prudential, Invesco India, IDFC, HDFC, and Axis Blue Chip large-cap funds, are 1.4036, 1.2538, 0.8532, and 0.82022, respectively. The L&T India large-cap fund has a negative beta value.

Graph Showing Values of Beta of Each Large Cap Fund:



Source: Author's Computation using Excel

Descriptive Analysis:

	AXIS_N E T_ASSE T _VAL UE	FRANK LI N_NET _ASSET _VAL UE	HDFC _N ET_A S SE T_VA LUE	ICICI_N ET _ASSET _VAL UE	IDFC_N E T_ASSE T _VAL UE	INVES CO _NET _AS SET_ V ALUE	L_T_ NE T_AS SE T_VAL UE	MIRA E_ NET_A SS ET_VA LUE	NIPPO N _NET_A S SET_V ALUE	SBI_N ET _ASSET _VAL UE	S_P_B SE _100
Mean	18.3826	348.404	313.657	17.69109	22.4186	18.7477	20.9163	29.8304	21.3087	16.2041	8492.973
Median	18.64	361.32	316.566	18.025	22.3829	19.4	21.1165	30.267	21.7131	15.435	8393.29
Maximum	32.33	485.185	521.117	32.33	34.2	30.16	29.176	54.518	36.9136	26.7439	14100.47
Minimum	0	176.385	168.052	0	13.1798	10.21	11.706	12.814	10.019	11.83	4804.13
Std. Dev.	6.46271	95.5653	107.148	6.537721	6.37654	6.33378	4.92342	13.0633	8.28863	3.37589	2347.481
Skewness	0.2943	-0.36341	0.3059	0.431304	0.28424	0.23893	-0.349	0.33111	0.28128	1.51676	0.129761

Kurtosis	1.94843	1.68554	1.65025	1.978251	1.67406	1.55245	1.98821	1.63233	1.59585	4.63176	1.731437
Jarque-Bera	135.119	346.683	225.104	183.1274	213.333	238.185	109.537	236.486	234.534	1206.26	173.319
Probability	0	0	0	0	0	0	0	0	0	0	0
Sum	41048.3	1284915	771597	43484.71	55149.8	46119.3	36394.4	73323.2	52419.3	39537.9	21071067
Sum Sq. Dev.	93223.2	3.4E+07	2.8E+07	105016.6	99983.5	98647.1	42153.4	419288	168937	27796.3	1.37E+10
Observation	2233	3688	2460	2458	2460	2460	1740	2458	2460	2440	2481

Source: Author's Computation using E-views.

To calculate the Descriptive Statistic, data does not need to be converted into at-level and intercept or first difference and trend and intercept formats. The descriptive analysis uses simply raw data and provides information on measures of central tendency such as mean, median, and mode. Dispersion metrics include range and variance, as well as standard deviation. Kurtosis assesses sharpness, while skewness measures symmetry. We reject the null hypothesis because the P-value is less than 5%.

Augmented Dickey-Fuller Unit Root Test of Each AMC's Large Cap Fund, April 2013 - Mar 2023

	Axis				Franklin			
Particulars	t- statistics	Critical value		P value	t- statistics	Critical value		P value
At level & Intercept	0.667134	1%	-3.43309	0.9915	-0.53186	1%	-3.43282	0.8825
		5%	-2.86264			5%	-2.86252	
		10%	-2.5674			10%	-2.56733	
At 1st Difference , trend & intercept	-31.294	1%	-3.96217	0.0000	-46.0559	1%	-3.96178	0.0000
		5%	-3.41183			5%	-3.41164	
		10%	-3.1278			10%	-3.12769	
	HDFC				ICICI			
At level & Intercept	-0.31595	1%	-3.43282	0.9202	0.693189	1%	-3.43282	0.9923
		5%	-2.86252			5%	-2.86252	
		10%	-2.56733			10%	-2.56734	
At 1st Difference , trend & intercept	-46.5828	1%	-3.96178	0.0000	-32.6774	1%	-3.96179	0.0000
		5%	-3.41164			5%	-3.41164	
		10%	-3.12769			10%	-3.12769	
	Invesco				IDFC			
			-				-3.43282	
		1%	3.432816			1%		
At level & Intercept	- 0.037197		-	0.9541	-0.30765			0.9214
		5%	2.862515			5%	-2.86252	

		10%	-			10%	-2.56733	
			2.56734					
			-					
		1%	3.961778			1%	-3.96178	
At 1st Difference , trend & intercep t	- 45.62134	5%	- 3.41163 6	0.0000	-45.7993	5%	-3.41164	0.000
		10%	- 3.12769 1			10%	-3.12769	
	L&T				Mirae			
			-				-	
		1%	3.432816			1%	3.432818	
At level & Intercept	- 1.882262	5%	- 2.86251 5			5%	- 2.86251 6	
					- 1.513412		-	
		10%	0.56733	0.3410		10%	2.567335	0.5629
			-				-	
		1%	3.961778			1%	3.96178	
At 1st			-				-	
Difference,		5%	3.411636			5%	3.41163	
trend &	-		-		-		-	
intercept	45.73263	10%	3.127691	0.0000	45.90225	10%	3.12769	0.0000
	Nippon				SBI			
			-				-	
		1%	3.43281			1%	3.43281	
At level &			-				-	
Intercept	-	5%	2.862515		-	5%	2.86251	
	0.094605		-	0.9482	1.053256		-	0.9482
		10%	2.567334			10%	2.56733	
			-				-	
At 1st		1%	3.96177			1%	3.96180	
			-					
Difference,		5%	3.41163			5%	-3.41165	
trend &			-					
intercept	-	10%	3.127692		-	10%	-3.12770	
	45.87373			0.0000	48.60199			0.0000

BSE S&P 100				
Particulars	t-statistics	Critical value		P value
At level & Intercept	-0.547884	1%	-3.43282	0.8793
		5%	-2.862518	
		10%	-2.567336	
At 1 st Difference,trend & intercept	-17.57423	1%	-3.961787	0.0000
		5%	-3.411641	
		10%	-3.127693	

Source: Author's Computation using E-views

The table displays the results of the Augmented Dickey-Fuller test. The results reveal that the large-cap funds of all AMCs, such as Axis blue chip fund, ICICI prudential blue-chip fund, Nippon India large-cap fund, Franklin blue chip fund, IDFC large-cap fund, HDFC top 100, L&T large-cap fund, Invesco India large-cap fund, and S&P BSE 100 benchmark index. Has a unit root problem at the level and intercept, but they are non-stationary. After performing a unit root test at the first difference, trend, and intercept, all AMCs Large cap fund and benchmark index are stationary, and the null hypothesis is rejected because the p-value is less than the 5% significance level, allowing them to proceed with the regression analysis.

Regression Analysis of Large Cap Funds:

Dependent Variable: AXIS_NET_ASSET_VALUE Method:

Least Squares

Date: 11/28/24 Time: 16:05

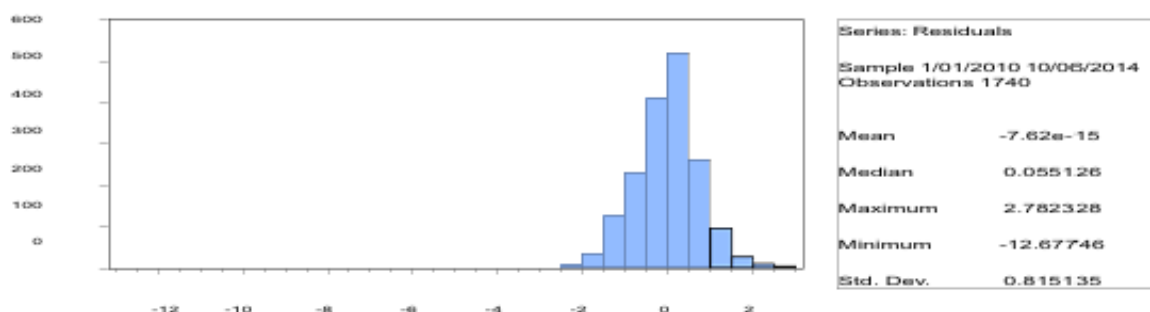
Sample (adjusted): 1/01/2013 10/06/2023 Included observations: 1740
after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FRANKLIN_NET_ASSET_VALUE	-0.083854	0.007914	-10.59624	0.0000
HDFC_NET_ASSET_VALUE	0.020836	0.005733	3.634104	0.0003
ICICI_NET_ASSET_VALUE	0.235070	0.044324	5.303463	0.0000
IDFC_NET_ASSET_VALUE	0.007974	0.053210	0.149849	0.8809
INVESCO_NET_ASSET_VALUE	0.316878	0.125503	2.524858	0.0117
L_T_NET_ASSET_VALUE	0.247736	0.012200	20.30641	0.0000
MIRAE_NET_ASSET_VALUE	-0.058502	0.009126	-6.410543	0.0000
NIPPON_NET_ASSET_VALUE	0.314925	0.079499	3.961369	0.0001
SBI_NET_ASSET_VALUE	-0.018932	0.011282	-1.678083	0.0935
S_P_BSE_100	0.001974	4.30E-05	45.87690	0.0000
C	1.864458	0.800870	2.328040	0.0200
R-squared	0.967489	Mean dependent var		15.72668
Adjusted R-squared	0.967301	S.D. dependent var		4.520826
S.E. of regression	0.817489	Akaike info criterion		2.441144
Sum squared resid	1155.471	Schwarz criterion		2.475672
Log likelihood	-2112.795	Hannan-Quinn criter.		2.453911
F-statistic	5145.378	Durbin-Watson stat		0.326278
Prob(F-statistic)	0.000000			

Source: Author's Computation using E-views

The probability value of SBI and IDFC large-cap funds is more than 5% significance level, i.e., 0.8809 and 0.0935, respectively, so the null hypothesis is rejected; all other AMCs large-cap funds P-value is less than 5% significance level, so the null hypothesis is accepted. The co-efficient values of dependent factors such as Edelweiss, Kotak, Nippon Tata, and L&T were negative, while all other funds had a positive influence due to independent variables. The R-square value of 0.967489 and an F-statistic value of less than 5% indicate that the model is fit.

Residual Diagnostics:



Source: Author's Computation using E-views

The Jarque-Bera test is a goodness-of-fit test that examines if sample data has skewness and kurtosis consistent with a normal distribution. The test is named after Carlos Jarque and Anil K. Bera. The test statistics are never negative. If it deviates significantly from zero, it suggests that the data does not follow a normal distribution. The residual diagnostic test shows that the P-value for large-cap funds is less than 5%, implying that the null hypothesis has been rejected. Jarque-Bera is more than 3, indicating that the data is leptokurtic with a long right tail skewness.

Unit Root Test after converting time series data in to the logarithmic value of Large Cap fund:

	LAXIS				LFRANKLIN			
Particulars	t-statistics	Critical value		P value	t-statistics	Critical value		P value
At level & Intercept	0.066379	1%	-3.433089	0.9631	-1.59915	1%	-3.431937	0.4829
		5%	-2.862636			5%	-2.862127	
		10%	-2.567399			10%	-2.567126	
At 1st		1%	-3.962165			1%	-3.960529	
Difference , trend & intercept	-43.3737	5%	-3.411826	0	-58.1648	5%	-3.411025	0
		10%	-3.127803			10%	-3.127328	
	LHDFC				LICICI			
At level & Intercept	-0.67694	1%	-3.432816	0.8505	-0.10877	1%	-3.432822	0.9467
		5%	-2.862515			5%	-2.862518	
		10%	-2.56733			10%	-2.567336	
At 1st Difference , trend & intercept	-46.2059	1%	-3.961778	0	-46.0743	1%	-3.961786	0
		5%	-3.411636			5%	-3.41164	
		10%	-3.127691			10%	-3.127693	
	LINVESCO				LIDFC			
At level & Intercept	-0.41124	1%	-3.432816	0.9049	-0.62945	1%	-3.432816	0.8616
		5%	-2.862515			5%	-2.862515	
		10%	-2.567334			10%	-2.567334	
At 1st Difference , trend & intercept	-45.9227	1%	-3.961778	0	-46.3093	1%	-3.961778	0
		5%	-3.411636			5%	-3.411636	
		10%	-3.127691			10%	-3.127691	
	LL&T				LMIRAE			

At level & Intercept	-1.16742	1%	-3.43391	0.6905	-0.74278	1%	-3.432818	0.8340
		5%	-2.862999			5%	-2.862516	
		10%	-2.567594			10%	-2.567335	
At 1st Difference , trend & intercept	-37.7637	1%	-3.963332	0	-46.1305	1%	-3.961781	0
		5%	-3.412397			5%	-3.411638	
		10%	-3.128142			10%	-3.127692	
	LNIPPON					LSBI		
At level & Intercept	-0.44327	1%	-3.432816	0.8993	-1.21492	1%	-3.432837	0.6702
		5%	-2.862515			5%	-2.862525	
		10%	-2.567334			10%	-2.567339	
At 1st Difference , trend & intercept	-45.819	1%	-3.961778	0	-48.3482	1%	-3.961809	0
		5%	-3.411636			5%	-3.411651	
		10%	-3.127691			10%	-3.1277	
		BSE S&P 100						
Particulars		t- statistics	Critical value				P value	
At level & Intercept		-0.5499	1%	-3.432793		0.8789		
			5%	-2.862505				
			10%	-2.567329				
At 1st Difference,trend & intercept		- 49.1585	1%	-3.961746		0		
			5%	-3.411621				
			10%	-3.127681				

Source: Author's Computation using E views

Table shows Cointegration test results:

Date: 07/19/24 Time:

14:11 Sample

(adjusted): 6 2233

Included observations: 2216 after adjustments

Trend assumption: Quadratic deterministic

trend

Series: LSPBSE100 LSBI LNIPPON LMIRAE LLT LINVESCO LIDFC_NET_ ASSET_ VALUE LICICI

LHDFC LFRANKLIN LAXIS L_T_NET_ASSET_ VALUE

Lags interval (in first differences): 1 to 4

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Probability
None *	0.041177	413.4046	358.7184	0.0001
At most 1 *	0.029587	320.2242	306.8944	0.0128
At most 2	0.025411	253.6699	259.0294	0.0834
At most 3	0.021976	196.6323	215.1232	0.2655
At most 4	0.017702	147.3904	175.1715	0.5393
At most 5	0.013337	107.8122	139.2753	0.7330
At most 6	0.011109	78.05922	107.3466	0.7841
At most 7	0.008112	53.30425	79.34145	0.8163
At most 8	0.006224	35.25401	55.24578	0.7521
At most 9	0.004242	21.41744	35.01090	0.6140
At most 10	0.003272	11.99724	18.39771	0.3093
At most 11 *	0.002134	4.733526	3.841466	0.0296

race test indicates 2 cointegrating eqn(s) at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

HypothesizedNo. of CE(s)	Eigenvalue	Max-EigenStatistic	0.05 Critical Value	Prob.**
None *	0.041177	93.18037	79.97865	0.0023
At most 1	0.029587	66.55428	73.94036	0.1988
At most 2	0.025411	57.03764	67.91026	0.3491
At most 3	0.021976	49.24192	61.80550	0.4598
At most 4	0.017702	39.57818	55.72819	0.7028
At most 5	0.013337	29.75297	49.58633	0.9144
At most 6	0.011109	24.75498	43.41977	0.9117
At most 7	0.008112	18.05024	37.16359	0.9622
At most 8	0.006224	13.83657	30.81507	0.9466
At most 9	0.004242	9.420193	24.25202	0.9324
At most 10	0.003272	7.263718	17.14769	0.6842
At most 11 *	0.002134	4.733526	3.841466	0.0296

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values.

From April 1st, 2010 to March 31st, 2020, the Johansen cointegration test was used to determine whether the BSE250 and the major funds of a chosen asset management business were in long-term equilibrium. The null hypothesis (H0) is rejected at the 5% level of significance since the large cap fund of the chosen AMC and the S&PBSE100 do not cointegrate. While the Max-eigenvalue test finds one cointegrating equation, the Trace test finds two. The critical value is exceeded by the Max-eigen test value. Since the variables do not cointegrate, short-run equilibrium can be found using the unconstrained Vector Autoregression approach.

Table shows the result of Vector Cointegration test:

Vector
Autoregr
ession
Estimates
Date:
07/21/24
Time:
12:11 Sample
(adjusted): 3 2460
Included observations:
2458 after adjustments
Standard errors in () &
t-statistics in []

	SBI	NIPP ON	MIR AE	L_T	INVE SCO	IDFC	ICICI	HDF C	FRAN KLIN	AXIS
SBI(-1) 1.00836 7		0.026 901	0.007 190	- 0.020 881	0.0118 07	0.022 970	- 0.022 405	0.376 197	0.24609 2	0.028 668
	(0.02 027)	(0.01 445)	(0.01 996)	(0.01 696)	(0.010 60)	(0.01 344)	(0.02 411)	(0.21 630)	(0.1849 7)	(0.02 703)
	[49.74 59]	[1.861 62]	[0.360 29]	[- 1.230 82]	[1.1137 2]	[1.709 22]	[- 0.929 19]	[1.739 21]	[1.33045]	[1.060 43]
SBI(-2) 0.020325	-	- 0.034 330	- 0.005 381	0.021 377	-0.0172 61	- 0.028 980	0.035 596	- 0.473 585	-0.33792 7	- 0.028 158
	(0.02 029)	(0.01 446)	(0.01 998)	(0.01 698)	(0.010 61)	(0.01 345)	(0.02 413)	(0.21 650)	(0.1851 4)	(0.02 706)
	[- 1.001 79]	[- 2.373 52]	[- 0.269 36]	[1.258 93]	[- 1.6267 0]	[- 2.154 52]	[1.474 90]	[- 2.187 44]	[- 1.82527]	[- 1.040 62]
NIPPON(-1) 0.01563 0		0.888 172	0.031 229	0.039 527	-0.0739 01	- 0.101 190	0.121 869	- 1.523 245	-1.51550 0	0.012 976
	(0.09 672)	(0.06 895)	(0.09 522)	(0.08 095)	(0.050 58)	(0.06 412)	(0.11 505)	(1.03 207)	(0.8825 6)	(0.12 899)
	[0.161 61]	[12.88 16]	[0.327 96]	[0.488 31]	[- 1.4609 8]	[- 1.578 10]	[1.059 27]	[- 1.475 91]	[- 1.71717]	[0.100 60]
NIPPON(-2) - 0.023296		0.026 652	- 0.068 577	- 0.040 996	0.0325 47	0.037 169	- 0.052 426	0.474 450	0.66753 3	- 0.003 745
	(0.09 672)	(0.06 895)	(0.09 523)	(0.08 095)	(0.050 59)	(0.06 413)	(0.11 506)	(1.03 214)	(0.8826 2)	(0.12 900)
	[- 0.240 85]	[0.386 52]	[- 0.720 12]	[- 0.506 43]	[0.6433 9]	[0.579 63]	[- 0.455 65]	[0.459 68]	[0.75631]	[- 0.029 03]

MIRAE(-1) 0.00445 9	0.004 144	1.071 469	0.020 177	0.0092 22	0.011 647	0.018 295	0.113 906	0.05360 1	0.001 595
(0.02 052)	(0.01 463)	(0.02 021)	(0.01 718)	(0.010 73)	(0.01 361)	(0.02 441)	(0.21 900)	(0.1872 7)	(0.02 737)
[0.217 26]	[0.283 24]	[53.02 79]	[1.174 69]	[0.8592 1]	[0.856 01]	[0.749 39]	[0.520 13]	[0.28622]	[0.058 28]
MIRAE(-2) - 0.004053	- 0.001 843	- 0.073 441	- 0.019 368	-0.0064 68	- 0.008 316	- 0.020 289	- 0.072 504	-0.01708 0	0.002 368
(0.02 050)	(0.01 461)	(0.02 018)	(0.01 716)	(0.010 72)	(0.01 359)	(0.02 438)	(0.21 874)	(0.1870 5)	(0.02 734)
[- 0.197 71]	[- 0.126 11]	[- 3.638 85]	[- 1.128 93]	[- 0.6033 4]	[- 0.611 93]	[- 0.832 03]	[- 0.331 46]	[- 0.09131]	[0.086 60]
L_T(-1) 0.02121 0	0.000 859	- 0.001 873	1.074 621	-0.0127 53	- 0.004 978	0.015 532	0.010 594	-0.10684 1	0.021 301
(0.02 411)	(0.01 719)	(0.02 374)	(0.02 018)	(0.012 61)	(0.01 599)	(0.02 868)	(0.25 731)	(0.2200 4)	(0.03 216)
[0.879 60]	[0.049 99]	[- 0.078 87]	[53.24 80]	[- 1.0112 4]	[- 0.311 40]	[0.541 48]	[0.041 17]	[- 0.48556]	[0.662 36]
L_T(-2) - 0.017500	- 0.009 436	- 0.000 950	- 0.078 293	0.0060 65	- 0.004 105	- 0.011 082	- 0.143 492	0.01536 5	- 0.010 715
(0.02 415)	(0.01 722)	(0.02 378)	(0.02 021)	(0.012 63)	(0.01 601)	(0.02 873)	(0.25 771)	(0.2203 8)	(0.03 221)
[- 0.724 59]	[- 0.548 09]	[- 0.039 94]	[- 3.873 46]	[0.4801 6]	[- 0.256 36]	[- 0.385 75]	[- 0.556 79]	[0.06972]	[- 0.332 65]
INVESCO(-1) - 0.090061	- 0.031 408	0.050 030	- 0.059 183	0.9330 30	- 0.077 605	0.322 742	- 0.703 439	0.42345 0	0.127 887
(0.11 127)	(0.07 932)	(0.10 955)	(0.09 313)	(0.058 19)	(0.07 377)	(0.13 236)	(1.18 737)	(1.0153 6)	(0.14 840)
[- 0.809 38]	[- 0.395 94]	[0.456 68]	[- 0.635 51]	[16.032 8]	[- 1.051 99]	[2.438 34]	[- 0.592 44]	[0.41705]	[0.861 76]
INVESCO(-2) 0.08237 5	- 0.140 435	- 0.023 658	0.030 820	-0.1000 54	- 0.112 196	- 0.188 858	- 1.986 116	-2.58195 0	- 0.052 265
(0.11 088)	(0.07 904)	(0.10 917)	(0.09 280)	(0.057 99)	(0.07 351)	(0.13 189)	(1.18 317)	(1.0117 7)	(0.14 788)

	[0.742 93]	[- 1.776 67]	[- 0.216 71]	[0.332 12]	[- 1.7253 8]	[- 1.526 28]	[- 1.431 89]	[- 1.678 63]	[- 2.55191]	[- 0.353 43]
IDFC(-1) 0.08644 8	- 0.118 911	0.019 209	- 0.063 657	-0.0617 85	0.922 527	- 0.217 116	- 1.596 776	-1.57663 8	- 0.264 480	
	(0.10 793)	(0.07 694)	(0.10 626)	(0.09 033)	(0.056 45)	(0.07 155)	(0.12 839)	(1.15 170)	(0.9848 6)	(0.14 394)
	[0.800 97]	[- 1.545 48]	[0.180 77]	[- 0.704 73]	[- 1.0945 8]	[12.89 28]	[- 1.691 13]	[- 1.386 45]	[- 1.60088]	[- 1.837 38]

IDFC(-2) 0.065735		- 0.048 405	- 0.021 639	0.061 651	0.0044 17	- 0.002 306	0.246 178	0.544 368	0.70794 8	0.167 628
	(0.10 761)	(0.07 671)	(0.10 595)	(0.09 006)	(0.056 28)	(0.07 134)	(0.12 801)	(1.14 829)	(0.9819 5)	(0.14 352)
	[- 0.610 86]	[0.630 99]	[- 0.204 24]	[0.684 53]	[0.0784 9]	[- 0.032 32]	[1.923 18]	[0.474 07]	[0.72096]	[1.167 99]
ICICI(-1) 0.02152 4		0.094 169	- 0.006 584	- 0.003 063	0.0745 75	0.093 802	0.543 521	1.378 521	1.18109 7	0.009 394
	(0.01 629)	(0.01 161)	(0.01 604)	(0.01 363)	(0.008 52)	(0.01 080)	(0.01 938)	(0.17 383)	(0.1486 5)	(0.02 173)
	[1.321 31]	[8.109 05]	[- 0.410 51]	[- 0.224 69]	[8.7533 8]	[8.685 64]	[28.04 92]	[7.930 38]	[7.94569]	[0.432 39]
ICICI(-2) 0.019497		- 0.078 477	0.005 893	0.026 913	0.0649 66	0.081 268	0.327 543	1.208 307	0.95084 9	0.017 906
	(0.01 737)	(0.01 239)	(0.01 711)	(0.01 454)	(0.009 09)	(0.01 152)	(0.02 067)	(0.18 539)	(0.1585 4)	(0.02 317)
	[- 1.122 21]	[6.336 24]	[0.344 50]	[1.850 85]	[7.1497 8]	[7.055 61]	[15.84 89]	[6.517 54]	[5.99768]	[0.772 77]
HDFC(-1) 0.00295 4		- 0.001 456	0.003 843	0.001 539	-0.0022 40	- 0.003 762	- 0.002 082	0.980 702	-0.02059 4	0.006 770
	(0.00 664)	(0.00 474)	(0.00 654)	(0.00 556)	(0.003 47)	(0.00 441)	(0.00 790)	(0.07 090)	(0.0606 3)	(0.00 886)
	[0.444 55]	[- 0.307 41]	[0.587 38]	[0.276 68]	[- 0.6445 3]	[- 0.854 12]	[- 0.263 41]	[13.83 20]	[- 0.33967]	[0.764 00]
HDFC(-2) 0.001650		- 0.003 196	- 0.002 272	- 0.002 459	0.0025 80	0.004 601	0.000 724	0.029 931	0.03303 8	0.001 623
	(0.00 667)	(0.00 475)	(0.00 656)	(0.00 558)	(0.003 49)	(0.00 442)	(0.00 793)	(0.07 114)	(0.0608 4)	(0.00 889)

	[- 0.247 55]	[0.672 51]	[- 0.346 12]	[- 0.440 66]	[0.7398 9]	[1.040 84]	[0.091 27]	[0.420 72]	[0.54305]	[0.182 54]
FRANKLIN(- 1) - 0.004536		0.017 115	- 0.009 269	0.000 437	0.0129 51	0.017 346	- 0.006 793	0.217 079	1.17431 4	- 0.001 116
	(0.00 790)	(0.00 563)	(0.00 777)	(0.00 661)	(0.004 13)	(0.00 524)	(0.00 939)	(0.08 426)	(0.0720 6)	(0.01 053)
	[- 0.574 37]	[3.040 29]	[- 1.192 21]	[0.066 12]	[3.1357 8]	[3.313 33]	[- 0.723 22]	[2.576 18]	[16.2970]	[- 0.105 92]
FRANKLIN(- 2) 0.00266 0		- 0.006 589	0.009 092	0.001 271	- 0.0037 99	- 0.006 072	- 0.001 034	- 0.055 044	- 0.05015 2	- 0.008 192
	(0.00 788)	(0.00 562)	(0.00 776)	(0.00 659)	(0.004 12)	(0.00 522)	(0.00 937)	(0.08 406)	(0.0718 8)	(0.01 051)
	[0.337 68]	[- 1.173 29]	[1.172 36]	[0.192 74]	[- 0.9222 6]	[- 1.162 63]	[- 0.110 37]	[- 0.654 86]	[- 0.69773]	[- 0.779 80]

AXIS(-1) 0.00466 3		- 0.008 708	0.010 111	0.004 487	- 0.0063 30	- 0.005 903	0.013 570	- 0.059 868	- 0.04037 6	0.731 579
	(0.01 463)	(0.01 043)	(0.01 440)	(0.01 224)	(0.007 65)	(0.00 970)	(0.01 740)	(0.15 610)	(0.1334 8)	(0.01 951)
	[0.318 75]	[- 0.835 06]	[0.702 02]	[0.366 49]	[- 0.8274 3]	[- 0.608 67]	[0.779 83]	[- 0.383 53]	[- 0.30248]	[37.49 85]
AXIS(-2) - 0.004348		0.007 177	0.010 341	0.004 582	0.0052 57	0.004 472	0.012 516	0.037 260	0.02096 4	0.273 047
	(0.01 468)	(0.01 047)	(0.01 446)	(0.01 229)	(0.007 68)	(0.00 973)	(0.01 747)	(0.15 668)	(0.1339 9)	(0.01 958)
	[- 0.296 13]	[0.685 68]	[- 0.715 34]	[- 0.372 85]	[0.6845 8]	[0.459 39]	[- 0.716 60]	[0.237 80]	[0.15646]	[13.94 31]
S_P_BSE_100 1.11E-05		- 5.52E -06	1.28E -06	- 1.87E -06	- 4.33E- 07	9.28E -08	3.43E -05	- 4.55E -05	-1.53E- 05	4.99E -06
	(8.3E- 06)	(5.9E- 06)	(8.2E- 06)	(6.9E- 06)	(4.3E- 06)	(5.5E- 06)	(9.9E- 06)	(8.8E- 05)	(7.6E- 05)	(1.1E- 05)
	[1.342 14]	[- 0.934 51]	[0.157 16]	[- 0.270 06]	[- 0.0998 4]	[0.016 88]	[3.472 81]	[- 0.513 89]	[- 0.20166]	[0.451 24]
R-squared 0.99338 0		0.999 405	0.999 543	0.996 946	0.9994 52	0.999 131	0.997 347	0.999 203	0.99932 2	0.999 921

Adj. R-squared 0.99332 6	0.999 400	0.999 539	0.996 921	0.9994 47	0.999 124	0.997 325	0.999 196	0.99931 7	0.999 920
Sum sq. resids 197.454 8	100.3 478	191.4 026	138.3 089	54.009 75	86.78 754	279.3 994	22483 .89	16441.4 6	351.2 187
S.E. equation 0.28464 7	0.202 921	0.280 250	0.238 230	0.1488 70	0.188 713	0.338 598	3.037 442	2.59742 2	0.379 630
F-statistic 18284.6 3	20479 4.6	26634 2.9	39779 .96	22219 1.1	14009 6.1	45806 .19	15268 6.2	179654. 2	15353 20.
Log likelihood - 388.7126	443.1 574	- 350.4 528	48.83 621	1204.4 96	621.5 829	- 815.3 383	- 6208. 082	- 5823.41 4	- 1096. 493
Akaike AIC 0.33337 1	- 0.343 497	0.302 240	- 0.022 649	- 0.9629 75	- 0.488 676	0.680 503	5.068 415	4.75542 3	0.909 270
Schwarz SC 0.38298 4	- 0.293 884	0.351 853	0.026 964	- 0.9133 61	- 0.439 063	0.730 116	5.118 029	4.80503 6	0.958 883
Mean depend ent	16.28 809	21.31 638	29.79 774	21.12172 18.7536 3	22.42 473	17.70 898	313.7 643	318.521 7	30.17 830
S.D. depend ent	3.484 207	8.287 567	13.05 204	4.293447 6.33290 7	6.375 513	6.546 909	107.1 257	99.3621 3	42.44 144
Determinant resid	2.01E -12								
covariance (dof adj.)									
Determinant resid covariance	1.85E -12								
Log likeliho od		- 1672. 357							
Akaike inform ation criterio n		1.531 617							
Schwarz criterio n		2.027 749							

Number of coefficients	210								
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Table Showing Pair Wise Granger Causality Test on Large Cap Funds:

Pairwise Granger Causality Tests			
Date: 11/28/24 Time: 22:39			
Sample: 1/01/2013 2/05/2023			
Lags: 2			
Null Hypothesis:		OBS	F-Statistic Prob.
LS&P BSE 100 does not Granger Cause LAXIS		2228	12.3520 5.E-06
LAXIS does not Granger Cause LS&P BSE 100			4.18623 0.0153
doe	LS&P bse100 not Granger Cause LFRANKLIN	2479	2.79291 0.0614
LFRANKLIN does not Granger Cause LS&P bse100			4.66921 0.0095
LS&P bse100 does not Granger Cause LHDFC		2458	5.22615 0.0054
LHDFC does not Granger Cause LS&P bse100			5.75680 0.0032
LS&P bse100 does not Granger Cause LICICI		2453	6.55449 0.0014
LICICI does not Granger Cause LS&P bse100			1.89768 0.1501
LS&P bse100 does not Granger Cause LIDFC		2458	5.32786 0.0049
LIDFC does not Granger Cause LS&P bse100			10.3345 3.E-05
LS&P bse100 does not Granger Cause LINVESCO		2458	3.94777 0.0194
LINVESCO does not Granger Cause LS&P bse100			9.24765 0.0001
LS&P bse100 does not Granger Cause LLT		1738	3.57366 0.0283
LLT does not Granger Cause LS&P bse100			0.63800 0.5285
LS&P bse100 does not Granger Cause LMIRAE		2456	0.00090 0.9991
LMIRAE does not Granger Cause LS&P bse100			7.98474 0.0003
LS&P bse100does not Granger Cause LNIPPON		2458	4.59748 0.0102
LNIPPON does not Granger Cause LS&P bse100			7.36581 0.0006
LS&P bse100 does not Granger Cause LSBI		2438	0.75085 0.4721
LSBI does not Granger Cause LS&P bse100			0.09099 0.9130

H3: The S&P BSE 100 benchmark index does not Granger Reasons The probability values for Franklin, HDFC, IDFC Invesco large-cap funds, and the daily returns of all AMCs are 0.0032, 0.0014, 0.0049, and 0.0194, respectively, and are below the necessary significance threshold of 0.05. Lastly, we adopt the null hypothesis, which asserts that there is no meaningful causal connection between the benchmark index S&P BSE 150 and a small number of AMC large-cap funds. However, Granger causation exists between the S&P BSE 150 benchmark index and Axis, Franklin, I&T, Mirae, Nippon, and SBI funds, therefore we reject the null hypothesis because the p-value is more than a 5% significance level.

Conclusion:

The study found that only a few large cap funds have a unidirectional causal relationship between mutual fund flow and stock market return. However, many asset management firms' large cap funds have no correlation. Investors can select the right fund based on returns and volatility by using performance indicators such as standard deviation and beta value. They should also consider the average.

Authors Contribution:

Dr. Kavitha H: Supervision, Data Analysis and Lead the entire research work.

Mr. Sunil Kumar C: Data Collection, Literature Review.

Ms. Pooja N Karanth: Data Collection, Review and Writing of Manuscript.

Mr. Lingaraja B M: Writing of Manuscript, Data Analysis and Hypothesis statement.

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