AN EMPIRICAL STUDY ON PERFORMANCE OF DIVERSIFIED EQUITY MUTUAL FUNDS WITH SPECIAL REFERENCE TO LARGE CAP AND MID CAP FUNDS

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Abstract: Mutual fund in India is four decade old and growing industry. There are nearly 38 active players competing in financial market. Each of these Asset Management Companies offers a wide variety of mutual fund schemes to investors. Therefore selection of mutual funds becomes a difficult task for investors. Mostly investors choose a fund based on their investment objective, return expectation and risk appetite. The present study attempts to evaluate risk and return of the various large cap and mid cap funds using financial performance evaluation techniques like Sharpe measure, Treynor, R^2, Standard deviation and beta. Selected categories of funds were compared to their respective market index, in order to analyze their ability to outperform the benchmark and also to assess risk of investing in these schemes. The outcome of the study suggests that small investors can expect a double digit returns if they keep a healthy ratio of large cap and mid cap funds in their portfolio.

Key words: Mutual Funds, large cap, mid cap, investment, performance

Introduction

The financial system is divided into four parts Financial Market, Financial Institutions, Financial Service and Financial Instruments. Effective functioning of a financial system is crucial for proper transfer and allocation of funds in an economy. Economic reform in India was initiated in 1991, when liberalization, privatization and globalization were introduced. A second reform period was seen in 1997 when revolution in industrial and financial sectors was witnessed. Since then the Indian economy has witnessed a series of transformation and expanding geographical boundaries. There is rapid growth of capital market, a wide range of financial products and services offered in the market.

Concept of Mutual Fund

Association of Mutual Funds in India (AMFI) is an organization that registers Asset Management Companies. It defines Mutual Funds as "Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. Anybody with an investible surplus of as little as a few thousand rupees can invest in mutual fund units according to their stated investment objective and strategy." Mutual fund is a financial institution that pools money from many individual investors whose investment objectives are same. The fund is professionally managed by fund managers who have required skills and market knowledge. The collected corpus is then invested in financial market in line with the scheme's investment objectives. The income earned by the fund as well as the capital appreciation generated is then distributed amongst the investors based on the proportion of units owned by them.

Mutual fund investment gives several benefits to the investors like portfolio diversification, professional management, liquidity, low risk, low cost, transparency, variety of schemes and safety. It offers wide choice of schemes to investors. Investors can choose a scheme based on his/her investment objective, expected return and risk appetite. The types of schemes generally offered are Open Ended Funds, Close Ended Funds, Interval Funds, Growth Funds, Income Funds, Balanced Funds, Money Market Funds, Tax Saving Funds, Special Funds, Index Funds and Sector Specific Funds.

Origin and Growth of Mutual Funds

Mutual fund was originated in western countries. Initially it was set up in United Kingdom in 1868. The basic objective was to diversify risk of investors. In United State an open-ended investment company was established in 1924. Post World War-II was boom period for mutual fund industry. As most of the people didn't have investment knowledge so they found mutual fund to be the best avenue to take benefit of economic growth. Mutual fund organizations in many countries including Canada, Japan, Hongkong, Thailand, Singapore, Korea, Netherlands, Mauritius etc are on a growth path and showing good performance.

Mutual Fund industry in India was initiated in 1963 with the formation of UTI by the government of India. . "The main aim of the UTI was to enable the common investors to participate in the prosperity of capital market through portfolio management aimed at reasonable return, liquidity and safety and to contribute to India's industrial development by channelizing household savings into corporate investment". Securities and Exchange Board of India (SEBI) notified first regulation in 1993 and fully revised it in 1996, after which it was amended many times. As per AMFI, the journey of mutual funds in India can be divided in four phases First Phase: 1964–87 (Monopoly of UTI), Second Phase: 1987–93 (Entry of Public sector Mutual Funds), Third Phase: 1993–2003 (Entry of Private sector Mutual Funds) and Fourth Phase: since February 2003.

Literature Review

Gupta (1974) conducted a research on mutual fund industry in order to examine the performance of the funds. The time period of the study was 1962-71. The performance of the mutual funds was evaluated based on Sharpe, Treynor and Jensens models. The study concluded that all the funds selected for the study performed better than market irrespective of the choice of market index. Comparison of results from all the three models suggested that they outcome was similar. Mutual funds were divided into subgroups. All the subgroups outperformed market except income funds and balanced funds. All the funds considered in the study displayed different level of risk and volatility. It was pointed out that funds that had high volatility were superior to others.

Gupta (1989) focused on mutual fund schemes that had similar risk and encounters similar constraints. Their performance was evaluated on various risk-return parameters. A model was developed and schemes were compared at different level of risk. In this model total return was divided into three categories namely return from investor's risk, return from manager's risk and target risk. Mutual fund returns also varied because of selectivity issue. Return due to selectivity was also studied and subdivided into return due to selection of securities and return due to timing of investment for a particular group of securities.

Batra and Bhatia (1992) studied several mutual funds schemes and compared them with respect to their return and mobility. The results of the study revealed that UTI, LIC and SBI mutual funds are operating in financial market since a long period of time. They have a record of declaring dividends ranging from 11 to 16 percent. Mutual funds promoted by Canbank, Indian Bank and PNB were reported to be good investment option based on their performance. Mutual funds were also compared to the industrial securities and it was found that they yield an equally good return.

Shah and Thomas (1994) focused on 11 mutual fund schemes. Their performance was evaluated considering the market price. The time period for which each scheme was studied was the launch date of a respective scheme to April 1994. They computed their weekly return on the basis of Jensen and Sharpe measure. The results of the study found that majority of the schemes except UTI UGS 2000, performed poor in comparison to market index. The main reason identified for such an inferior performance was high risk and lack of diversification.

Chander (2000) conducted a study on 34 mutual fund schemes. The analysis was based on three fund characteristics. Time frame of the study was 1994 to 1997. BSE SENSEX was considered as benchmark indices and 91-days treasury bill was taken as risk-free investment. The outcome of the study suggests that many mutual fund schemes outperformed market and their volatility was also found to be high as compared to market. Returns of open ended schemes were better than close ended schemes. Income funds yielded better returns in comparison to growth and balanced funds. Mutual funds schemes selected for the study had an annual return of 7.34 percent due to diversification and 4.1 percent due to stock selectivity. The study also reported 12 primary factors that explained majority of total variance in portfolio management practices.

Mehta and Shah (2012) attempted to analyze preference of investors towards mutual fund investment and compare performance of various mutual fund schemes based on the return parameters. The study was conducted in Ahmedabad and Baroda city. The study found out that mutual fund is the second most preferred investment avenue after saving account. Age and factor preferred by investors displayed no significant relationship. Annual income is independent of annual investment in mutual fund and also share of mutual funds in total investment. A significant association was found between knowledge about mutual fund and qualification of investors. A risk and return analysis of various schemes of mutual funds revealed that Canara Robeco Equity TaxSaver – Growth is a better scheme as per Sharpe and Treynor ratio but according to standard deviation, beta and correlation Axis Long Term Equity Fund - Growth is considered a better scheme. Return analysis suggests that an investor has to keep invested in mutual funds for a long term period as all top 5 schemes of equity sector yield negative return in short term.

Prajapati and Patel (2012) conducted a study on equity diversified mutual fund schemes of selected companies with an objective to compare their performance and also to evaluate it with respect to the market. They considered top five Asset Management Companies (AMC) as on 30th September 2011and randomly picked a mutual fund scheme for each AMC. BSE SENSEX benchmark is considered to represent market. With respect to portfolio and scheme return and also the Sharpe's index HDFC Top 200 Fund-Growth performed better in comparison to other funds. Calculation of Treynor's index showed that HDFC and Reliance mutual fund offers better return in comparison to other schemes. When risk was considered Reliance regular saving fund were reported to be most risky in comparison to other funds. Comparison of beta value of the funds revealed that Birla Sun Life Advantage Fund – Growth has higher beta value than all other schemes. Overall it was concluded that all funds had positive return during 2007 to 2011. Also all the funds were reported to be less volatile than benchmark.

Bahl and Rani (2012) conducted risk and return analysis of selected mutual fund schemes in order to evaluate and compare their performances. Analysis was also conducted to see whether these schemes outperformed or underperformed the benchmark. 29 schemes were selected on a random basis and their monthly NAVs were recorded for six years. The study revealed that 14 schemes have outperformed market in terms of return. HDFC equity growth fund was reported to yield highest return and Principal growth fund was reported to yield minimum return. 14 schemes were found to be less risky than market and rest schemes showed higher riskiness than market risk. Result of Treynor ratio showed that 19 schemes outperformed the benchmark possibly because of diversification issue. Sharpe ratio was positive for all the schemes which show that schemes return was more than risk free rate of return. Jenson measure also reported that 19 schemes have positive alpha.

Karrupasamy and Vanaja (2013) used measures like Sharpe, Treynor and Jenson to appraise the performance of different categories of mutual funds. Funds were categorized into large cap and mid cap. The outcome of the study revealed that majority of the schemes performed better than the market and also better than their category average. In

large cap performance of SBI Blue Chip Fund (G) and Birla SL Frontline Equity -A (G) was better than other schemes for all the three appraisal measures and in mid cap category SBI Emerging Busi (G) and IDFC Premier Equity - A (G) outperformed others. Shukla (2015) defined 5 categories of mutual funds namely large cap, infrastructure, hybrid, multi cap and mid & small cap. Three schemes from each category was chosen and compared on the basis of their performance using statistical tools like standard deviation, beta, alpha, R squared, sharpe ratio. It was reported that all the schemes gave a positive return. Midcap and small cap performed superiorly over benchmark, large and hybrid funds. Risk analysis revealed that hybrid funds had low overall risk as compared to other funds because they had large proportion of debt funds in their portfolio. Large cap funds and consumption funds witnessed least deviation of returns from benchmark and thereby had lower beta. Overall mutual fund investment proofed to be a good avenue for the time period 2012 to 2014.

Goyal (2015) examined top 10 equity diversified mutual funds in India as per Crisil September 2014. The funds chosen were Birla Sun Life Top 100 Fund, BNP Paribas Equity Fund, SBI Blue Chip Fund, UTI Equity Fund, Birla Sun Life Frontline Equity Fund, BOI AXA Equity Fund, Canara Robeco Large Cap+ Fund, Franklin India Opportunities Fund, Kotak Opportunities, L&T Equity Fund. Performance of these funds was also compared with S&P CNX Nifty. The study concluded that average returns of mutual fund schemes are better than benchmark indices return. It also pointed out that standard deviation of mutual fund schemes are higher. Franklin India mutual fund was reported to give best return. It has low variation in return and high sharp ratio, Treynor ratio and Jensen alpha.

Bhagyashree and Kishori (2016) examined performance of 30 mutual fund schemes selected randomly. Closing NAV's for each day was noted for a period of five years. Findings of the study show that Tata Equity Opportunity funds gave maximum returns while Reliance growth funds had minimum return. 14 out of 30 schemes had less risk than market risk, rest all the schemes have greater risk than market. 8 schemes have beta value greater than one which signifies that they have high risk. All the funds studied have positive value of Sharpe ratio, 14 funds had Sharpe ratio greater than benchmark portfolio. Top three funds in terms of Sharpe ratio were Tata Equity opportunities funds, HDFC large cap fund and Franklin India flexi cap fund.

Research Methodology

Research Objectives

This research work is undertaken with the following objectives:

- ☐ To examine the performance of Large Cap and Mid cap scheme and returns it can generate in long term.
- ☐ To evaluate the performance of market benchmark with that of the schemes.
- ☐ Comparative performance analysis of schemes using Sharpe, Treynor, R-

Square, Beta and Standard deviation.

This research work examine and compare the performance of equity diversified large and Mid cap mutual funds in India.10 Schemes having average asset under management (AAUM) of at least 1000 crores are selected using random sampling method. Selected funds have history of atleast 10 years or more. Why 10 years or more ? It's because it would cover multiple business cycles and is long enough to judge a fund's true performance The term 'cap' simply refers to the 'market capitalisation' of the stock. It is the value of the stock that is arrived at by multiplying the stock price by the company's outstanding number of equity shares. Market capitalisation for large cap Fund's stocks, ranges from Rs 200 billion to Rs 3,500 billion, midcap ranges from Rs 50 billion to Rs 200 billion. Accordingly fund managers invest in such stock respectively. The daily closing data of NAVs of the equity diversified mutual funds are collected from Association of Mutual Funds in India AMFI's website as on 1 September 2016. Descriptive statistics, and risk adjusted measure are used to evaluate the performance of the selected funds

The **compound annual growth rate (CAGR)** has been used to measure return growth over multiple time periods. It is the growth rate that starts from the initial investment value to the ending investment value which has been compounding over the time period.
The formula for CAGR is:
CAGR $= (EV / BV)^{1/n} - 1$
where:
EV = Investment's ending value
BV = Investment's beginning value
n = Number of periods (months, years, etc.)
Although average annual return is a common measure for mutual funds, CAGR is a better measure of an investment's return over time. Average annual return ignores the effects of compounding and it can overestimate the growth of an investment. CAGR, on the other hand, is a geometric average that represents the one, consistent rate at which the investment would have grown if the investment had compounded at the same rate each year.

 Sharpe Ratio measures how well the fund has performed vis-a vis the risk taken by it. It is the excess return over risk-free return (usually return from treasury bills or government securities) divided by the standard deviation. The higher the Sharpe Ratio, the better the fund has performed in proportion to the risk taken by it. The Sharpe ratio is also known as Reward-to-Variability ratio and it is named after William Forsyth Sharpe.

Computation:
SR = (TOTAL RETURN – RISK FREE RATE) / STANDARD DEVIATION OF FUND

Treynor ratio is also known as reward-to-volatility ratio, Treynor ratio is the excess return generated by a fund over and above the risk free return (government bond yield). It

is similar to Sharpe ratio though one difference is that it uses beta as a measure of a measure of volatility. The ratio is named after Jack L. Treynor

The higher the Treynor ratio, the better the performance of the portfolio under analysis.

Computation:

$$T = \frac{r_i - r_f}{\beta_i}$$

where: T=Treynor ratio, ri =Portfolio's return,rf =risk free rate, B i's = Portfolio's beta

Standard deviation (SD) measures the volatility the fund's returns in relation to its average.

Computation:

Standard Deviation (SD) = Square root of Variance (V)
Variance = (Sum of squared difference between each monthly return and its mean / number of monthly return data – 1).

R-Squared measures the relationship between a portfolio and its benchmark. It is simply a measure of the correlation of the portfolio's returns to the benchmark's returns.

Computation:

R-Squared = Square of Correlation ®
Formula for Correlation ®:

<center>Covariance between index and portfolio</center>

Correlationxy = ---
<center>Standard deviation of portfolio * standard deviation of index</center>

Beta measures a fund's volatility compared to that of a benchmark. It computes, how much a fund's performance would swing compared to a benchmark.

Computation:
Beta = (Standard Deviation of Fund / Standard Deviation of Fund) X R-Square

Data Analysis

Table 1 - Comparative performance of large Cap And Mid Cap Funds

Large Cap Funds

Fund / Benchmarks	Launch Date	CAGR Returns in %				Risk Measurement	
		1 Year	3 Years	5 Years	10 Years	Standard deviation	Beta
DSP BlackRock Top 100 Equity Fund	10-Mar-03	17.19	20.86	13.46	13.76	16.97	1.08
Franklin India Bluechip Fund	01-Dec-93	14.94	22.87	14.43	13.33	14.58	0.94
HDFC Top 200 Fund	03-Sep-96	15.67	23.93	14.17	14.30	19.07	1.22
Birla Sun Life Frontline Equity Fund	30-Aug-02	18.17	25.81	18.14	15.84	15.13	0.99
Kotak 50 Regular Plan	29-Dec-98	14.14	24.26	14.70	12.42	15.53	1.00
Mean		16.02	23.55	14.98	13.93	16.26	1.05
BSE 100 India		**10.61**	**15.10**	**11.23**	**9.20**	15.53	0.98

Midcap Funds

Fund / Benchmarks	Launch Date	CAGR Returns in %				Risk Measurement	
		1 Year	3 Years	5 Years	10 Years	Standard deviation	Beta
Franklin India Prima Fund	01-Dec-93	22.94	40.67	25.19	16.17	15.83	0.89
SBI Emerging Businesses Fund	11-Oct-04	17.70	29.71	19.40	15.73	13.62	0.71
Sundaram Select Midcap Fund	30-Jul-02	21.02	42.28	22.61	17.93	19.01	1.07
IDFC Premier Equity Fund	15-Sep-05	10.54	31.34	19.13	21.83	15.79	0.84
Reliance Growth Fund	08-Oct-95	13.49	30.07	17.16	15.12	17.71	1.09
Mean Returns		17.14	34.81	20.70	17.36	16.39	0.92
Nifty Free Float Midcap 100 Index		**19.63**	**32.31**	**15.93**	13.38	18.86	1.01

Performance review of Large Cap Funds

The result of Table 1 shows that all the large cap schemes under study have generated higher returns in comparison to the benchmark BSE 100. Mean returns of funds under 1,3 5 and 10 years are far better than index returns. HDFC top 200 has slightly higher standard deviation (SD) which signifies higher volatility. Beta is quite high in HDFC top

200 which clearly states that funds performance will witness wild swing on either side compared to its benchmark. Other funds with low beta and SD are performing better. Investors must avoid funds with high Beta and SD.

Performance review of Mid Cap Funds

Performance of selected midcap funds outperformed its benchmark in 5 and 10 years period returns. Investors expect better returns in Midcaps then in Large caps due to its aggressive fund management style which is evident in last 3,5 and 10 years returns, where Mean returns not only outperformed Nifty Free Float Midcap 100 Index. Standard deviation of all funds is within permissible zone. Franklin India Prima and SBI Emerging business fund has SD on lower side compared to other funds. Low SD results in low volatility which is good for scheme. Beta is slightly high in Reliance growth fund. Majority of selected fund has beta less than benchmark.

Table 2 - Volatility Measure			
Large Cap			
Funds	**Sharpe ratio**	**Treynor ratio**	**R-Squared**
DSP BlackRock Top 100 Equity Fund	0.93	14.88	92.80
Franklin India Bluechip Fund	0.97	19.43	95.32
HDFC Top 200 Fund	0.99	15.86	93.56
Birla Sun Life Frontline Equity Fund	1.30	21.32	98.18
Kotak 50 Regular Plan	1.19	19.64	94.74
Mean	1.08	18.23	94.92
BSE 100 India	1.06	17.49	92.64
Mid Cap			
Franklin India Prima Fund	1.99	40.62	93.01
SBI Emerging Businesses Fund	1.68	35.54	80.33
Sundaram Select Midcap Fund	1.74	35.24	93.19
IDFC Premier Equity Fund	1.59	32.85	84.35
Reliance Growth Fund	1.34	23.37	87.51

	1.66	33.52	87.67
Mean	1.66	33.52	87.67
Nifty Free Float Midcap 100	1.06	36.28	85.12

Large Cap Funds

As per table number 2 risk adjusted returns are better in Birla Sunlife Frontline equity due to higher Sharpe ratio. Mean of Sharpe ratio is close Benchmark. Treynor ratio is better in Franklin India Bluechip, Birla sunlife frontline equity and kotak which means excess returns generated by these fund over and above the risk free return. R Square of all selected large cap funds are on higher side which means there is good correlation between the portfolio's returns and the benchmark's returns.

Mid Cap Funds

Sharpe and Treynor ratio are on higher side of all Midcap funds (except reliance growth)which means investors can expect better risk adjusted returns. Mean of both ratios are close to benchmark's ratio. Reading of R –Square is above 80 which suggest good correlation between benchmark and fund's portfolio. R-Square of Sundaram Select Midcap and Franklin India Prima Fund are above 90 proves almost perfect correlation which puts these funds in preferred category for investment.

Conclusion

From the preceding discussion it is evident that selected mutual funds scheme are generating higher average returns as compare to the Index, though the standard deviation is little higher in some case. Study examined 10 schemes of large cap, & Mid cap. CAGR returns calculated under 1,3,5 & 10 years tenure. The result shows that average returns generated by large cap from ranges between 16% to 22% depending upon years of investments. Birla Sunlife Frontline equity & Franklin India Bluechip fund are doing well in large cap category. Returns in midcap space is slightly higher. Average CAGR returns in this category falls between 17% to 23.5%.Frankline India Prima and Sundaram select Midacap outperformed and generated more than 40% CAGR in last 3 years. Risk adjusted returns are better in Midcaps than large caps.

Despite excellent performance still equity mutual funds are not so popular among retail investors. About 50 percent of Indian household still opting Bank FDs to park their savings, followed by investments in insurance (20 per cent), pension funds (15 percent), and the leftover (15 percent) is shared by capital market instruments like shares, debentures, mutual funds etc. Poor participation in capital markets related instruments may be due to low awareness on financial products and limited penetration of market linked products like mutual funds (NandyPratyusha,2013).

On the basis of this study it can be concluded that investors can surely expect double digit return from large and mid cap fund if they remain invested for long term. Midcap funds

set to give higher returns with obvious risk associated with it. Small investors if want to invest in mutual funds must keep a healthy ratio of large cap and mid cap funds in their portfolio. A Mix of both funds can create wealth over a period of time

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