Variation in Mutual Fund Performance: A Comparative Study of Selected Equity Schemes in India for the Period 1995-2020

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Abstract

Mutual Funds (through its professional managers) allow retail investors to generate returns in capital markets with small amounts while getting the advantage of diversification. Mutual funds perform a crucial role in promoting the nation's economic &industrial growth by channelizing savings for productive purposes. The household sector is the most crucial fund supplier for mutual funds. The Indian mutual fund industry began in 1963& has been developing over the year in parameters like the no. of asset management companies (AMCs), total amount of funds invested, the no. of schemes, &the no. of investors, etc. In India, the MF industry was opened to the private sector in 1993. Before privatization, UTI, public sector banks, & insurance companies used to run mutual funds in the country. Mutual Fund schemes have offered varying returns over the decades. While some funds have outperformed the benchmark stock market indices (Nifty, Sensex, MidCap Index, SmallCap Index, etc.), others have only delivered tepid returns & have underperformed these Indices. Similarly, the first half (of the period 1995-2020) delivered superior returns for equity mutual funds when compared to the latter half. Thus, investors must recognize the cross-sectional & longitudinal variation in the performance to be able to effectively deploy their resources & multiply wealth. This study compares the performance of different equity schemes offered by the mutual fund industry in India using concepts of risk & returns and ratios such as Sharpe, Treynor, Jenson, etc.

Keywords: Mutual Fund, Performance, Risk, Returns, Investors, Equity.

Introduction

The assets management companies (AMCs) provide the advantages of financial expertise & diversification to the retail investors. Mutual Funds act like agents to invest the investors' investment in different securities. It refers to the collective investment of individuals'& groups' funds by experts (Financial Managers) in different securities (stock, bonds, money markets & others). The investment is made keeping the objectives of every scheme in mind. Large projects require huge investment & MFs allocate the pooled funds for such investment purposes. "Do not put all your eggs in one basket" concept is at the center of the MF managers' philosophy. The investors purchase units of

MF to become shareholders of the Mutual Fund. The MF Industry aims to deliver high risk-adjusted returns by investing in diversified portfolios. The schemes are operated by financial managers & banks for generating income (dividend) & capital gain(increasing NAV) for their interest & investors' benefit. The earnings (dividends, capital gains/ losses) are distributed to the investors in proportion to their initial investment after deducting the operating costs. In open-ended mutual funds, the investor can buy & redeem units anytime at the ongoing Net Asset Value (which is announced daily). On the contrary, closed-ended funds are initially launched with a fixed number of units similar to the public companies' IPO& are then sold in the stock exchange. This study explores both traditional & modern methods to analyze the performance of selected Mutual Funds and attempts to fill the gap from the Indian perspective. Investing decisions are critical functions of financial managers of every organization, which also determines the future of the organization. In India as well, many options for investment are available. The proper selection is governed by the risk-return tradeoffs associated with the competing options. MF has become the preferred choice for long term investments for various individuals &organizations as it offers higher returns & lower risk. In order to test the validity of these statements, an in-depth empirical appraisal of MF schemes' performance needs to be performed. This analysis has been carried out using the following statistical tools:

Sharpe ratio, Treynor Ratio, Jensen ratio, Beta, Standard deviation, Average Return

Review of Related Studies

The concept of an Investment Company began in Europe during the late 1700s when Abraham van Ketwitch (Dutch Merchant) asked for contributions from small investors. The 'investment pooling' concept spread from England to the United States in the 1800s. Mutual Funds are ancient investment vehicles that collect the savings of small investors for investing in money market instruments or stocks & bonds (Shah & Hijazi, 2005).

Many factors influence or determine the performance of Mutual Funds. Past literature provides evidence of the relation between fund size & fund performance. Becker & Vaughan (2001) suggested that most managers are strongly motivated to grow the fund size (because the fund industry remuneration depends on the asset under management), which can affect the returns negatively. Other important factors include:

Mutual Fund specific factors (fund flow, fund size, fund style, expense ratio, fund age, loading& fund fee, etc.)

Fund family related factors (management function &fund family size, etc.)

Management related factors (manager skill, knowledge, experience, tenure, etc.);

Country based factors (economic & financial development, political stability, country GDP& per capita incomes, investing behavior of the country, border& geography, etc.)

Environmental factors (financial & legal condition)

Many research studies have contributed to evaluating the mutual fund performance. Sharp (1964) formulated Capital Asset Pricing Theory (CAPM), which was used by researchers like Lintner (1965), Treynor & Mossin (1966). Treynor examined the market impact on portfolio returns. Jensen (1968) studied the association of funds' performance to particular benchmarks & concluded that funds with a positive alpha generally beat the market indices. Carleson (1970) investigated returns through regression & established that the majority of funds beat the market return. The only method available before 1965 for evaluating MF performance was to compare the fund returns. Only the Close (1959) study was available during that time in which Close compared the close-ended & open-ended schemes' performance, & found that the close-ended funds performed better than open-ended ones, despite the three times higher sales of open ended funds. Brown & Vickers (1963) explained that every Fund has different criteria for measuring the performance. John McDonald described the connection between the fund goals, risks, & return. This study established that there was no proof of fund managers consistently outperforming the market on a risk-adjusted basis based on empirical analysis of 123 Funds. Jensen Michael (1968) formulated a portfolio evaluation technique using risk-adjusted returns. Analysis of net returns of 115 funds for the period 1945-66 demonstrated that 39 funds had outperformed, while 76 funds had provided poor returns. Using gross returns, 48 funds resulted in above-average returns & 67 funds showed below average results. Thus, there was little evidence that funds were able to perform significantly better than the benchmarks. James R.F. Fellow (1978) evaluated the performance of risk-balanced UK investment trusts through the utilization of bid & Jensen measures. He argued that no trust had shown better performance than the London Stock Exchange Index.

In the context of the Indian Mutual Fund Industry also various studies have been conducted. According to Nalini Prava Tripathy (1996), “the Indian capital market has been increasing tremendously during the last few years due to the reforms of the economy, industrial policy, public sector &financial sector. The economy was opened & several

developments happened in the money market& capital market."M. Vijay Anand (2000) compared the Birla Sun life equity schemes with the competitors' schemes for three years using SWOT Analysis & Delphi technique. He noted that the selected equity funds had earned higher returns than benchmarks & that Birla Sun life performed better than the benchmarks & competitors. Gupta & Agarwal's (2009) constructed the portfolios using the cluster method, took industry concentration as a variable & compared the performance of two types of portfolios with benchmarks. Results were found to be encouraging as far as risk mitigation was concerned. Prajapati & Patel(2012) evaluated various diversified equity funds in India from the period 2007-2011 &concluded that funds had given positive returns & that the best performers were HDFC & Reliance mutual funds.

Kale & Panchapagesan (2012) pointed out that the weak regulatory environment & lack of governance were the primary reasons for the poor penetration& performance of the MF industry. Annapoorna & Gupta (2013) examined the performance of MF schemes ranked one by CRISIL & compared their returns with SBI term deposit rates. They found that most of the funds failed to provide returns comparable to SBI domestic term deposit. Rajput & Singh (2014) evaluated the performance & risk-return profile of major funds & even studied the impact of stock market fluctuations (April 2012-March 2013). They considered 120 different open-ended mutual fund schemes (from the public sector, private sector, & UTI) & compared them to the benchmark BSE index. The systematic risk was found to be higher in tax saving &equity schemes, whereas it was moderate in balanced schemes& low in income schemes. Tax saving funds had given the best performance, followed by balanced &equity funds. Pala & Chandnib (2014) evaluated income & debt MF schemes for the period 2007-2012. The study also found that the best equity schemes were HDFC Mid Cap Opportunity, Birla Sun Life MNC Fund & Quantum Long-Term Equity. Dr. Shri Prakash Soni, Dr. Deepali Bankapue, Dr. Mahesh Bhutada, (2015) carried out a comparative analysis of schemes offered by Kotak mutual fund & HDFC mutual fund. The study concluded that Kotak schemes were more effective in the Large Cap Equity segment, while HDFC schemes were better in the MidCap Equity segment. Both the companies' schemes were well-managed in Debt segments. Kotak Select Focus was the best scheme in Large-cap Equity.

Objectives of the Study

This Research Paper aims to conduct a comparative & quantitative analysis of various equity MF Schemes in India for the period 1995-2020. The performance is measured using variables like Average Returns, Standard deviation, Beta, Coefficient of determination, Sharpe Ratio, Jensen Ratio, & Treynor Ratio. These parameters are compared to other schemes & also to the benchmark indices. The other important objective is to study the cross sectional & longitudinal variation of these equity schemes in order to identify trends.

Research Methodology

An Empirical Study of 34 mutual fund schemes' performance for the period 1995-2020was undertaken in which their returns were compared with respective benchmark indices. To analyze whether mutual funds underperform or outperform the market index, the following statistical techniques were used:

For Return Analysis:

Average Return

For Risk Analysis:

Standard deviation (Total Risk), Beta (Systematic Risk) & Coefficient of Determination

Performance Evaluation by Risk-Adjusted Measures:

Sharpe Ratio, Treynor Ratio, Jenson Ratio

Average Returns

The performance evaluation is done by comparing the returns of a mutual fund scheme with returns of a benchmark portfolio.

$$\text{Returns} = [(NAV_t - NAV_{t-1})/ NAV_{t-1}] * 100$$

Standard Deviation (SD)

The higher the SD, the greater will be the magnitude of the deviation of the values from their mean. Small SD means a high degree of uniformity & homogeneity of a series. The total risk can be measured using standard deviation.

$$SD = \sqrt{N(X2) - (X)2/N}$$

Beta

Beta indicates the volatility of the fund as compared to the benchmark (systematic risk). A beta higher than one means that the fund is more volatile than the benchmark, while a beta less than one means that the fund is less volatile than the index. A fund with a beta close to 1 means the fund's performance closely matches the index or benchmark.

Coefficient of Determination (R^2)

The R^2 is a measure of a security's diversification in relation to the market. The closer the R^2 is to 1.00, the more diversified the portfolio (Reilly and Brown, 2003). An R^2 of 0 means that a fund's returns have no correlation with the market,& an R^2 of 1.00 indicates that a fund's returns are

entirely in sync with the benchmark.

Sharpe Index

Sharpe Index is based on the scheme's total risk and is a summary measure of the scheme's performance adjusted for risk. Hence the Sharpe index measure reflects the excess return earned on a fund per unit of total risk (standard deviation). The risk-free rate of return for the study is considered as 7.95%

Sharpe Index = [(Fund Return – Risk free Rate) /Total Risk of Fund] i.e. $[(R_p-R_f)/\sigma_p]$

Treynor Index

As per the Treynor index, systematic risk or beta is taken as the appropriate measure of risk. Hence, the Treynor measure reflects the excess return earned by the fund per unit of systematic risk (beta).

Treynor Index =[(Fund Return – Risk free Rate)/Beta] i.e. $[(R_p-R_f) / \beta_p]$

Jenson Index

The Jensen ratio measures the manager's ability to deliver above-average risk-adjusted returns. The higher the ratio, the greater the risk-adjusted returns. A portfolio with a consistently positive excess return will have a positive alpha, while a portfolio with a negative excess return will have a negative alpha.

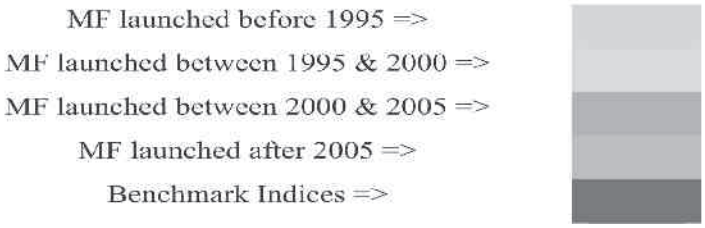
Jenson's alpha = Portfolio Return – CAPM
where CAPM= risk free rate + β*(expected market return – risk free rate)?

Higher values of Sharpe, Treynor & Jenson Indices suggest the better risk-adjusted performance of a fund, whereas low values of these Ratios reflect poor performance.

Empirical Results

The following tables (Table 1 & Table 2) summarize the findings of the study:

Table 1: Comparative Performance of Selected Equity Mutual Fund Schemes (Refer to Appendix A for detailed analysis):



Scheme Name	Returns (%)	StDev	BETA	Sharpe	Treynor	Jenson	RSQ
Canara Robeco Equity Tax Saver Fund	12.5	2.92	0.52	1.56	8.71	11.62	0.61
Tata Large & Mid Cap Fund	10.4	3.24	1.44	0.75	1.70	7.88	0.86
Franklin India Bluechip Fund	17.5	4.41	1.26	2.15	7.52	15.26	0.49
Franklin India Prima Fund	16.8	3.62	1.07	2.43	8.18	14.88	0.53
HDFC Capital Builder Value Fund	13.2	3.12	0.83	1.67	6.26	11.72	0.84
Franklin India Equity Fund	17.9	4.19	1.22	2.36	8.11	15.73	0.91
ICICI Pru Multicap Fund	14.4	2.62	0.55	2.43	11.53	13.39	0.81
HDFC Equity Fund	18.4	4.64	0.55	2.23	19.03	17.40	0.64
Nippon India Growth Fund	17.6	4.42	1.32	2.17	7.27	12.26	0.98
Nippon India Vision Fund	16.5	5.24	0.99	1.61	8.58	12.48	0.89
Aditya Birla Sun Life Tax Relief 96 Fund	16.2	2.96	0.59	2.75	13.77	13.77	0.91
TATA India Tax Savings Fund	13.2	1.03	0.37	5.09	14.29	11.76	0.72
HDFC Tax Saver Fund	18.8	5.83	0.90	1.86	12.02	15.19	0.86
TATA Ethical Fund	12.8	3.67	0.97	1.30	4.93	8.86	0.87
HDFC Top 100 Fund	17.1	4.51	1.10	2.02	8.27	12.65	0.96
DSP BR Equity Fund	15.5	3.62	1.35	2.06	5.55	10.03	0.98
Aditya Birla Sun Life Equity Fund	15.4	2.67	0.89	2.79	8.38	11.86	1.00
Franklin India Taxshield	17.1	4.14	0.57	2.20	16.05	14.80	0.83
ICICI Pru LT Equity Fund (Tax Saving)	16.3	3.59	0.68	2.32	12.13	13.54	0.89
DSP BR Equity Opportunities Fund	15.9	2.56	0.69	3.08	11.34	12.74	1.00
Sundaram Mid Cap Fund	18.7	5.24	1.08	2.04	9.89	13.82	0.91
Sundaram Diversified Equity Fund	9.3	1.00	0.82	1.30	1.59	8.58	1.00
SBI Large & Mid Cap Fund	11.9	1.43	1.17	2.74	3.34	10.87	1.00
UTI Equity Fund	12.1	2.16	1.78	1.92	2.33	10.57	1.00
UTI Mastershare Fund	10.3	1.55	1.28	1.51	1.84	9.22	1.00
SBI Magnum Equity ESG Fund	11.3	1.23	0.77	2.71	4.32	10.65	1.00
SBI Magnum Tax Gain Fund	9.6	2.44	2.02	0.65	0.78	7.79	1.00
DSP BR Small Cap Fund	16.6	5.93	5.01	1.46	1.72	12.21	1.00
HDFC Mid-Cap Opportunities Fund	15.8	5.23	4.40	1.50	1.78	11.95	1.00
Aditya Birla Sun Life Pure Value Fund	12.3	5.77	4.88	0.75	0.89	8.02	1.00
Principal Emerging Bluechip Fund	14.6	2.83	2.34	2.33	2.81	12.51	1.00
SBI Small Cap Fund	17.5	3.14	2.60	3.03	3.66	15.22	1.00
Mirae Asset Emerging Bluechip Fund	19.2	2.34	1.93	4.78	5.79	17.47	1.00
Nippon India Small Cap Fund	14.6	3.38	2.81	1.94	2.34	12.09	1.00

Table 2: Overall Comparative Performance of Funds running since 1995 (1995-2020) (Refer to Appendix B for detailed analysis):

Fund Name/ Index	Overall CAGR (1995-2020)	Overall Wealth Multiplication (1995-2020)	Overall Standard Deviation (1995-2020)	First Half CAGR (1995-2007)	First Half Wealth Multiplication (1995-2007)	First Half Standard Deviation (1995-2007)	Second Half CAGR (2008-2020)	Second Half Wealth Multiplication (2008-2020)	Second Half Standard Deviation (2008-2020)
NIFTY50	11.4%	13.4 Times	31.0	17.3%	6.7 Times	31.0	5.9%	2 Times	31.2
Canara Robeco Equity Tax Saver Fund	15.1%	29 Times	42.1	20.3%	9.2 Times	49.5	10.0%	3.1 Times	33.2
Tata Large & Mid Cap Fund	13.2%	19.7 Times	47.3	20.5%	9.3 Times	55.1	6.4%	2 Times	38.6
Franklin India Bluechip Fund	19.5%	72.5 Times	46.4	32.1%	28 Times	54.7	8.2%	2.6 Times	29.6
Franklin India Prima Fund	19.4%	71 Times	59.8	29.2%	21.5 Times	71.2	8.2%	2.6 Times	40.5
HDFC Capital Builder Value Fund	16.4%	38.4 Times	39.7	24.6%	14 Times	40.9	8.8%	2.8 Times	38.1
Franklin India Equity Fund	20.0%	79 Times	46.7	31.7%	27.2 Times	54.7	9.3%	2.9 Times	32.0
ICICI Pru Multicap Fund	16.1%	35.8 Times	42.9	24.6%	14 Times	49.0	8.2%	2.6 Times	32.8
HDFC Equity Fund	20.9%	94.5 Times	47.5	32.6%	29.5 Times	52.2	10.2%	3.2 Times	37.5

Comparative Performance of Funds over 25 years (1995-2020) can be summarized as follows:

HDFC Equity >Franklin India Equity >Franklin India Bluechip>Franklin India Prima >HDFC Capital Builder Value >ICICI Pru Multicap >Canara Robeco Equity Tax Saver >Tata Large & Mid Cap > NIFTY50

For the overall period of 25 years (1995-2020), Nifty Index multiplied by 13.4 times (CAGR 11.4%) while these mutual fund schemes multiplied anywhere between 19.7 times (minimum returns - TATA Large & Mid Cap Fund: CAGR 13.2%) and 94.5 times (maximum returns – HDFC Equity Fund: CAGR 20.9%). The first half of the period (1995-2007) was much better for the markets and delivered superior returns compared to the second phase. Nifty Index multiplied more than 6.5 times (CAGR 17.3%) while these mutual fund schemes multiplied anywhere between 9.2 times (minimum returns –Canara Robeco Equity Tax Saver Fund: CAGR 20.3%) and 29.5 times (maximum returns – HDFC Equity Fund: CAGR 32.6%).However, in the second half (2008-2020), Nifty Index only managed to double (CAGR 5.9%), and the mutual funds were also only able to multiply wealth between 2 times (minimum returns – TATA Large & Mid Cap Fund: CAGR 6.4%) to 3.2 times (maximum returns – HDFC Equity Fund: CAGR 10.2%).The standard deviation (risk) of these funds is higher than Nifty, and the standard deviation (risk) is greater in the Second Half when compared to the First Half for the time frame under consideration. These schemes display high correlation with each other and also with Nifty (Refer to Appendix C).

Conclusion

Mutual Funds channelize the savings of small investor who find hard to invest at their cost and manage these investments in profitable avenues. This research paper analyzed the selected open-ended equity funds in India by applying models &ratios. The results demonstrate that most investors prefer funds with better performance track records. The study has utility for the mangers of AMCs& for the investors.

The present paper investigates the performance of 34 open-ended, diversified equity schemes for the 25 years from 1995 to 2020. Annual NAVs of different schemes have been used to calculate the returns for the fund schemes. The study compared the funds' performance with benchmark portfolios. In addition to the cross-sectional variation, the longitudinal performance was also evaluated. Mutual funds delivered better returns during the period from 1995 to 2007 as compared to the period from 2008 to 2020. This provides ideas about mutual fund performance & assists the investors in making rational investment decisions for allocating resources to correct schemes.

The performance has been evaluated in terms of return & risk analysis & risk-adjusted performance measures such as Sharpe ratio, Treynor ratio& Jenson's Alpha. In a nut shell, 94% of the diversified equity fund schemes have shown superior average returns compared to the benchmark indices. In terms of standard deviation, 90% of the schemes are less risky than the market. 44% funds have a beta less than one & positive, which indicates they were less risky than the market,& in terms of coefficient of determination (R2), 85% funds were greater than 0.8, which implies high diversification of the portfolio. The risk-adjusted performance was evaluated using Sharpe, Treynor, & Jensen's tools. In the study, the Sharpe ratio & Treynor ratio were greater than 1& Jenson's alpha was positive for most schemes, which showed that the funds were providing higher returns.

The CAGR offered by these mutual funds during the first half of this 25 year period was found to be much greater than the latter half. This reflects a shift in the profile of Indian stock markets post 2008 and could possibly indicate the maturity of the markets with less price discrepancies available to the mutual fund managers. Thus, the investors should revise their expectations with respect to the performance of their mutual fund portfolios.

CRISIL & AMFI Equity Fund Performance Index was growing faster than S&P BSE SENSEX (TRI), NIFTY 50 (TRI), NIFTY 500 (TRI).

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APPENDIX A: Comparative Analysis – Mutual Funds Performance & Benchmark Indices

Scheme Name/ Benchmark Index	Launch Date	MF NAVs / Index Levels						CAGR (%) Recent Returns				
		1-Jan-2020	1-Jan-2015	1-Jan-2010	1-Jan-2005	1-Jan-2000	1-Jan-1995	5 years	10 years	15 years	20 years	25 years
Benchmark Indices												
Nifty50		12182.0	8284.0	5201.0	2080.0	1254.0	1182.0	8.0	8.9	12.5	12.0	9.8
Sensex		41306.0	27887.9	17540.3	6567.9	4939.5	3943.7	8.2	8.9	13.0	11.2	9.9
S&P BSE 100 Tri		14659.1	9513.9	5574.9	2100.7	1539.8	1093.5	9.0	10.2	13.8	11.9	10.9
S&P BSE 500 Tri		18817.5	11970.8	7089.2	2762.6	1791.4		9.5	10.3	13.6	12.5	
S&P BSE Large Mid Cap Tri		5907.3	3783.7	2186.5				9.3	10.4			
S&P BSE MidCap		14998.6	10530.2	6717.8	2930.4			7.3	8.4	11.5		
S&P BSE 150 MidCap Tri		5568.4	3424.5	1833.9				10.2	11.7			
S&P BSE SmallCap		13786.7	11308.2	8357.6	3346.0			4.0	5.1	9.9		
S&P BSE 250 SmallCap Tri		2361.2	1992.4	1507.0				3.5	4.6			
Mutual Funds												
Canara Robeco Equity Tax Saver	31-Mar-93	368.9	243.9	117.2	35.8	38.6	19.2	8.6	12.2	16.8	11.9	12.5
Tata Large & Mid Cap	31-Mar-93	221.2	143.1	78.1	27.9	9.9	18.5	9.1	11.0	14.8	16.8	10.4
Franklin India Bluechip	1-Dec-93	1136.2	817.0	440.1	149.2	60.2	20.1	6.8	9.9	14.5	15.8	17.5
Franklin India Prima	1-Dec-93	973.5	641.4	243.9	107.4	35.6	20.1	8.7	14.8	15.8	18.0	16.8
HDFC Capital Builder Value	1-Feb-94	286.6	194.3	92.7	35.2	14.5	12.9	8.1	11.9	15.0	16.1	13.2
Franklin India Equity	29-Sep-94	591.9	414.7	192.8	62.8	32.9	9.7	7.4	11.9	16.1	15.5	17.9
ICICI Pru Multicap	1-Oct-94	301.6	193.2	102.4	37.0	17.4	10.5	9.3	11.4	15.0	15.3	14.4
HDFC Equity	1-Jan-95	678.5	460.9	229.4	64.9	23.6	10.0	8.0	11.5	16.9	18.3	18.4
Nippon India Growth	8-Oct-95	1145.5	744.5	431.4	110.8	44.9		9.0	10.3	16.9	17.6	
Nippon India Vision	8-Oct-95	544.4	429.7	251.1	81.4	25.9		4.8	8.0	13.5	16.5	
Aditya Birla Sun Life Tax Relief 96	29-Mar-96	1547.3	974.0	530.1	200.0	77.3		9.7	11.3	14.6	16.2	
TATA India Tax Savings	31-Mar-96	599.7	339.6	175.7	78.2	49.8		12.0	13.1	14.5	13.2	
HDFC Tax Saver	31-Mar-96	1706.7	1305.3	646.9	201.7	54.2		5.5	10.2	15.3	18.8	
TATA Ethical	24-May-96	305.6	227.7	113.3	39.8	27.7		6.1	10.4	14.6	12.8	
HDFC Top 100	11-Oct-96	605.7	419.2	221.1	64.3	25.8		7.6	10.6	16.1	17.1	
DSP BR Equity	29-Apr-97	549.1	348.3	190.3	50.2	30.9		9.5	11.2	17.3	15.5	
Aditya Birla Sun Life Equity	27-Aug-98	762.5	459.9	250.4	82.0	43.1		10.6	11.8	16.0	15.4	
Franklin India Taxshield	10-Apr-99	577.4	398.9	177.0	66.4	24.6		7.7	12.5	15.5	17.1	

ICICI Pru LT Equity (Tax Saving)	19-Aug-99	393.0	260.9	121.7	43.6	19.2		8.5	12.4	15.8	16.3
DSP BR Equity Opportunities	16-May-00	234.7	139.4	74.8	25.8			11.0	12.1	15.9	
Sundaram Mid Cap	30-Jul-02	462.5	311.7	134.6	35.4			8.2	13.1	18.7	
Sundaram Diversified Equity	2-May-05	102.7	70.3	42.2				7.9	9.3		
SBI Large & Mid Cap	26-May-05	228.9	142.9	74.3				9.9	11.9		
UTI Equity	1-Aug-05	152.3	98.6	48.4				9.1	12.1		
UTI Mastershare	1-Aug-05	128.9	87.1	48.2				8.1	10.3		
SBI Magnum Equity ESG	27-Nov-06	113.5	71.8	38.8				9.6	11.3		
SBI Magnum Tax Gain	7-May-07	143.4	106.6	57.5				6.1	9.6		
DSP BR Small Cap	14-Jun-07	53.9	36.2	11.6				8.3	16.6		
HDFC Mid-Cap Opportunities	25-Jun-07	53.6	35.8	12.3				8.4	15.8		
Aditya Birla Sun Life Pure Value	27-Mar-08	46.5	38.0	14.6				4.2	12.3		
Principal Emerging Bluechip	12-Nov-08	107.9	65.3	27.7				10.6	14.6		
SBI Small Cap	9-Sep-09	53.5	29.0	10.7				13.1	17.5		
Mirae Asset Emerging Bluechip	9-Jul-10	57.8	27.7	10.0				15.9	19.2		
Nippon India Small Cap	16-Sep-10	39.0	24.4	10.0				9.8	14.6		

MF launched before 1995 =>
MF launched between 1995 & 2000 =>
MF launched between 2000 & 2005 =>
MF launched after 2005 =>
Benchmark Indices =>

Most of the mutual funds have outperformed the benchmark indices.
In the 25 years, only 1 out of 8 mutual funds (Tata Large & Mid Cap) delivered lower returns than the benchmark indices.
Since their inception, only 4 out of 34 mutual funds (Tata Large & Mid Cap, Sundaram Diversified Equity, UTI Mastershare, SBI Magnum Tax Gain) delivered less returns than the benchmark indices.
In the previous 20 year period, only 1 out of 19 mutual funds (Canara Robeco Equity Tax Saver) underperformed the benchmark indices.
In the previous 15 year period, only 1 out of 21 mutual funds (Nippon India Vision) underperformed the benchmark indices.
In the previous 10 year period, only 8 out of 34 mutual funds (Franklin India Bluechip, Nippon India Growth, Nippon India Visio n, HDFC Tax Saver, TATA Ethical, Sundaram Diversified Equity, UTI Mastershare, SBI Magnum Tax Gain) underperformed the benchmark indices.
However, in the previous 5 year period, 20 out of these 34 mutual funds underperformed the benchmark indices
It is also clear that the period from 1995 -2010 was much better for the mutual funds & the overall markets as compared to the 2010-2020 period

APPENDIX B: Performance of Mutual Fund Schemesrunning for more than 25 Years (Initiated before 1995)

	MF NAVs/ Index Levels									Yearly CAGR								
End of Year (31 Dec)	NIFTY50	Canara Robeco Equity Tax Saver Fund	Tata Large & Mid Cap Fund	Franklin India Bluechip Fund	Franklin India Prima Fund	HDFC Capital Builder Value Fund	Franklin India Equity Fund	ICICI Pru Multi Cap Fund	HDFC Equity Fund	NIFTY CAGR	AR Canara Robeco Equity Tax Saver Fund	AR Tata Large & Mid Cap Fund	AR Franklin India Bluechip Fund	AR Franklin India Prima Fund	AR HDFC Capital Builder Value Fund	AR Franklin India Equity Fund	AR ICICI Pru Multi Cap Fund	AR HDFC Equity Fund
1995	909	12.66	11.1	15.5	13.53	7.44	7.48	8.36	7.12									
1996	899	11.92	6.04	12.01	11.23	6.01	6.3	6.74	5.45	-1.1	-5.8	-45.6	-22.5	-17.0	-19.2	-15.8	-19.4	-23.5
1997	1079	13.95	5.79	16.67	8.96	6.59	6.94	7.01	6.58	20.0	17.0	-4.1	38.8	-20.2	9.7	10.2	4.0	20.7
1998	884	15.27	5.73	22.56	12.41	8.74	9.92	7.44	9.18	-18.1	9.5	-1.0	35.3	38.5	32.6	42.9	6.1	39.5
1999	1480	38.64	9.88	60.22	35.63	14.5	27.77	17.39	23.6	67.4	153.0	72.4	166.9	187.1	65.9	179.9	133.7	157.1
2000	1264	28.45	9.77	55.68	19.36	11.93	19.84	12.82	19.05	-14.6	-26.4	-1.1	-7.5	-45.7	-17.7	-28.6	-26.3	-19.3
2001	1059	18.02	6.86	43.7	19.95	9.05	19.83	10.4	17.69	-16.2	-36.7	-29.8	-21.5	3.0	-24.1	-0.1	-18.9	-7.1
2002	1094	17.84	8.13	54.84	28.35	10.78	23.31	13.4	22.35	3.3	-1.0	18.5	25.5	42.1	19.1	17.5	28.8	26.3
2003	1880	31.03	21.84	127.75	82.22	23.85	49.18	29.37	51.2	71.8	73.9	168.6	133.0	190.0	121.2	111.0	119.2	129.1
2004	2081	35.78	27.85	142.42	107.39	35.2	62.78	36.98	64.88	10.7	15.3	27.5	11.5	30.6	47.6	27.7	25.9	26.7
2005	2837	53.6	42.1	220.13	179.72	52.65	88.99	53.65	107.01	36.3	49.8	51.2	54.6	67.4	49.6	41.7	45.1	64.9
2006	3966	70.47	58.08	312.87	214.36	61.79	137.53	81.67	148.07	39.8	31.5	38.0	42.1	19.3	17.4	54.5	52.2	38.4
2007	6139	116.88	103.7	435.95	291.65	103.96	203.72	116.7	210.04	54.8	65.9	78.5	39.3	36.1	68.2	48.1	42.9	41.9
2008	2959	63.27	40.87	241.6	118.44	47.36	106.81	54.99	110.83	-51.8	-45.9	-60.6	-44.6	-59.4	-54.4	-47.6	-52.9	-47.2
2009	5201	117.19	78.11	440.1	243.9	92.72	192.84	99.53	229.43	75.8	85.2	91.1	82.2	105.9	95.8	80.5	81.0	107.0
2010	6135	146.41	85.78	544.9	293.63	116.65	226.61	122.0	294.96	18.0	24.9	9.8	23.8	20.4	25.8	17.5	22.6	28.6
2011	4624	122.47	66.02	454.89	230.92	91.82	192.57	90.5	218.74	-24.6	-16.4	-23.0	-16.5	-21.4	-21.3	-15.0	-25.9	-25.8
2012	5905	160.58	88.78	571.52	335.1	116.22	247.67	121.4	299.6	27.7	31.1	34.5	25.6	45.1	26.6	28.6	34.1	37.0
2013	6304	167.62	96.04	588.44	354.72	128.55	266.67	127.7	301.71	6.8	4.4	8.2	3.0	5.9	10.6	7.7	5.2	0.7
2014	8283	243.93	143.1	806.1	616.27	199.1	423.92	193.2	460.91	31.4	45.5	49.0	37.0	73.7	54.9	59.0	51.2	52.8
2015	7946	246.56	153.1	822.21	673.15	202.76	433.73	197.9	444.06	-4.1	1.1	7.0	2.0	9.2	1.8	2.3	2.4	-3.7
2016	8186	244.86	154.2	857.45	716.04	209.14	457.6	217.0	471.52	3.0	-0.7	0.7	4.3	6.4	3.1	5.5	9.7	6.2
2017	10531	321.07	202.2	1106.39	1023.41	301.62	594.43	282.2	652.68	28.6	31.1	31.1	29.0	42.9	44.2	29.9	30.0	38.4
2018	10863	330.72	192.0	1051.49	916.31	287.19	571.1	281.7	626.74	3.2	3.0	-5.0	-5.0	-10.5	-4.8	-3.9	-0.2	-4.0
2019	12168	367.51	219.3	1124.56	960.04	286.14	590.73	299.3	672.61	12.0	11.1	14.2	6.9	4.8	-0.4	3.4	6.3	7.3

APPENDIX C: CORRELATION MATRIX

. correlate (NIFTY50 CanaraRobecoEquityTaxSaverFuTataLargeMidCapFundFranklinIndiaBluechipFundFranklinIndiaPrimaFundHDFCCapitalBuilderValueFundFranklinIndiaEquityFundICICIPruMulticapFundHDFCEquityFund)
(obs=25)

	NIFTY50	Canara~u	TataLa~d	Fr~pFund	Fr~aFund	HDFCCa~d	Fr~yFund	ICICIP~d	HDFCEq~d
NIFTY50	1.0000								
CanaraRobe~u	0.9888	1.0000							
TataLargeM~d	0.9940	0.9903	1.0000						
Frankl~pFund	0.9932	0.9931	0.9921	1.0000					
Frankl~aFund	0.9709	0.9856	0.9868	0.9807	1.0000				
HDFCCapita~d	0.9852	0.9939	0.9928	0.9922	0.9953	1.0000			
Frankl~yFund	0.9859	0.9954	0.9935	0.9947	0.9937	0.9982	1.0000		
ICICIPruMu~d	0.9922	0.9942	0.9969	0.9940	0.9922	0.9972	0.9972	1.0000	
HDFCEquity~d	0.9907	0.9970	0.9922	0.9969	0.9889	0.9971	0.9973	0.9969	1.0000

. correlate (NIFTYReturnsARCanaraRobecoEquityTaxSaverARTataLa rgeMidCapFundARFranklinIndiaBluechipFundARFranklinIndiaPrimaFundARHDFCCapitalBuilderValueFunARFranklinIndiaEquityFundARICICIPruMulticapFundARHDFCEquityFund)
(obs=24)

	NIFTYR~s	ARCana~r	ARTata~d	A~ipFund	AR~aFund	ARHDFC~n	ARFran..	ARICIC~d	ARHDFC~d
NIFTYReturns	1.0000								
ARCanaraRo~r	0.9069	1.0000							
ARTataLarg~d	0.8933	0.8010	1.0000						
ARFran~pFund	0.8519	0.9319	0.8459	1.0000					
ARFran~aFund	0.8167	0.8783	0.8688	0.9354	1.0000				
ARHDFCCapi~n	0.8905	0.8375	0.9449	0.8453	0.8801	1.0000			
ARFran~yFund	0.8361	0.9444	0.8036	0.9638	0.9456	0.8297	1.0000		
ARICICIPru~d	0.9193	0.9381	0.9034	0.9578	0.9566	0.8985	0.9618	1.0000	
ARHDFCEqui~d	0.8824	0.9387	0.8708	0.9785	0.9633	0.9005	0.9696	0.9746	1.0000

The mutual funds & nifty were found to be highly positively correlated.