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# HOLDING PERIOD FOR POSITIVE RETURN FROM INDIAN MUTUAL FUNDS

## Abstract

In India, households predominantly prefer to invest their surplus in financial securities, which provide stable return irrespective of whether they beat inflation or help in creating wealth. However, financial planners advise their clients to invest their surplus for long term in risky assets such as mutual funds to generate inflation beating returns. But when households ask for the meaning of long term in a definite number, it varies among the financial advisors. Hence, the study made an attempt to answer this question by calculating the minimum time duration required to generate a minimum positive return for two indices (NIFTY 50, S&P BSE SENSEX) and 6 mutual fund schemes for a period of 23 years and the same two indices (NIFTY 50, S&P BSE SENSEX) and 20 mutual fund schemes for a period of 12 years and found out that the time horizon or the long term to ensure minimum positive return ranges from 5 years to 9 years depending up on the type of fund or the level of risk associated with the mutual fund schemes.

## Keywords

market indices, mutual fund performance, long term,  
risk and return

## JEL Classification

G0, G1, G11

## INTRODUCTION

In India, the households' surplus are predominantly parked towards fixed income generating investment options such as banks fixed deposits, post office saving schemes, life insurance policies and provident funds. Their investments in assets whose returns fluctuate such as stocks and mutual funds are very meagre. On the one hand, the share of households in fixed income schemes is growing over the years when compared to risky assets, which is displayed in Table 1.

On the other hand, if we look into the returns from the stock market represented by the indices S&P BSE SENSEX and NIFTY 50 and select mutual funds, they range between -36% and 81%. Thus, if they have invested in risky assets in the stock market through the market indices or in mutual fund schemes, they could have generated better returns over the years. The returns of the stock market indices for the different periods are also shown along with the risk (the standard deviation of the returns) in Table 2.

However, in reality, the behavior of the investors in their investment decision predominantly hovers around safety than wealth creation. Thus, if one could identify the minimum number of years, one has to lock their money in mutual fund schemes to ensure that their money is safe and at the same time it could create wealth, which is better than what they get from fixed income securities, that will enable them to allocate a part of their savings into such risky assets. Hence, the present study made an attempt to analyze the returns of the market indices and few mutual fund schemes to identify the holding period (long term) for positive return and the zero probability for negative return to enable the investors to confidently park their surplus in risky asset such as mutual funds.

**Table 1.** Changes in financial assets of the household (in %)

Source: Handbook of statistics on the Indian economy.

Year	Currency	Bank deposits	Non-banking deposits	Life insurance fund	Provident and pension fund	Claims on government	Shares & debentures	Units of UTI	Trade debt (net)
1992–1993	8.17	36.73	7.51	8.85	18.44	4.83	10.22	6.98	-1.74
1993–1994	12.19	33.06	10.63	8.71	16.72	6.30	9.18	4.29	-1.09
1994–1995	10.94	38.37	7.94	7.81	14.72	9.06	9.26	2.69	-0.79
1995–1996	13.29	32.12	10.61	11.17	17.97	7.71	7.11	0.21	-0.20
1996–1997	8.61	32.11	16.39	10.17	19.17	7.43	4.18	2.38	-0.45
1997–1998	7.44	43.15	3.92	11.30	18.79	12.90	2.60	0.35	-0.45
1998–1999	10.54	38.35	3.70	11.31	22.41	13.63	2.46	0.91	-3.32
1999–2000	8.82	35.09	1.63	12.13	22.82	12.27	6.90	0.77	-0.43
2000–2001	6.32	38.27	1.21	13.68	20.55	15.76	4.50	-0.38	0.07
2001–2002	9.84	39.52	-0.12	14.42	15.46	18.16	3.44	-0.65	-0.06
2002–2003	8.85	37.94	3.86	16.08	14.21	17.34	2.20	-0.50	0.00
2003–2004	10.96	40.04	0.50	13.41	12.57	22.43	2.33	-2.20	-0.04
2004–2005	8.27	39.15	0.02	15.20	12.48	23.80	1.81	-0.70	-0.02
2005–2006	8.93	45.48	0.09	14.29	10.60	14.92	5.80	-0.08	-0.04
2006–2007	8.79	56.14	0.60	15.02	9.48	2.51	6.65	-0.04	0.85
2007–2008	10.52	50.36	0.17	21.99	9.26	-3.67	9.62	-0.04	1.78
2008–2009	12.68	57.48	2.03	21.03	10.10	-3.79	-0.32	-0.38	1.17
2009–2010	9.79	40.22	1.87	26.25	13.12	4.39	4.53	0.00	-0.18
2010–2011	12.70	50.77	0.47	19.46	13.07	2.74	0.16	0.00	0.63
2011–2012	11.39	56.39	1.07	20.98	10.26	-2.35	1.77	0.00	0.48
2012–2013	10.48	54.05	2.62	16.91	14.71	-0.67	1.60	0.00	0.30
2013–2014	8.30	54.04	1.81	15.34	15.86	0.70	3.54	0.00	0.40
2014–2015	10.54	46.63	2.61	19.51	16.11	0.08	4.19	0.00	0.33
2015–2016	13.46	41.34	2.71	18.29	14.17	3.59	6.16	0.00	0.27
2016–2017	-17.40	60.19	1.88	24.21	16.26	4.60	10.03	0.00	0.24

**Table 2.** Risks and return of market indices

Source: BSE &amp; NSE.

Year	S&P BSE SENSEX Return (%)	SENSEX Standard dev. (%)	NIFTY 50 Return (%)	Nifty Standard dev. (%)
1994–1995	-13.750	360.129	-16.246	110.524
1995–1996	1.506	181.651	-1.996	56.984
1996–1997	-1.431	298.990	-2.663	93.958
1997–1998	13.590	301.128	15.126	78.236
1998–1999	-5.784	388.957	-6.264	109.361
1999–2000	35.672	615.328	45.705	202.315
2000–2001	-28.667	375.242	-25.186	100.908
2001–2002	-2.717	241.900	-0.751	73.818
2002–2003	-12.898	155.784	-14.113	53.724
2003–2004	81.457	1033.109	77.806	333.248
2004–2005	13.098	641.954	11.870	204.111
2005–2006	70.778	1383.865	64.561	392.071
2006–2007	13.037	1359.631	10.026	371.132
2007–2008	25.603	2268.577	36.008	709.368
2008–2009	-37.872	2990.838	-36.260	865.774
2009–2010	77.012	1851.526	71.519	527.719
2010–2011	9.905	1176.098	10.268	357.241
2011–2012	-10.381	1080.502	-9.105	328.012
2012–2013	7.767	1158.330	6.857	351.617
2013–2014	18.667	982.130	17.526	285.812
2014–2015	24.552	1929.291	26.334	609.408
2015–2016	-10.326	1449.672	-9.9117	428.236
2016–2017	17.217	1186.072	18.938	389.952

## 1. LITERATURE REVIEW

The review of literature comprises studies about the impact of regulatory changes, investors' perception about mutual fund investment, performance evaluation of mutual fund managers and their ability to create positive alpha. It also includes the few studies related to the time horizon for positive return to the investors.

Yadav's (2015) study highlighted how mutual fund industry was the result of liberalization of the economic policies in India. It also focused on the challenges, issues faced by it since inception and the growth prospects of mutual fund industry in India. In Indian market, Anagol, Marisetty, Sane, and Venugopal (2017) studied the regulation of banning the distributor fees paid as commission to the mutual fund distributors, an important investor protection reform and could not find any evidence to prove that the reform reduced the fund flow to the mutual funds. They argued that the most plausible explanation could be the use of other modes to compensate the loss of distribution fees to the mutual fund distributors.

Mohanasundari and Vidhyapriya (2015) made an attempt to understand the investors' perception about equity linked savings schemes of mutual funds. They also analyzed the performance of the equity linked savings schemes using Sharpe, Treynor and Jensen's Alpha.

Adhikary, Bora, and Kumar (2015) reviewed the literature regarding the investors' perception of mutual fund performance and found that the mutual funds have failed to fulfil the schemes objectives and the expectations of the investors in terms of diversification. They also highlighted the importance of financial literacy program for sustainable growth of mutual fund penetration.

Saji and Nair (2017) conducted an investors' perception study about the strategies to be adopted by the Indian mutual fund firms and suggested to offer mutual fund products with fewer risks and professional investor service centres to impart dynamism in Indian mutual fund schemes.

Trivedi, Swain, and Dash (2017) collected data among the investors and non-investors of mutual

fund into the factors influencing their perception to invest in mutual fund schemes and found that low risk funds and liquidity are having impact on their mutual fund investment decision.

Jensen (1967) analyzed performance of 115 mutual funds and found that these mutual funds on average were not able to predict the security returns well enough to outperform a buy-and-hold policy. He also found that there is very little evidence that any individual fund was able to do significantly better than that which we expected from mere random chance.

Turan et al. (2001) analyzed the performance of 54 listed schemes of mutual funds on the basis of weekly NAVs. By applying the risk adjusted performance measures, the study revealed that a considerably low level of risk is associated with the selected schemes, irrespective of the sector concerned.

Using Fama's methodology, Anand and Murugaiah (2006) examined the performance of 113 selected schemes of 25 fund houses for the period from April 1999 to March 2003 and found that the mutual funds were not able to compensate the investors for the additional risk that they have taken by investing in the mutual funds.

Cremers and Petajisto (2009) found that on average actively managed fund has underperformed its benchmark index. However, they also found that the performance of the fund depends on the degree and the type of active management. In their conclusion, they suggest to pay attention to measure of active management-active stock picking to the mutual fund investors.

Using US data from 1984 to 2006, Fama and French (2010) analyzed the performance of mutual fund schemes and found that few managers had enough skill to produce benchmark adjusted expected return including the costs. However, their performance tracks were hidden by the aggregate performance of fund managers with insufficient skill.

Dhar and Mandal (2014) examined the market timing ability of Indian fund managers using a sample of 80 mutual fund schemes for the period from May 2000 to March 2012 and found that they could not time the market.

Narasimhan and Manas Shah (2015) compared the performance of 772 mutual fund schemes (fund managers) under active and passive decision making from January 2004 to December 2013 and found that active fund allocation decision could not perform better than passive fund managers. They also found that the active fund allocation could not perform better even when the schemes are grouped under different fund houses, different fund categories.

He et al. (2015) studied the performance of Chinese mutual funds and found that only 7.5% of the funds generated significant positive alpha and less than 5% of the funds showed market timing ability or stock selection skill. They also found that older funds had higher Sharpe ratios and a positive correlation between average fund flow and fund performance (volatility of fund flow shows inverted U-shape with performance).

Kavita Arora (2015) evaluated the performance of 100 Mutual fund schemes using Treynor and Sharpe ratios and found that the performances of the schemes were mixed. 52 percent of schemes had better Sharpe ratio than their benchmarks, while 70 percent of the schemes had better Treynor ratio than their benchmarks.

Mishra and Ahuja (2016) evaluated the performance of mutual funds using risk-adjusted measures during a bear and bull period and found that funds performed poorly during the down period and during the overall period of the study. They also tested the selectivity and timing skills of the fund managers and found that majority of the fund managers show selectivity skills during up and overall period. Velavan, Sivasbramanian, Mohamed Jasim, and Vijay Anand (2017) evaluated the risk-adjusted performance of the diversified mutual funds with the Indian stock market proxied by S&P CNX NIFTY using 8 years monthly NAV and the monthly closing value and found a positive correlation between the fund's return and the market return.

Sehgal and Babbar (2017) evaluated the alternative asset pricing model for mutual fund performance in the Indian context to find out the optimal benchmark for mutual fund performance evaluation and found that conditional version of Carhart (1997) model is found to be the appropriate performance benchmark.

Chakraborty, Kumar, and Lobo (2018) evaluated the performance of open ended equity diversified mutual funds in India using 10 years data and found the existence of significant relationship between the fund's return and the risk. The study also found the macroeconomic variables such as inflation, interest rates, market, funds flow from foreign countries are significantly related with the fund's return.

Using Treynor and Mazuy model, Kumar and Katyal (2017) evaluated the market timing abilities of top 15 Indian equity diversified funds and found that major part of the mutual fund managers are not timing the market for the benefit of the investors. Kaur and Bajwa (2017) analyzed the performance of mutual funds on the basis of fund size to see whether size has any impact on the performance of mutual funds. Analysis of variance among the funds showed difference in the returns generated by large, mid and small cap funds. However, they conclude that there is no conclusive evidence to propose that fund size has any impact on the styled equity mutual fund performance in India.

Treynor (1976) in his article defines long-term investing as business ideas that require reflection, judgement, special expertise etc. for their evaluation.

Bernstein (1993) in his article says that long term is in the eyes of the beholder, argued that time is a critical variable in the investment process that the differences between short-term and long-term investing are more profound. He argued that volatility is a concern to all, but matters in the long run than in the short run. He argued that even though in the long term the odds of losing money are reduced, the final liquidating value has larger spread than short term. Liquidity is a concern for short-term investors and not for the long-term investors. He also showed the role of price in determining the total return diminishes steadily as we move from short term to long term and investors' needs to reinvest the earnings to bail them out of volatility of equity investment, otherwise equity investing is risky business, even in the long run.

Finance Week (2004) opined that long-term strategic allocation to a variety of assets (equities, bonds,

property and cash) is the optimal way for the investors to withstand good and bad times. Such a well-managed flexible fund has a better chance of withstanding market downturns while growing consistently in the long term.

Estrada (2007) in his article “Investing for the Long Term: Techniques and perspectives for the European market” discussed the return decomposition model to forecast the long-term return for any stock. He used the model to forecast the stock price after 10 years, and opined that short-term forecasting is difficult, but long-term can be predicted with some confidence. He also showed that despite short-term fluctuations, investors will prosper in the long term. However, he has not specifically defined the meaning of long term in his work.

The Ernst Young Survey (2015) calculated the rolling returns for 1 year, 5 years, 10 years using 25 years data of 30 Omani blue-chip stocks for 25 years, and found that as the investment horizon increases, the probability of loss disproportionately decreases while marginally reducing the portfolio performance.

## 2. DATA SOURCES

S&P BSE SENSEX was launched on January 1, 1986 and NIFTY 50 is available from January 2, 1995. Hence, the study took January 2, 1995 as the starting point for the study. When the study looked into the MF schemes available from January 2, 1995, 8 funds were available from the aforesaid period in India. They are 3 funds from Franklin Templeton Asset Management Company (Franklin India Bluechip Fund, Franklin India Prima Fund, and Franklin India Prima Plus Fund), and 1 fund each from SBI Asset Management Company (SBI Equity Hybrid Fund), Aditya Birla Sun life Asset management Company (Aditya Birla Sun Life Equity Hybrid Fund), HDFC Asset Management Company (HDFC Capital Builder Value Fund), Tata Asset Management Company (Tata Equity Opportunities Fund) and UTI Asset Management Company (UTI Retirement Benefit Pension Fund). However, the data for the entire study period were able to retrieve from the AMC’s websites of Franklin Templeton Asset Management

Company for Franklin India Bluechip Fund, Franklin India Prima Fund, and Franklin India Prima Plus Fund, SBI Equity Hybrid Fund from SBI Asset Management Company, Aditya Birla Sun Life Equity Hybrid Fund (ABSLEHF) from Aditya Birla Sun life Asset management Company, HDFC Capital Builder Value Fund from HDFC Asset Management Company. For other funds, the data for the entire time period are not available. Hence, only the abovementioned 6 funds along with the two indices S&P BSE SENSEX and NIFTY 50 were considered for the study for the period from January 2, 1995 to May 31, 2018.

The study also made an attempt to include all major categories of equity mutual funds such as balanced fund (now named as hybrid aggressive equity fund), large cap fund, multi-cap fund, mid cap fund, small cap fund and equity linked savings scheme. In selecting the mutual fund schemes, the parameters considered are the earliest time period in which all the types of schemes are available, 3 star and above in the Value Research Online ratings and having existed for more than 10 years. Hence, January 2, 2006 –May 31, 2018 is the study period for the second part of the study. Thus, 20 mutual fund schemes were selected for the period from January 2, 2006 to May 31, 2018. The 20 mutual fund scheme consists of 5 hybrid aggressive equity funds/balanced funds, 4 large cap funds, 5 multi-cap funds, 2 mid cap funds, 1 small cap fund and 3 equity linked savings schemes.

The 5 hybrid equity funds/balanced funds are Aditya Birla Sun Life Equity Hybrid ‘95 Fund (ABSLEH95F), DSP Equity & Bond Fund (DSPEHF), Franklin India Equity Hybrid Fund (FIEHF), HDFC Hybrid Equity Fund (HDFCHEF), SBI Equity Hybrid Fund (SBIEHF). The 4 large cap funds are Aditya Birla Sun Life Frontline Equity Fund (ABSLFLEF), Franklin India Bluechip Fund (FIBF), HDFC Top 100 Fund (HDFCTOP100F), SBI Bluechip Fund (SBIBF). The 5 multi-cap funds are Aditya Birla Sun Life Equity Fund (ABSLEF), DSP Opportunities Fund (DSPOF), Franklin India Prima Plus Fund (FIPPF), HDFC Capital Builder Value Fund (HDFCCBVF), SBI Magnum Multi-cap Fund (SBIMMULCF). Franklin India Prima Fund (FIPF) and SBI Magnum Midcap Fund (SBIMMCF) are the 2 mid cap funds. Franklin India Smaller Companies Fund (FISCF) is the small

cap fund and Franklin India Tax shield (FITS), HDFC Long Term Advantage Fund (HDFCLTAF), SBI Magnum Tax Gain Fund (SBIMTGF) are the 3 equity linked savings schemes.

### 3. METHODOLOGY AND RESULTS

Using daily closing prices of the mutual fund schemes, the rolling return for 7 year is calculated for the entire tenure of the study period. Once the 7 year rolling return for the entire period of study is calculated, then the compounded annual growth rate (CAGR) for the 7 year duration is calculated. Then, among this 7 year compounded annual growth rate, the least compounded annual growth rate and the best compounded annual growth rate are found out. The least compounded annual growth rate and the best compounded annual growth rate could be negative or positive. If the least compounded annual growth rate is negative, it indicates that the investor has lost at this rate compounded annually if the investor has made his investment at the worst time in spite of keeping invested for 7 years. On the other hand,

if the least compounded annual growth rate is positive, it means the investor's invested amount has grown at least at this rate compounded annually even if the investor has made his investment at the worst time indicating how long the investor needs to keep invested to avoid loss of capital. This type of compounded annual growth rate for the rolling returns for S&P BSE SENSEX, NIFTY 50 and 6 mutual fund schemes were calculated for the entire time span from January 2, 1995 to May 31, 2018 for different tenures, i.e. 1 year, 2 years, 3 years, ... 21 years, 22 years, 23 years and similarly the compounded annual growth rate for the rolling returns for both the indices and 20 mutual funds schemes were calculated for the time span from January 2, 2006 to May 31, 2018 for different tenures, i.e. 1 year, 2 years, 3 years, ... 10 years, 11 years, 12 years. The study used Augmented Dickey-Fuller test (ADF) to check whether the time series data of selected market indices and mutual fund schemes are stationary or non-stationary. The test results were shown in Table 3. The  $p$ -value is found to be significant indicating the rejection of  $H_0$ . That means the data points of selected market indices and mutual fund schemes are stationary after making the first difference, i.e. I (1).

**Table 3.** Stationary test results

Variables name	Augmented Dickey-Fuller Test					
	At level			1st difference		
	t-statistics	Critical value	P-value	t-statistics	Critical value	P-value
ABSLEF	0.631	-3.432	0.990	-45.327	-3.432	0.000*
ABSLEH95F	0.798	-3.432	0.994	-46.814	-3.432	0.000*
ABSLFLEF	0.276	-3.432	0.977	-45.138	-3.432	0.000*
DSPEHF	0.542	-3.432	0.988	-48.665	-3.432	0.000*
DSPOF	0.586	-3.432	0.989	-50.445	-3.432	0.000*
FIBF	0.063	-3.432	0.962	-52.553	-3.432	0.000*
FIEHF	0.893	-3.432	0.995	-52.604	-3.432	0.000*
FIPF	1.555	-3.432	0.999	-48.208	-3.432	0.000*
FIPPF	0.646	-3.432	0.991	-51.980	-3.432	0.000*
FISCF	1.797	-3.432	0.999	-47.434	-3.432	0.000*
FITS	0.950	-3.432	0.996	-51.485	-3.432	0.000*
HDFCCBVF	1.032	-3.432	0.997	-47.912	-3.432	0.000*
HDFCHEF	-0.461	-3.432	0.896	-49.024	-3.432	0.000*
HDFCLTAF	0.803	-3.432	0.994	-47.785	-3.432	0.000*
HDFCTOP100F	-0.002	-3.432	0.957	-50.204	-3.432	0.000*
SBIBF	0.700	-3.432	0.992	-48.838	-3.432	0.000*
SBIEHF	0.967	-3.432	0.996	-47.112	-3.432	0.000*
SBIMMCF	0.415	-3.432	0.983	-45.458	-3.432	0.000*
SBIMMULCF	0.688	-3.432	0.991	-48.006	-3.432	0.000*
SBIMTGF	0.192	-3.432	0.972	-49.285	-3.432	0.000*
SENSEX	-0.481	-3.432	0.892	-51.001	-3.432	0.000*
NIFTY	-0.426	-3.432	0.902	-51.464	-3.432	0.000*

Note: \* Denotes significance at 1 percent level.

**Table 4.** Rolling period CAGR (in %) for S&P BSE SENSEX, NIFTY 50, FIPF, FIBF & FIPPF schemes (from 1995 to 2018)

Rolling periods (in years)	S&P BSE SENSEX		NIFTY 50		FIPF		FIBF		FIPPF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best Scenario	Worst Scenario	Best Scenario	Worst Scenario
1	1.030	-0.585	1.002	-0.586	1.903	-0.669	1.675	-0.614	1.888	-0.538
2	0.631	-0.267	0.592	-0.233	1.069	-0.328	1.018	-0.435	1.270	-0.258
3	0.519	-0.187	0.491	-0.163	0.865	-0.233	0.746	-0.290	0.749	-0.148
4	0.490	-0.111	0.458	-0.087	0.772	-0.122	0.558	-0.089	0.582	-0.022
5	0.463	-0.064	0.448	-0.037	0.670	-0.035	0.535	-0.012	0.563	0.002
6	0.349	-0.060	0.332	-0.041	0.587	-0.028	0.451	-0.032	0.467	0.018
7	0.302	-0.044	0.289	-0.033	0.518	0.000	0.403	-0.010	0.430	0.056
8	0.267	-0.019	0.256	-0.009	0.472	0.047	0.335	0.013	0.396	0.087
9	0.240	0.026	0.230	0.028	0.422	0.088	0.330	0.060	0.402	0.086
10	0.219	0.046	0.209	0.048	0.412	0.104	0.302	0.076	0.409	0.092
11	0.200	0.064	0.199	0.073	0.366	0.106	0.304	0.077	0.374	0.092
12	0.212	0.068	0.208	0.077	0.315	0.129	0.258	0.100	0.326	0.122
13	0.193	0.071	0.185	0.077	0.315	0.139	0.251	0.098	0.320	0.149
14	0.185	0.062	0.178	0.066	0.319	0.126	0.257	0.091	0.301	0.144
15	0.178	0.091	0.176	0.095	0.292	0.182	0.229	0.114	0.272	0.167
16	0.171	0.090	0.167	0.092	0.296	0.174	0.229	0.113	0.259	0.167
17	0.150	0.084	0.148	0.084	0.287	0.154	0.220	0.115	0.274	0.165
18	0.138	0.093	0.142	0.094	0.278	0.169	0.215	0.114	0.266	0.193
19	0.126	0.092	0.142	0.092	0.269	0.163	0.207	0.133	0.256	0.189
20	0.129	0.096	0.133	0.098	0.265	0.188	0.201	0.151	0.253	0.207
21	0.112	0.093	0.131	0.094	0.247	0.180	0.200	0.140	0.221	0.195
22	0.119	0.091	0.123	0.092	0.224	0.178	0.171	0.141	0.223	0.192
23	0.117	0.103	0.118	0.104	0.207	0.195	0.158	0.149	0.212	0.202

**Table 5.** Rolling period CAGR (in %) for ABSLEH95F, HDFCCBFV and SBIEHF schemes (from 1995 to 2018)

Rolling periods (in years)	ABSL95F		HDFCCBFV		SBIEHF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario
1	2.031	-0.448	1.333	-0.591	2.687	-0.738
2	1.201	-0.297	0.883	-0.317	1.074	-0.550
3	0.474	-0.186	0.743	-0.197	0.638	-0.428
4	0.402	-0.043	0.594	-0.089	0.483	-0.278
5	0.428	0.018	0.606	0.002	0.426	-0.182
6	0.337	0.046	0.473	-0.013	0.328	-0.090
7	0.321	0.099	0.404	-0.046	0.274	-0.053
8	0.321	0.093	0.359	-0.022	0.260	-0.012
9	0.308	0.068	0.333	0.071	0.228	-0.068
10	0.328	0.108	0.329	0.105	0.204	-0.005
11	0.264	0.127	0.304	0.126	0.206	-0.002
12	0.266	0.106	0.286	0.129	0.220	-0.006
13	0.284	0.123	0.292	0.148	0.232	0.022
14	0.278	0.129	0.309	0.112	0.250	0.055
15	0.293	0.167	0.327	0.179	0.246	0.053
16	0.311	0.169	0.334	0.197	0.250	0.065
17	0.345	0.180	0.335	0.177	0.218	0.080
18	0.347	0.200	0.349	0.203	0.235	0.186
19	0.364	0.283	0.354	0.211	0.243	0.196
20	0.380	0.352	0.384	0.255	0.237	0.212
21	-	-	0.396	0.252	0.238	0.225
22	-	-	0.374	0.264	-	-
23	-	-	0.333	0.300	-	-

The investor could get positive return and negative return for any specific period of time. The study tried to identify the worst return (the maximum negative return) and the best return (the maximum positive return) for different holding periods ranging between 1 year and 23 years for the period from January 1, 1995 to May 31, 2018 and the similar worst return and the best return for different holding periods ranging between 1 year and 12 years for the period from January 2, 2006 to May 31, 2018. The results of the best and worst returns for the holding period ranging from 1 year to 23 years (for the period from 1995 to 2018) and 1 year to 12 years (for the period from 2006 to 2018) are given in Tables 4 to 5 and 6 to 10.

**Table 6.** Rolling period CAGR (in %) for ABSLEF, ABSLEH95F, ABSLFLEF, DSPEHF, DSPOF schemes (from 2006 to 2018)

Rolling periods (in years)	ABSLF		ABSLH95F		ABSLFLEF		DSPEHF		DSPOF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario
1	1.263	-0.599	0.935	-0.439	1.161	-0.534	0.749	-0.424	1.041	-0.593
2	0.569	-0.204	0.527	-0.108	0.596	-0.138	0.453	-0.063	0.644	-0.194
3	0.326	-0.125	0.299	-0.004	0.316	-0.046	0.259	-0.043	0.319	-0.106
4	0.302	-0.102	0.256	-0.002	0.287	-0.031	0.231	-0.004	0.272	-0.066
5	0.246	-0.031	0.207	0.043	0.234	0.029	0.187	0.036	0.228	-0.009
6	0.283	-0.015	0.262	0.046	0.287	0.042	0.216	0.028	0.270	0.003
7	0.247	0.053	0.231	0.098	0.244	0.092	0.183	0.081	0.222	0.062
8	0.238	0.047	0.212	0.089	0.225	0.078	0.182	0.077	0.227	0.057
9	0.237	0.065	0.210	0.095	0.225	0.082	0.179	0.078	0.225	0.065
10	0.159	0.083	0.160	0.105	0.174	0.098	0.146	0.097	0.150	0.095
11	0.175	0.120	0.166	0.128	0.181	0.130	0.157	0.115	0.167	0.120
12	0.170	0.126	0.159	0.132	0.173	0.140	0.149	0.121	0.162	0.123

**Table 7.** Rolling period CAGR (in %) for FIEHF, FISCF, FITS, HDFCCBFV, HDFCHEF schemes (from 2006 to 2018)

Rolling periods (in years)	FIEHF		FISCF		FITS		HDFCCBFV		HDFCHEF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario
1	0.640	-0.432	1.497	-0.686	1.048	-0.538	0.220	-0.511	1.323	-0.511
2	0.403	-0.106	0.711	-0.297	0.579	-0.174	0.697	-0.245	0.701	-0.275
3	0.262	-0.033	0.477	-0.231	0.344	-0.119	0.356	-0.131	0.371	-0.137
4	0.227	-0.010	0.391	-0.090	0.303	-0.006	0.300	-0.029	0.282	-0.027
5	0.181	0.021	0.333	-0.014	0.239	0.030	0.255	0.007	0.221	-0.011
6	0.231	0.024	0.399	0.007	0.309	0.036	0.298	0.000	0.268	-0.031
7	0.197	0.075	0.328	0.043	0.250	0.083	0.253	0.071	0.221	0.025
8	0.185	0.083	0.326	0.074	0.245	0.091	0.231	0.078	0.196	0.050
9	0.179	0.085	0.318	0.107	0.230	0.093	0.245	0.085	0.206	0.057
10	0.148	0.093	0.194	0.124	0.167	0.109	0.171	0.096	0.129	0.066
11	0.149	0.114	0.194	0.143	0.170	0.129	0.167	0.115	0.130	0.086
12	0.142	0.116	0.185	0.148	0.163	0.126	0.171	0.130	0.131	0.099



**Table 8.** Rolling period CAGR (in %) for HDFCLTAF, HDFCLTOP100F, SBIBF, SBIEHF, SBIMMCF schemes (from 2006 to 2018)

Rolling periods (in years)	HDFCLTAF		HDFCTOP100F		SBIBF		SBIEHF		SBIMMCF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario
1	1.169	-0.499	1.256	-0.449	1.061	-0.593	0.809	-0.488	1.614	-0.754
2	0.681	-0.271	0.682	-0.188	0.544	-0.239	0.453	-0.140	0.684	-0.368
3	0.330	-0.146	0.354	-0.066	0.312	-0.160	0.287	-0.080	0.445	-0.260
4	0.291	-0.023	0.298	0.010	0.265	-0.076	0.233	-0.057	0.365	-0.173
5	0.253	0.012	0.242	0.037	0.220	-0.012	0.204	0.010	0.305	-0.073
6	0.286	0.012	0.279	0.023	0.275	-0.005	0.245	0.024	0.372	-0.050
7	0.231	0.052	0.230	0.079	0.228	0.036	0.205	0.069	0.317	0.020
8	0.223	0.070	0.207	0.081	0.216	0.059	0.195	0.075	0.309	0.056
9	0.233	0.083	0.215	0.087	0.220	0.064	0.197	0.075	0.294	0.061
10	0.155	0.086	0.151	0.095	0.146	0.083	0.142	0.089	0.167	0.078
11	0.144	0.104	0.164	0.119	0.138	0.100	0.144	0.111	0.172	0.105
12	0.147	0.118	0.161	0.133	0.138	0.101	0.142	0.113	0.162	0.116

**Table 9.** Rolling period CAGR (in %) for FIPF, FIBF, FIPPF, SBIMMULCF, SBIMTGF schemes (from 2006 to 2018)

Rolling periods (in years)	FIPF		FIBF		FIPPF		SBIMMULCF		SBIMTGF	
	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario	Best scenario	Worst scenario
1	1.511	-0.667	1.076	-0.536	1.007	-0.529	1.050	-0.614	1.087	-0.595
2	0.708	-0.299	0.606	-0.176	0.559	-0.176	0.528	-0.253	0.566	-0.298
3	0.398	-0.220	0.339	-0.090	0.313	-0.069	0.326	-0.171	0.299	-0.205
4	0.356	-0.070	0.290	-0.003	0.283	-0.018	0.289	-0.131	0.246	-0.084
5	0.292	-0.009	0.221	0.028	0.222	0.022	0.229	-0.050	0.209	-0.031
6	0.377	0.005	0.265	0.027	0.292	0.026	0.252	-0.039	0.265	-0.013
7	0.305	0.052	0.221	0.078	0.243	0.085	0.211	0.015	0.226	0.015
8	0.306	0.072	0.208	0.069	0.232	0.088	0.214	0.037	0.206	0.020
9	0.294	0.096	0.201	0.073	0.225	0.088	0.218	0.047	0.212	0.055
10	0.182	0.116	0.152	0.087	0.180	0.103	0.135	0.069	0.131	0.054
11	0.185	0.133	0.157	0.111	0.183	0.128	0.135	0.093	0.129	0.067
12	0.175	0.137	0.146	0.113	0.171	0.137	0.135	0.097	0.124	0.076

**Table 10.** Rolling period CAGR (in %) for market indices S&P BSE SENSEX and NIFTY 50 (from 2006 to 2018)

Rolling periods (in years)	S&P BSE SENSEX CAGR (%)		NIFTY 50 CAGR (%)	
	Best scenario	Worst scenario	Best scenario	Worst scenario
1	1.040	-0.579	0.971	-0.578
2	0.551	-0.223	0.554	-0.201
3	0.294	-0.110	0.277	-0.095
4	0.252	-0.070	0.239	-0.069
5	0.203	-0.019	0.194	-0.017
6	0.234	-0.003	0.226	-0.004
7	0.180	0.035	0.181	0.035
8	0.168	0.025	0.167	0.026
9	0.174	0.025	0.172	0.028
10	0.111	0.046	0.116	0.049
11	0.118	0.079	0.123	0.083
12	0.122	0.085	0.124	0.088

The study also made an attempt to calculate probability of making negative return for different holding periods for both the indices and 6 schemes for the period from January 2, 1995 to May 31, 2018 and both the indices and 20 schemes for the period from January 2, 2006 to May 31, 2018. The result for the same is shown in Tables 11 to 21.

**Table 11.** Rolling period risk and return behavior of S&P BSE SENSEX and NIFTY (from 1995 to 2018)

Source: Author's estimation.

Rolling periods (in years)	S&P BSE SENSEX			NIFTY 50		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	5,554	1,774	0.319	5,554	1,763	0.317
2	5,317	1,490	0.280	5,317	1,403	0.263
3	5,078	844	0.166	5,078	733	0.144
4	4,834	709	0.146	4,834	514	0.106
5	4,586	574	0.125	4,586	306	0.066
6	4,336	445	0.102	4,336	205	0.047
7	4,088	250	0.061	4,088	112	0.027
8	3,837	110	0.028	3,837	62	0.016
9	3,583	0	0	3,583	0	0
10	3,329	0	0	3,329	0	0
11	3,078	0	0	3,078	0	0
12	2,828	0	0	2,828	0	0
13	2,579	0	0	2,579	0	0
14	2,333	0	0	2,333	0	0
15	2,090	0	0	2,090	0	0
16	1,838	0	0	1,838	0	0
17	1,591	0	0	1,591	0	0
18	1,340	0	0	1,340	0	0
19	1,090	0	0	1,090	0	0
20	846	0	0	846	0	0
21	598	0	0	598	0	0
22	351	0	0	351	0	0
23	103	0	0	103	0	0

**Table 12.** Rolling period risk and return behavior of FIBF, FIPF and FIPPF (1995–2018)

Rolling periods (in years)	FIBF			FIPF			FIPPF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	5,642	1,477	0.261	5,657	1,649	0.291	5,640	1,357	0.240
2	5,409	1,137	0.210	5,424	1,146	0.211	5,407	918	0.169
3	5,183	667	0.128	5,181	687	0.132	5,164	336	0.065
4	4,942	288	0.058	4,940	297	0.060	4,924	14	0.002
5	4,697	21	0.004	4,695	59	0.012	4,680	0	0
6	4,453	34	0.007	4,446	58	0.013	4,432	0	0
7	4,207	9	0.002	4,200	0	0	4,187	0	0
8	3,959	0	0	3,952	0	0	3,940	0	0
9	3,709	0	0	3,701	0	0	3,692	0	0
10	3,460	0	0	3,454	0	0	3,445	0	0
11	3,207	0	0	3,202	0	0	3,193	0	0

**Table 12 (cont.).** Rolling period risk and return behavior of FIBF, FIPF and FIPPF (1995–2018)

Rolling periods (in years)	FIBF			FIPF			FIPPF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
12	2,952	0	0	2,947	0	0	2,939	0	0
13	2,691	0	0	2,686	0	0	2,679	0	0
14	2,430	0	0	2,425	0	0	2,419	0	0
15	2,169	0	0	2,164	0	0	2,159	0	0
16	1,908	0	0	1,904	0	0	1,899	0	0
17	1,648	0	0	1,644	0	0	1,640	0	0
18	1,387	0	0	1,383	0	0	1,380	0	0
19	1,126	0	0	1,123	0	0	1,120	0	0
20	868	0	0	866	0	0	863	0	0
21	610	0	0	609	0	0	606	0	0
22	355	0	0	356	0	0	354	0	0
23	102	0	0	102	0	0	102	0	0

**Table 13.** Rolling period risk and return behavior of ABSLEH95F, HDFCCBVF and SBIEHF (1995–2018)

Rolling periods (in years)	ABSL95F			HDFCCBVF			SBIEHF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	4,759	1,063	0.223	5,530	1,481	0.267	5,246	1,409	0.268
2	4,514	604	0.133	5,294	1,226	0.231	5,002	1,167	0.233
3	4,265	277	0.064	5,053	778	0.153	4,750	697	0.146
4	4,018	28	0.006	4,808	239	0.049	4,500	910	0.202
5	3,767	0	0	4,559	0	0	4,260	803	0.188
6	3,516	0	0	4,310	60	0.013	4,012	466	0.116
7	2,265	0	0	4,063	56	0.013	3,765	169	0.044
8	3,016	0	0	3,811	63	0.016	3,520	10	0.002
9	2,769	0	0	3,560	0	0	3,274	56	0.017
10	2,525	0	0	3,307	0	0	3,028	4	0.001
11	2,285	0	0	3,057	0	0	2,782	4	0.001
12	2,055	0	0	2,810	0	0	2,535	5	0.001
13	1,812	0	0	2,562	0	0	2,054	0	0
14	1,569	0	0	2,317	0	0	1,809	0	0
15	1,326	0	0	2,075	0	0	1,572	0	0
16	1,080	0	0	1,825	0	0	1,329	0	0
17	838	0	0	1,579	0	0	1,082	0	0
18	592	0	0	1,332	0	0	842	0	0
19	347	0	0	1,084	0	0	596	0	0
20	103	0	0	842	0	0	350	0	0
21	–	–	–	596	0	0	103	0	0
22	–	–	–	350	0	0	–	–	–
23	–	–	–	103	0	0	–	–	–

**Table 14.** Rolling period risk and return behavior of ABSLEF, ABSLEH95F and ABSLFLEF (2006–2018)

Rolling Periods (in years)	ABSFLEF			ABSFLEH95F			ABSFLEF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,770	685	0.247	2,769	507	0.183	2,770	569	0.205
2	2,526	646	0.255	2,525	184	0.072	2,526	330	0.130
3	2,285	235	0.102	2,285	38	0.016	2,285	21	0.009
4	2,055	118	0.057	2,055	0	0	2,055	24	0.011
5	1,812	70	0.038	1,812	0	0	1,812	0	0
6	1,569	56	0.035	1,569	0	0	1,569	0	0
7	1,326	0	0	1,326	0	0	1,326	0	0
8	1,080	0	0	1,080	0	0	1,080	0	0
9	838	0	0	838	0	0	838	0	0
10	592	0	0	592	0	0	592	0	0
11	347	0	0	347	0	0	347	0	0
12	103	0	0	103	0	0	103	0	0

**Table 15.** Rolling period risk and return behavior of FIBF, FIHEF and FIPF (2006–2018)

Rolling periods (in years)	FIBF			FIHEF			FIPF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,970	624	0.210	2,952	517	0.175	2,951	698	0.236
2	2,709	346	0.127	2,692	277	0.102	2,690	553	0.205
3	2,448	105	0.042	2,431	43	0.017	2,429	159	0.065
4	2,187	7	0.003	2,170	12	0.005	2,168	85	0.039
5	1,919	0	0	1,909	0	0	1,907	9	0.004
6	1,666	0	0	1,649	0	0	1,647	0	0
7	1,405	0	0	1,388	0	0	1,386	0	0
8	1,144	0	0	1,127	0	0	1,125	0	0
9	886	0	0	869	0	0	867	0	0
10	628	0	0	611	0	0	609	0	0
11	373	0	0	356	0	0	355	0	0
12	119	0	0	102	0	0	101	0	0

**Table 16.** Rolling period risk and return behavior of FIPPF, FISCF and DSPEHF (2006–2018)

Rolling periods (in years)	FIPPF			FISCF			DSPEHF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,953	588	0.199	2,953	704	0.238	2,803	536	0.191
2	2,692	360	0.133	2,692	609	0.226	2,555	279	0.109
3	2,431	80	0.032	2,430	180	0.074	2,310	69	0.029
4	2,170	17	0.007	2,169	100	0.046	2,070	3	0.001
5	1,909	0	0	1,908	18	0.009	1,824	0	0
6	1,649	0	0	1,648	0	0	1,577	0	0
7	1,388	0	0	1,387	0	0	1,331	0	0
8	1,127	0	0	1,126	0	0	1,083	0	0

**Table 16 (cont.).** Rolling period risk and return behavior of FIPPF, FISCF and DSPEHF (2006–2018)

Rolling periods (in years)	FIPPF			FISCF			DSPEHF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
9	869	0	0	868	0	0	832	0	0
10	611	0	0	610	0	0	586	0	0
11	356	0	0	356	0	0	352	0	0
12	102	0	0	102	0	0	104	0	0

**Table 17.** Rolling period risk and return behavior of FITS, HDFCCBVF and HDFCHEF (2006–2018)

Rolling periods (in years)	FITS			HDFCCBVF			HDFCHEF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,914	567	0.194	2,808	764	0.272	2,808	955	0.340
2	2,653	304	0.114	2,560	441	0.172	2,560	780	0.304
3	2,392	94	0.039	2,315	143	0.061	2,315	302	0.130
4	2,131	7	0.003	2,074	24	0.011	2,074	69	0.033
5	1,870	0	0	1,824	0	0	1,824	27	0.014
6	1,610	0	0	1,578	0	0	1,578	62	0.039
7	1,349	0	0	1,332	0	0	1,332	0	0
8	1,088	0	0	1,084	0	0	1,084	0	0
9	840	0	0	842	0	0	842	0	0
10	593	0	0	596	0	0	596	0	0
11	349	0	0	350	0	0	350	0	0
12	102	0	0	103	0	0	103	0	0

**Table 18.** Rolling period risk and return behavior of HDFCLTAF, HDFCTOP100F and SBIBF (2006–2018)

Rolling periods (in years)	HDFCLTAF			HDFCTOP100F			SBIBF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,808	779	0.277	2,808	781	0.278	2,783	659	0.236
2	2,560	443	0.173	2,560	385	0.150	2,536	607	0.239
3	2,315	154	0.665	2,315	129	0.055	2,294	134	0.058
4	2,074	17	0.008	2,074	0	0	2,055	114	0.055
5	1,824	0	0	1,824	0	0	1,810	39	0.021
6	1,578	0	0	1,578	0	0	1,572	3	0.001
7	1,332	0	0	1,332	0	0	1,329	0	0
8	1,084	0	0	1,084	0	0	1,082	0	0
9	842	0	0	842	0	0	842	0	0
10	596	0	0	596	0	0	596	0	0
11	350	0	0	350	0	0	350	0	0
12	103	0	0	103	0	0	103	0	0

**Table 19.** Rolling period risk and return behavior of SBIEHF, SBIMMCF and SBIMTF (2006–2018)

Rolling periods (in years)	SBIEHF			SBIMMCF			SBIMTF		
	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
1	2,782	574	0.206	2,783	670	0.240	2,784	736	0.264
2	2,535	459	0.181	2,536	636	0.250	2,537	581	0.229
3	2,293	74	0.032	2,294	485	0.211	2,296	218	0.094
4	2,054	83	0.040	2,055	301	0.146	2,057	116	0.056
5	1,810	0	0	1,810	308	0.170	1,812	85	0.046
6	1,572	0	0	1,572	128	0.081	1,572	30	0.019
7	1,329	0	0	1,329	0	0	1,329	0	0
8	1,082	0	0	1,082	0	0	1,082	0	0
9	842	0	0	842	0	0	842	0	0
10	596	0	0	596	0	0	596	0	0
11	350	0	0	350	0	0	350	0	0
12	103	0	0	103	0	0	103	0	0

**Table 20.** Rolling period risk and return behavior of DSPEOF and SBIMMULCF (2006–2018)

Rolling periods (in years)	DSPEOF			SBIMMULCF			
	Number of observations	Negative return data points	Risk/probability of loss	Rolling periods	Number of observations	Negative return data points	Risk/probability of loss
1	2,802	603	0.215	1	2,783	696	0.250
2	2,554	526	0.205	2	2,536	704	0.277
3	2,309	145	0.062	3	2,294	341	0.148
4	2,069	64	0.030	4	2,055	203	0.098
5	1,823	15	0.008	5	1,810	259	0.143
6	1,576	0	0	6	1,572	119	0.075
7	1,330	0	0	7	1,327	0	0
8	1,082	0	0	8	1,080	0	0
9	831	0	0	9	840	0	0
10	585	0	0	10	594	0	0
11	351	0	0	11	348	0	0
12	103	0	0	12	101	0	0

**Table 21.** Rolling period risk and return behavior of SENSEX and Nifty (2006–2018)

Source: Author's estimation.

S&P BSE SENSEX			NIFTY 50		
Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
2,828	703	0.248	2,828	698	0.246
2,579	664	0.257	2,579	588	0.227

**Table 21 (cont.).** Rolling period risk and return behavior of SENSEX and Nifty (2006–2018)

S&P BSE SENSEX			NIFTY 50		
Number of observations	Negative return data points	Risk/probability of loss	Number of observations	Negative return data points	Risk/probability of loss
2,333	138	0.059	2,333	137	0.058
2,090	119	0.056	2,090	108	0.051
1,838	68	0.036	1,838	55	0.029
1,591	5	0.003	1,591	13	0.008
1,340	0	0	1,340	0	0
1,090	0	0	1,090	0	0
846	0	0	846	0	0
598	0	0	598	0	0
351	0	0	351	0	0
103	0	0	103	0	0

Thus, from the Tables 4, 10,11 and 20, one can infer that the holding period for positive return in case of S&P BSE SENSEX and NIFTY 50 is 9 years and above (for the period from 1995 to 2018) and 7 years and above (for the period from 2006 to 2018). Similarly, the holding period for positive return in case of hybrid equity aggressive funds/balanced funds (ABSLEH95F, SBIEHF, FIHEF, DSPEHF and HDFCHEF) it is 5 years and above (for the period from 1995 to 2018) and is 5 to 7 years and above (for the period from 2006 to 2018). For large cap funds (FIBF, ABSLFLEF, SBIBCF, HDFCTOP100F) it is 8 years and above (for the period from 1995 to 2018) and is 5 to 7 years and above (for the period from 2006 to 2018). For mid cap funds (FIPF, SBIMMCF) it is 7 years and above (for the duration 1995 to 2018) and is 6 to 7 years and above (for the period from 2006 to 2018). For multi cap funds (FIPPF, ABSLEF, SBIMMULCF, DSPEOF, HDFCCBVF) it is 5 years and above (for the period from 1995 to 2018) and is 5 to 7 years and above (for the period from 2006 to 2018). For small cap fund (FISCF) it is found to be 6 years and above (for the period from 2006 to 2018) and for equity linked savings schemes (FITSF, SBIMTGF, HDFCLTAF) it is 5 to 7 years and above (for the period from 2006 to 2018). Thus, the holding period for positive return ranges between 5 years and above to 9 years and above depending upon the nature of the schemes. Similarly, the holding period for the zero probability of getting negative return for both the indices found to be 9 years and above. In case

of balanced fund, large cap fund, mid cap fund, multi-cap fund, small cap fund and ELSS ranges between 5 years to 9 years.

#### 4. FINDINGS

The finding of the study is shown in Tables 22 and 23. From Tables 22 and 23, one can infer that the holding period required for the investors to ensure that they are getting some positive return, hovers around 5 to 7 years and above in case of balanced fund, large cap funds, multi-cap funds, and ELSS. 6 to 7 years and above in case of mid cap fund, 6 years and above for small cap funds and 7 to 9 years and above for indices. Also the holding period to ensure zero probability of negative return also found to be the same for balanced funds, large cap funds, multi-cap funds, mid cap funds, ELSS and indices. At the same time, the best returns for the same periods (1 year to 23 years) for all the funds under study are better than that of the return from bank fixed deposits.

Also the study found that, in the worst scenario<sup>1</sup>, the minimum returns are mixed for the shorter period, but for longer period, the performance of the funds were better than indices.

Similar is the case with the best scenario<sup>2</sup> as well. This once again proves that the longer the investment horizon, the better the returns to the investors.

**Table 22.** Summary of findings of minimum holding period for positive returns across indices and different categories of mutual fund schemes

Scheme	Period (1995–2018)			Period (2006–2018)		
	Holding period (in years)	Range of minimum return (CAGR in %)	Range of maximum return (CAGR in %)	Holding period (in years)	Range of minimum return (CAGR in %)	Range of maximum return (CAGR in %)
<b>Market indices</b>						
BSE SENSEX	9	<sup>1</sup> 0.257 to 10.27 <sup>1</sup>	<sup>2</sup> 11.27 to 24.07 <sup>2</sup>	7	<sup>1</sup> 2.54 to 8.53 <sup>1</sup>	<sup>2</sup> 11.18 to 18.07 <sup>2</sup>
NIFTY 50	9	<sup>1</sup> 0.284 to 10.41 <sup>1</sup>	<sup>2</sup> 11.81 to 23.00 <sup>2</sup>	7	<sup>1</sup> 2.68 to 8.84 <sup>1</sup>	<sup>2</sup> 11.60 to 18.16 <sup>2</sup>
<b>Aggressive hybrid equity funds/balanced funds</b>						
ABSLEH95F	5	<sup>1</sup> 0.182 to 35.24 <sup>1</sup>	<sup>2</sup> 26.43 to 42.77 <sup>2</sup>	4	<sup>1</sup> 0.22 to 13.16 <sup>1</sup>	<sup>2</sup> 15.85 to 26.19 <sup>2</sup>
SBIEHF	13	<sup>1</sup> 0.216 to 22.54 <sup>1</sup>	<sup>2</sup> 21.84 to 42.17 <sup>2</sup>	5	<sup>1</sup> 0.99 to 11.34 <sup>1</sup>	<sup>2</sup> 14.15 to 24.45 <sup>2</sup>
FIHEF	–	–	–	5	<sup>1</sup> 2.11 to 11.59 <sup>1</sup>	<sup>2</sup> 14.18 to 23.06 <sup>2</sup>
DSPEHF	–	–	–	5	<sup>1</sup> 2.81 to 12.15 <sup>1</sup>	<sup>2</sup> 14.61 to 21.64 <sup>2</sup>
HDFCHEF	–	–	–	7	<sup>1</sup> 2.47 to 09.91 <sup>1</sup>	<sup>2</sup> 12.94 to 22.14 <sup>2</sup>
<b>Large cap funds</b>						
FIBF	8	<sup>1</sup> 0.125 to 15.05 <sup>1</sup>	<sup>2</sup> 15.48 to 33.49 <sup>2</sup>	5	<sup>1</sup> 2.67 to 11.27 <sup>1</sup>	<sup>2</sup> 14.56 to 26.48 <sup>2</sup>
ABSLFLEF	–	–	–	5	<sup>1</sup> 2.94 to 14.01 <sup>1</sup>	<sup>2</sup> 17.31 to 28.70 <sup>2</sup>
SBIBCF	–	–	–	7	<sup>1</sup> 3.61 to 10.14 <sup>1</sup>	<sup>2</sup> 13.78 to 22.76 <sup>2</sup>
HDFCTOP100F	–	–	–	4	<sup>1</sup> 1.01 to 13.31 <sup>1</sup>	<sup>2</sup> 15.08 to 29.78 <sup>2</sup>
<b>Multi-cap funds</b>						
FIPPF	5	<sup>1</sup> 0.17 to 20.71 <sup>1</sup>	<sup>2</sup> 20.75 to 56.32 <sup>2</sup>	5	<sup>1</sup> 2.22 to 13.65 <sup>1</sup>	<sup>2</sup> 17.08 to 29.18 <sup>2</sup>
ABSLEF	–	–	–	7	<sup>1</sup> 4.71 to 12.63 <sup>1</sup>	<sup>2</sup> 15.93 to 24.65 <sup>2</sup>
SBIMMULCF	–	–	–	7	<sup>1</sup> 1.54 to 09.68 <sup>1</sup>	<sup>2</sup> 13.46 to 21.79 <sup>2</sup>
DSPEOF	–	–	–	6	<sup>1</sup> 0.34 to 12.32 <sup>1</sup>	<sup>2</sup> 15.04 to 26.98 <sup>2</sup>
HDFCCBVF	9	<sup>1</sup> 7.15 to 25.52 <sup>1</sup>	<sup>2</sup> 28.59 to 38.36 <sup>2</sup>	5	<sup>1</sup> 0.49 to 13.03 <sup>1</sup>	<sup>2</sup> 16.69 to 29.78 <sup>2</sup>
<b>Mid cap funds</b>						
FIPF	7	<sup>1</sup> 0.02 to 18.83 <sup>1</sup>	<sup>2</sup> 20.28 to 51.84 <sup>2</sup>	6	<sup>1</sup> 0.45 to 13.66 <sup>1</sup>	<sup>2</sup> 17.46 to 37.72 <sup>2</sup>
SBIMMCF	–	–	–	7	<sup>1</sup> 2.02 to 11.58 <sup>1</sup>	<sup>2</sup> 16.19 to 31.70 <sup>2</sup>
<b>Small cap fund</b>						
FISCF	–	–	–	6	<sup>1</sup> 0.74 to 14.77 <sup>1</sup>	<sup>2</sup> 18.52 to 39.86 <sup>2</sup>
<b>Equity linked savings scheme</b>						
FITSF	–	–	–	5	<sup>1</sup> 2.98 to 12.94 <sup>1</sup>	<sup>2</sup> 16.31 to 30.86 <sup>2</sup>
SBIMTGF	–	–	–	7	<sup>1</sup> 1.54 to 07.64 <sup>1</sup>	<sup>2</sup> 12.42 to 22.60 <sup>2</sup>
HDFCLTAF	–	–	–	5	<sup>1</sup> 1.16 to 11.82 <sup>1</sup>	<sup>2</sup> 14.43 to 28.63 <sup>2</sup>

**Table 23.** Summary of findings

Indices/types of fund	From January 2, 1995 to May 31, 2018	From January 2, 2006 to May 31, 2018
BSE SENSEX and NIFTY 50	9 years & above	7 years & above
Aggressive hybrid equity funds	5 years & above	5 to 7 years & above
Large cap funds	8 years & above	5 to 7 years & above
Multi-cap funds	5 years & above	5 to 7 years & above
Mid cap funds	7 years & above	6 to 7 years & above
Small cap funds	–	6 years & above
Equity linked savings schemes	–	5 to 7 years & above



## 5. DISCUSSION

Indian investors prefer to put their surplus in financial instruments, which provide safe returns. Mutual fund returns are volatile. To induce the investors to invest in mutual funds, the advisors should be in a position to give a concrete time frame in which the probability of losing one's capital is zero. If we look into the equity mutual fund schemes, they could be classified into hybrid equity funds, large cap funds, multi-cap funds, mid cap funds and small cap funds and equity linked savings scheme, which is a special kind of multi-cap funds. The advisors ascending order of ranking the abovementioned schemes on the basis of riskiness is hybrid equity funds, large cap funds, multi-cap funds, mid cap funds and small cap funds. If we look in to the minimum holding period or the minimum time duration required to get a minimum positive return for the investments made in FIHEF (aggressive hybrid equity fund), FIBF (large cap fund), FIPPF (multi-cap fund), FITS (multi-cap fund) is 5 years and in case FIPF (mid cap fund), FISCF (small cap fund), it is 6 years, which corroborates the financial planners order of preference for investment to investors in terms of riskiness. Thus, the investor could venture to mutual fund investment through aggressive hybrid equity, large cap funds and/or multi-cap funds, which are the least risky equity schemes. Once the investor understands the nuances of mutual fund investment, they could widen their investment domain to relatively more risky schemes like mid cap funds and small cap funds. Thus, this study helps the

investors in understanding how long they should hold their investment or stick to their investment decision to avoid losing their capital, on the one hand, and to create wealth, on the other hand.

## 6. LIMITATIONS

The study could consider only 8 mutual funds, one each from large cap fund and mid cap fund and 2 each from aggressive hybrid equity/balanced funds and multi-cap funds for the duration of 23 years. Similarly, for the period from January 2, 2006 to May 31, 2018, 5 aggressive hybrid equity/balanced funds, 4 large cap funds, 5 multi-cap funds, 2 mid cap funds, 1 small cap fund and 3 equity linked savings schemes were considered. Hence, it could not be generalized to all funds from different asset management companies (AMC) available in India.

## 7. FUTURE STUDY

The study could be carried out to accommodate more number of funds from different AMCs so that the results could help us to come with some useful generalization of the findings, which will be useful for the investors in their investment decision making process. Also the study found out only return for a lump sum investment. It could be carried out for Systematic Investment Plan (SIP) to ensure how much period the investor should invest systematically to ensure that he gets a positive return.

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## CONCLUSION

Thus, the study concludes that the investors who have a longer holding period of 5 years and above for their investments could identify the appropriate mutual fund schemes such as aggressive hybrid equity/balanced fund, large cap fund, multi-cap fund, mid cap fund, small cap fund and equity linked savings scheme and generate positive returns, which are often better than the returns of fixed income securities. By doing so, they can create a better corpus to fulfil their goals at relative ease when compared to investing only in fixed income securities such as bank fixed deposits to achieve their goals.

## REFERENCES

1. Adhikary, A., Bora, B., & Kumar, J. (2014). Mutual Fund Performance and Investor's Perception: An Indian Perspective. In *Handbook of Research on Strategic Business Infrastructure Development and Contemporary Issues in Finance* (pp. 351-361). IGI Global. Retrieved from <https://www.igi-global.com/chapter/mutual-fund-performance-and-investors-perception/104297>
2. Anagol, S., Marisetty, V., Sane, R., & Venugopal, B. (2017). On the impact of regulating commissions: evidence from the Indian mutual funds market. *The World Bank Economic Review*, 31(1), 241-270. <https://doi.org/10.1093/wber/lhv065>
3. Anand, S., & Murugaiah, V. (2006). *Analysis of Components of Investment Performance – An Empirical Study of Mutual Funds in India* (10<sup>th</sup> Indian Institute of Capital Markets Conference. ICAI: Hyderabad).
4. Bernstein, P. L. (1993). Is investing for the long term theory or just mumbo-jumbo? *Journal of Post Keynesian Economics*, 15(3), 387-393. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/01603477.1993.11489950?journalCode=mpke20>
5. Businesstoday (2016). *Virtue of Long term Investing*. Retrieved from <http://www.businesstoday.co.om/index.php/Issues/BEST-BANKS-NBFCS-2015-A-BT-SURVEY-CONDUCTED-BY-ERNST-YOUNG/The-virtue-of-long-term-investing>
6. Chakraborty, S., Kumar, S., Lobo, L. S. (2018). A Factorial Analysis of Information Ratio and Its Causal Effect on Yearly Return of Net Asset Value – A Study of Indian Equity Diversified Mutual Fund Schemes. *International Journal of Engineering and Technology (UAE)*, 7(4.41), 707-712. Retrieved from <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85059985793&partnerID=40&md5=86dd8752f29ec302da79df24c0859279>
7. Cremers, K. J. M., & Petajisto, A. (2009). How Active is Your Fund Manager? A New Measure That Predicts Performance. *The Review of Financial Studies*, 22(9), 3329-3365. <https://doi.org/10.1093/rfs/hhp057>
8. Dhar, J., & Mandal, K. (2014). Market timing abilities of Indian mutual fund managers: An empirical analysis. *Decision*, 41(3), 299-311. Retrieved from <https://link.springer.com/article/10.1007/s40622-014-0036-2>
9. Fama, E. F., & French, K. R. (2010). Luck versus Skill in the Cross-Section of Mutual Fund Returns. *Journal of Finance*, 65(5), 1915-1947. <https://doi.org/10.1111/j.1540-6261.2010.01598.x>
10. Finance week (2004, May). *Sensible Long Term of Investing* (58-59).
11. He, W., Cao, B., & Baker, H. K. (2015). The performance and market timing ability of Chinese mutual funds. *Financial Services Review*, 24(3), 289-312. Retrieved from <https://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10570810&AN=108991324&h=%2fCHgC391O8FXA6RpyDcVC9H3DvCovu7hIKjLc638YTmGsSwIt9X%2f%2f3AuAcpLkSEn0JoiYT%2fUvyqF%2fe9yq2Nlg%3d%3d&crl=f&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10570810%26AN%3d108991324>
12. Javier Estrada, K. (2007). *Investing for the long term: Techniques and Perspective for the European Market*. Retrieved from <http://web.iese.edu/jestrada/PDF/Research/NotRefereed/EBF-I21C-Eur.pdf>
13. Jensen, Michael C. (1967). The Performance of Mutual Funds in the Period 1945-1964. *Journal of Finance*, 23(2), 389-416. <https://doi.org/10.2139/ssrn.244153>
14. Kaur, S., & Bajwa, R. (2017). Impact of size on performance of Indian equity mutual funds. *International Journal of Applied Business and Economic Research*, 15(9), 283-294.
15. Kavita Arora (2015). Risk-adjusted Performance Evaluation of Indian Mutual Fund Schemes. *Paradigm*, 19(1), 79-94. <https://doi.org/10.1177%2F0971890715585203>
16. Kumar, S., & Katyal, H. (2017). Evaluation of market timing abilities of Indian mutual fund managers: An empirical study. *International Journal of Applied Business and Economic Research*, 15(9), 421-426. Retrieved from <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85019638871&partnerID=40&md5=8d935d8c0647416ea68dee1230a8304f>
17. Mishra, R., & Ahuja, V. (2016). Performance evaluation of indian mutual funds during bull and bear periods. *Indian Journal of Finance*, 10(8), 24-41. Retrieved from <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84982975770&doi=10.17010%2fjfi%2f2016%2fv10i8%2f99318&partnerID=40&md5=f5b160302bea31341e87cd8301dff5f1>
18. Mohanasundari, & Vidhyapriya (2015). Indian mutual fund industry: An impact of investor's perception and performance of tax saving schemes in mutual fund. *International Business Management*, 9(3), 267-272.
19. Saji, T. G., & Nair, R. K. (2017). Investor-centric strategies for Indian mutual fund industry: inferring from the behavior of individual investors. *Decision*, 44(3), 209-225. Retrieved from <https://link.springer.com/article/10.1007/s40622-017-0157-5>
20. Sapat, N. R., & Madava, R. (2003). Performance evaluation of Indian mutual funds.
21. Sehgal, S., & Babbar, S. (2017). Evaluating alternative performance benchmarks for Indian mutual fund industry. *Journal of Advances in Management Research*, 14(2), 222-250. <https://doi.org/10.1108/JAMR-04-2016-0028>

22. Treynor, J. L. (1976). Long-Term Investing. *Financial Analysts Journal*, 32(3), 56-59. <https://doi.org/10.2469/faj.v32.n3.56>
23. Trivedi, R., Swain, P. K., & Dash, M. (2017). A study of investor's perception towards mutual fund decision: An Indian perspective. *International Journal of Economic Research*, 14(9), 209-219.
24. Turan, M. S., Bodla, B. S., & Sh. Sushil Kumar Mehta (2001, July-December). Performance Evaluation of Listed Schemes of Mutual Funds. *Management Researchers*, 8(1&2), 38-66.
25. Velavan, M., Sivasbramanian, J., Mohamed Jasim, K., & Vijay Anand, V. (2017). Multilayer perception modeling and performance measures: Mutual fund patterns with special reference to indian equity funds. *International Journal of Economic Research*, 14(4), 511-520.
26. World Economic Forum (n.d.). *The future of Long Term Investing*. Retrieved from [http://www3.weforum.org/docs/WEF\\_Future-LongTermInvesting\\_Report\\_2011.pdf](http://www3.weforum.org/docs/WEF_Future-LongTermInvesting_Report_2011.pdf) (accessed on May 26, 2017).
27. Yadav, A. P. (2015). The Indian mutual fund industry: From inception to advancement. *Indian Journal of Finance*, 9(5), 47-61. <http://dx.doi.org/10.17010/ijf%2F2015%2Fv9i5%2F71452>