

EXCHANGE TRADED FUND INVESTING

Background: We all invest in the Equity Markets in order to generate wealth through (hopefully outsized) returns on our capital deployed; expectations are that the returns would be higher than investing in alternative asset classes/avenues. Initially, Returns on Equity Investing were benchmarked against Returns from Fixed Income/Deposits. However, considering the vastly different risk parameters of these asset classes, it was quickly understood that Equity Investing needs an alternate, and more appropriate, benchmark. The most common benchmark these days, against which performance of an investment/portfolio of investments is marked to, is an index. In the Indian context, the most common indices used as benchmark are NSE Nifty 50, BSE Sensex 30, NSE Nifty 100, Nifty Midcap 150, etc. The decision to use a particular index as a benchmark is driven by the strategy and universe of stocks of the fund manager.

However, the indices were not investible (imagine the corpus required to invest in 50 stocks of NSE Nifty 50 in their respective proportions) and hence, these benchmark returns were not achievable by someone who wanted to invest in the index. That is until the launch of **Exchange Traded Funds (ETF)**. These funds replicate the holdings of the benchmark index in exactly the same proportion as the index in an effort to match the returns of the index over various time periods. Because there is no attempt to outperform the index through variation in holdings in the ETF v/s the index, these are passively managed funds.

Rationale: Why should one invest in an ETF? It gives the investor a returns profile similar to the benchmark (exactly matching returns are impossible, considering the lags involved in replicating the changes in the benchmarks, deploying the dividends received from index stocks, impossibility of exactly matching the stock weightings of the index), is low cost (with fund expenses in range of 0.1% to 0.5% p.a.), liquid and transparent with quotes available in real time (unlike for a MF, when NAV is available only at the end of the day, after the market has closed).

This means an investor, who invests in the benchmark ETF, will only underperform the index to the extent of the fund expenses and tracking error. However, in case of investing in a MF, the returns performance can be divergent due the different holdings in the MF portfolio v/s the benchmark, as there are restrictions on individual holdings (currently capped at 10%) in a MF scheme by the regulator. This means that a particular stock's weighting in an index can rise to exceed 10%, but the MF fund manager has to trim his position in the stock once it exceeds 10%. Hence, the fund manager is always fighting a losing battle in his effort to generate an alpha over the benchmark.

But this is not the case for an ETF. Since its mandate is to replicate the index exactly, it can hold individual holdings in excess of the regulator cap of 10%. So an investor in an ETF can participate in a large rally in an index stock, far beyond what is possible for an investor in a MF scheme holding the same stock.

Hence, anyone disappointed by investment returns (direct or through a MF) which have underperformed the benchmark returns should consider investing in an ETF of the index

benchmark. They should at least get returns close to the benchmark index, consistently (theoretically, as ETF investing is fairly new in India, but has been widely adopted & proved in the Developed markets).

Investment Thesis: There are multiple ETF product offerings currently from HDFC MF, Kotak MF, ICICI MF, Nippon MF and Motilal MF (I have selected the larger AMCs due to the multiplicity of ETF offerings offered by them. There may be better offerings from smaller AMCs but the overall index coverage may be restricted) which track the different indices of NSE and BSE. Given below is the list of Indian indices which are replicated by various MF ETFs:

Sr. No.	Index Description
1	BSE Sensex 30 Index
2	BSE 500 Index
3	BSE Midcap Select Index
4	Nifty 100
5	Nifty 50
6	Nifty Bank Index
7	Nifty Midcap 150
8	Nifty Next 50
9	Nifty Private Banks Index
10	Nifty Value 20 Index
11	Nifty 100 Low Volatility 30 Index
12	Nifty Alpha Low Volatility 30 Index
13	Nifty 500
14	Nifty Smallcap 250

I have not included ETFs covering debt indices as my primary motivation was to check performance of equity indices; but the overall rationale, investment rationale and short-listing of ETFs to invest in should remain the same in case of Debt ETFs also. I have also not included ETFs tracking CPSE and other indices covering public sector/government owned companies, primarily due to my bias against investing in these stocks. But again, for anyone interested in evaluating investing in ETFs replicating these indices, the theory should remain the same.

Out of the above, which ETF replicating which index should one invest in?

My timeframe for investing in equity investing is generally for 5 years and above. I have kept the same time frame while evaluating the index performance which is the starting point for me. However, in the below table I have also attempted to cover different time frames up-to 10 years in my analysis in order to remove any framing bias.

Index Description	Time Frame Upto 30th November, 2020									
	1 Month	3 Months	6 Months	Year to Date	1 Year	2 Years	3 Years	5 Years	10 Years	From 1/1/2008
BSE Sensex 30 Index	9.00	13.11	40.93	8.30	8.91	12.80	10.69	12.47	10.25	7.69
BSE 500 Index	9.89	11.98	42.13	9.95	10.60	10.64	6.38	11.36	9.95	6.80
BSE Midcap Select Index	13.34	11.97	48.41	14.35	14.76	7.59	0.85	10.24	9.72	5.61
Nifty 100	9.38	11.98	39.04	7.73	8.18	10.82	7.87	11.58	10.09	7.50
Nifty 50	9.19	12.47	40.21	7.70	8.32	11.50	9.00	11.71	9.81	7.23
Nifty Bank Index	19.54	25.46	58.25	-7.92	-7.10	6.06	4.87	11.81	10.59	9.85
Nifty Midcap 150	13.99	13.69	52.31	19.04	20.31	10.90	3.35	11.92	12.20	8.10
Nifty Next 50	10.64	8.84	32.07	8.16	7.55	6.59	1.49	10.49	11.23	8.31
Nifty Private Banks Index	19.75	27.33	61.18	-7.25	-6.14	5.43	5.36	12.39	14.11	12.37
Nifty Value 20 Index	6.93	10.69	33.67	16.53	16.42	13.38	12.13	14.00	11.59	NA
Nifty 100 Low Volatility 30 Index	5.18	10.03	32.25	15.82	15.40	11.89	10.39	12.18	13.17	12.45
Nifty Alpha Low Volatility 30 Index	4.10	8.15	27.65	8.03	8.08	8.25	7.18	13.65	16.32	12.61

Source: Kotak AMC

Observing the above table, it is fairly obvious that different indices have performed differently in different years and over different time frames. For instance, Nifty Private Banks Index has outperformed over the 1, 3 & 6 months time frames, but has been the worst performing index in YTD 2020, over the last 1 year and over the past 2 years. In contrast, the Nifty Value 20 Index, which has been amongst the bottom 3 over the 1, 3 & 6 months time frames, has actually outperformed all other indices (barring the Nifty Midcap 150 TYD and over 1 year) over the longer time frames up-to 5 years. It has been the best performing index over 2, 3 and 5 year time periods. The next best performing indices have been Nifty 100 Low Volatility 30 Index and Nifty Alpha Low Volatility 30 Index. If you increase the assessment period to 10 years, Nifty Alpha Low Volatility 30 Index has been the best performing index to date. Even looking at performance from 1st January, 2008, the year of the global financial crisis, the Nifty Alpha Low Volatility 30 Index and Nifty 100 Low Volatility 30 Index have been the best performing indices followed by Nifty Private Banks Index. The Nifty Value 20 Index had not been launched till then.

I have also analysed full year performance for the various indices for all the years between 2010 and 2020 (upto 30th November, 2020), both inclusive.

Index Description	Time Frame Upto 30th November, 2020										
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
BSE Sensex 30 Index	8.30	15.66	7.23	29.56	3.47	-3.68	31.87	10.70	27.99	-23.64	19.14
BSE 500 Index	9.95	8.98	-1.81	37.60	5.15	0.45	38.93	4.93	33.41	-26.42	17.89
BSE Midcap Select Index	14.35	-2.06	-12.53	49.90	9.28	8.72	56.91	-4.03	40.65	-33.25	17.67
Nifty 100	7.73	11.83	2.57	32.88	5.01	-1.26	34.88	7.89	32.51	-24.93	19.28
Nifty 50	7.70	13.48	4.64	30.27	4.39	-3.01	32.90	8.07	29.43	-23.81	19.22
Nifty Bank Index	-7.92	18.94	6.78	41.41	8.47	-8.95	66.16	-7.69	58.44	-31.75	32.01
Nifty Midcap 150	19.04	0.62	-12.62	55.73	6.53	9.70	62.67	-1.28	46.69	-31.01	20.07
Nifty Next 50	8.16	1.62	-7.87	47.73	8.41	8.05	46.35	6.03	49.84	-31.11	18.93
Nifty Private Banks Index	-7.25	16.77	8.61	41.70	8.47	-2.43	69.50	-1.95	69.02	-24.75	36.84
Nifty Value 20 Index	16.53	8.70	10.45	31.84	4.03	-5.71	34.73	14.17	27.11	-20.93	31.22
Nifty 100 Low Volatility 30 Index	15.82	5.22	7.38	30.29	3.12	9.84	36.81	6.56	32.05	-11.98	25.48
Nifty Alpha Low Volatility 30 Index	8.03	5.26	3.92	44.67	9.11	14.38	48.66	16.38	34.90	-12.15	30.57

Source: Kotak AMC

Looking at the above table, it can be easily seen that short-term investing is a mugs game. Personally, I don't see any discernible trend which can help me identify the index which will

perform in the period ahead based on the performance of the adjacent prior period. For e.g. in 2016, BSE Sensex 30 Index was in the bottom 2 with returns of 3.47%, ahead only of Nifty 100 Low Volatility 30 Index with 3.12% returns. However, in 2017, it continued to underperform other indices and was the worst performing index for the period with returns of 29.56%.

Reading the above 2 tables jointly makes a case for a long-term horizon while investing even in case of index investing. A horizon of 5 years and above when investing in any of the above mentioned indices, can generate double digit CAGR returns in almost all cases. In order to remove any timing bias (deliberate or inadvertent), I have also computed 5 year rolling returns for the above indices, which is presented below. In addition, rolling returns for various time periods from 2 years to 10 years have also been provided in the appendix.

Index Description	Time Frame Upto 30th November, 2020						
	2020	2019	2018	2017	2016	2015	2014
BSE Sensex 30 Index	12.48%	9.87%	12.79%	13.52%	13.24%	6.56%	11.19%
BSE 500 Index	11.23%	9.23%	14.67%	16.20%	15.49%	7.53%	11.03%
BSE Midcap Select Index	9.92%	8.82%	19.57%	21.81%	20.27%	8.98%	10.72%
Nifty 100	11.51%	9.59%	13.77%	14.93%	14.86%	7.40%	11.54%
Nifty 50	11.70%	9.39%	12.90%	13.63%	13.48%	6.56%	11.05%
Nifty Bank Index	12.39%	12.14%	19.90%	16.46%	19.14%	8.60%	16.97%
Nifty Midcap 150	11.67%	9.86%	20.94%	23.93%	22.45%	12.26%	14.30%
Nifty Next 50	10.15%	10.13%	18.47%	21.84%	22.19%	11.59%	13.76%
Nifty Private Banks Index	12.57%	13.72%	22.52%	20.04%	24.35%	15.58%	23.67%
Nifty Value 20 Index	13.92%	9.20%	13.99%	14.75%	13.91%	7.83%	15.20%
Nifty 100 Low Volatility 30 Index	11.95%	10.77%	16.74%	16.56%	16.87%	13.23%	16.28%
Nifty Alpha Low Volatility 30 Index	13.28%	14.58%	22.77%	25.58%	23.84%	18.58%	21.77%

Source: Kotak AMC

The above table provides 5-year rolling returns for different calendar years between 2014 and 2020. Looking at the above table, the Nifty Alpha Low Volatility 30 Index has been the most consistent performer across all the years under analysis, followed by Nifty Private Banks Index and Nifty 100 Low Volatility 30 Index.

Index Description	5 YEAR		10 YEAR	
	Std. Dev.	Sharpe Ratio	Std. Dev.	Sharpe Ratio
BSE Sensex 30 Index	10.34	0.43	16.27	0.14
BSE 500 Index	15.05	0.22	19.45	0.10
BSE Midcap Select Index	23.71	0.09	27.23	0.06
Nifty 100	12.17	0.29	17.73	0.12
Nifty 50	10.80	0.34	16.66	0.11
Nifty Bank Index	18.29	0.21	30.67	0.08
Nifty Midcap 150	26.03	0.15	29.01	0.14
Nifty Next 50	21.25	0.12	25.15	0.13
Nifty Private Banks Index	17.93	0.25	31.00	0.20
Nifty Value 20 Index	10.77	0.56	17.24	0.21
Nifty 100 Low Volatility 30 Index	11.12	0.38	14.93	0.35
Nifty Alpha Low Volatility 30 Index	17.16	0.33	18.86	0.44

I have also done above risk-adjusted returns analysis by computing the standard deviation of returns of the different indices which is used to then compute the Sharpe Ratio for the indices. I

have taken 8% as the risk-free rate when computing the Sharpe Ratio. It is an arbitrary number but the conclusions don't change even if a higher or lower risk-free is used in the computation.

Even using this metric of Sharpe Ratio, across both, 5-year and 10-year time horizon, the conclusion remain the same. Across both time frames, the Nifty Value 20 Index, Nifty 100 Low Volatility 30 Index and Nifty Alpha Low Volatility 30 Index generate the best Sharpe Ratios followed by the Nifty Private Banks Index.

Basis the above analysis, my existing portfolio allocation (heavily tilted towards BFSI and private banks) and a time horizon of 5 years, I have shortlisted the following 3 indices as potential targets for ETF investing:

1. Nifty Value 20 Index;
2. Nifty 100 Low Volatility 30 Index; and
3. Nifty Alpha Low Volatility 30 Index.

As already mentioned above, I have excluded Nifty Private Banks Index from further analysis as I am already heavily invested in banks and NBFCs, and I have a desire to tilt my portfolio away from further exclusive exposure to the BFSI segment. However, this is my personal strategy and not a comment on the desirability or otherwise of investing in this index. As can be seen in the different tables, Nifty Private Banks Index has been amongst the top performers across the longer 5 and 10 year time frames also and has also been one of the consistent performers on 5-year rolling returns basis for the different years between 2014 and 2020.

After shortlisting the above 3 indices, I analysed their constituent holdings as I had a desire to further prune down the list and avoid duplicating portfolio by investing in different index strategies with similar holdings. Detailed holdings of the 3 indices are provided on the next page.

Sr. No	Names	Nifty Low Vol 30	Alpha Low Vol 30	Nifty Value 20
1	Bajaj Auto Ltd	✓	✓	✓
2	Hero Motocorp Ltd	✓	x	✓
3	Mahindra & Mahindra Ltd	✓	x	x
4	Bosch Ltd	✓	x	x
5	HDFC Bank Ltd	✓	x	x
6	Kotak Mahindra Bank Ltd	✓	x	x
7	ACC Ltd	✓	x	x
8	Ultratech Cement Ltd	✓	x	x
9	Pidilite Industries Ltd	✓	✓	x
10	Larsen & Toubro Ltd	✓	x	✓
11	Colgate - Palmolive Ltd	✓	✓	x
12	Nestle India Ltd	✓	✓	x
13	Dabur India Ltd	✓	✓	x
14	Asian Paints Ltd	✓	✓	x
15	Hindustan Unilever Ltd	✓	✓	✓
16	Britannia Ind Ltd	✓	✓	x
17	ITC Ltd	✓	x	✓
18	Marico Ltd	✓	✓	x
19	HDFC Ltd	✓	x	x
20	Coal India Ltd	✓	x	✓
21	Reliance Ind Ltd	✓	✓	x
22	Dr Reddy Lab Ltd	✓	✓	x
23	Cipla Ltd	✓	✓	x
24	Power Grid	✓	✓	✓
25	NTPC Ltd	✓	✓	✓
26	TCS	✓	✓	✓
27	Wipro	✓	✓	✓
28	HCL Tech	✓	✓	✓
29	MRF Ltd	x	✓	x
30	Shree Cements	x	✓	x
31	Voltas Ltd	x	✓	x
32	Bata India Ltd	x	✓	x
33	Berger Paints India Ltd	x	✓	x
34	Indraprastha Gas Ltd	x	✓	x
35	Petronet LNG Ltd	x	✓	x
36	Divi's Lab Ltd	x	✓	x
37	Torrent Pharma Ltd	x	✓	x
38	Biocon Ltd	x	✓	x
39	Lupin Ltd	x	✓	x
40	Cadila Healthcare	x	✓	x
41	Torrent Power	x	✓	x
42	Tata Steel	x	x	✓
43	JSW Steel	x	x	✓
44	GAIL	x	x	✓
45	Hindalco Ind Ltd	x	x	✓
46	ONGC	x	x	✓
47	BPCL	x	x	✓
48	India Oil Corp Ltd	x	x	✓
49	Infosys Ltd	x	x	✓
50	Tech Mahindra	x	x	✓

An overview of the overlaps between the 3 indices is provided below:

Names	Nifty Low Vol 30	Alpha Low Vol 30	Nifty Value 20
No. of Holdings	30	30	20
No. of Common Holdings			
Nifty Low Vol 30	x	17	11
Alpha Low Vol 30	17	x	7
Nifty Value 20	11	7	x
No. of Common Holdings %			
Nifty Low Vol 30	x	57%	37%
Alpha Low Vol 30	57%	x	23%
Nifty Value 20	55%	35%	x

Reading into the above table, 28 of 30 stocks of the Nifty Low Vol 30 index are available in the Alpha Low Vol 30 Index and Nifty Value 20 Index, meaning 92% of the index has an overlap with the other 2 indices. Additionally, the index also had exposure to the financial sector with names like HDFC Bank, Kotak Mahindra Bank, HDFC Ltd., and low exposure to the technology (TCS, Wipro and HCL Tech) and pharmaceuticals sectors (Dr. Reddy's Lab and Cipla). However, the Alpha Low Vol 30 index avoided exposure to the financial sector while having more exposure to the technology, pharmaceuticals, FMCG and Consumer Durables Sector.

The Nifty Value 20 Index has an overlap of 18 stocks, most of it with the Nifty Low Vol 30 index. However, the non-overlap portion of the index is composed of stocks in sectors like metals and oil & gas.

Hence, based on the above analysis, I eliminated Nifty Low Vol 30 index and shortlisted Alpha Low Vol 30 Index and Nifty Value 20 Index for passive index investing. This is despite the fact that Nifty Low Vol 30 Index has given higher risk-adjusted returns over a 5 year period than Alpha Low Vol 30 Index. Investing in a combination of Alpha Low Vol 30 and Nifty Value 20 Indices gives ~94% exposure to the constituents of Nifty Low Vol 30 index, while also providing exposure to technology, pharmaceuticals, metals and oil & gas sectors, which are not present in Nifty Low Vol 30 index.

The next step is to identify the actual funds to invest in. Now, there are plenty of fund houses which have created ETFs to track the mainline indices like NSE Nifty, BSE Sensex, Nifty Next 50, Nifty Bank index, etc. However, referring to the NSE website, I was able to find only 2-3 fund houses which have created ETFs which track the shortlisted indices, viz. Alpha Low Vol 30 (actually, I was able to find only 1 fund house which has created an ETF to track this index) and Nifty Value 20 Indices.

As mentioned above, there was only 1 Fund house which provided an ETF tracking the Alpha Low Vol 30 index; i.e. ICICI Prudential Alpha Low Vol 30 ETF. So, the decision to invest here was straight forward.

However, selecting the ETF to invest in for Nifty Value 20 index was not so easy as there were 3 fund houses offering ETFs tracking this index; viz., ICICI Prudential NV20 ETF, Nippon India ETF NV20 and Kotak NV20 ETF. I have provided below key details of these 3 ETFs.

Scheme	Inception Date	AuM (Rs. in Cr.)	Total Expense Ratio (p.a.)	1 Year CAGR	3 Year CAGR	5 Year CAGR	Since Inception	Sharpe Ratio	Tracking Error	Portfolio Beta	Annual Turnover Ratio (x)
ICICI Prudential NV20 ETF	17-06-16	8.01	0.15%	3.76%	10.73%	N.A.	11.49%	0.46	1.49%	1.02	0.86
Nippon India ETF NV20	18-06-15	24.72	0.36%	4.99%	11.34%	10.91%	10.06%	0.13	0.47%	0.98	0.51
Kotak NV20 ETF	08-12-15	11.67	0.14%	3.59%	10.82%	N.A.	12.04%	N.A.	1.04%	N.A.	0.85
Nifty Value 20 - Benchmark	N.A.	N.A.	N.A.	6.71%	12.19%	11.59%	N.A.	N.A.	N.A.	N.A.	N.A.

Source: Respective Factsheets (As of 30th November, 2020)

All of the 3 were launched in broadly similar time frame, but each has shown different performance across different time periods, since inception and against the benchmark. The difference is especially stark in the 1 year period with a range of 3.59% to 4.99%. There could be different reasons for the variation like delay in deploying cash received, inability to fully match the benchmark, maintaining higher cash balance relative to peers, etc. The tracking error of the ETF provides a snapshot of the variation in individual ETF performance relative to the benchmark. Tracking error of ICICI Prudential NV20 ETF is very high at 1.49%, followed by Kotak NV20 ETF at 1.04%. Reading with their respective Annual Turnover Ratios of 0.86x and 0.85x, a conclusion can be derived that both of these ETFs saw large churns in their portfolios during the year, probably due to frequent or large additions/redemptions into/from the ETFs.

In contrast, tracking error of Nippon India ETF NV20 is moderate at 0.47% and Annual Turnover Ratio is lower at 0.51x. The lower tracking error of this ETF is also reflected into the comparatively better period performance of the fund, which has generally been higher in both the 1 year and 3 year periods and closer to the benchmark performance over the 1/3/5 year periods. In fact, it can be noted that as the time period lengthens, the returns of Nippon India ETF NV20 converges closer to the benchmark returns.

Other criteria to look at are the Total Expense Ratio (TER) and the Sharpe Ratio of the individual ETFs. On TER, of the 3, Nippon India ETF NV20 is the most expensive, while the other 2 are equivalent. But ICICI Prudential NV20 ETF delivers a much higher Sharpe Ratio of 0.46 v/s 0.13 for Nippon INDIA ETF NV20. Sharpe Ratio for Kotak NV20 ETF has not been reported by the Fund. The wide variation in the reported Sharpe Ratios could be due to different Risk-Free Returns used by the 2 funds in their computations of the ratio. Hence, one should be careful in using the Sharpe Ratio in arriving at an investing decision.

Basis the TER and Sharpe Ratio, ICICI Prudential NV20 ETF appears to be an obvious choice to invest in. However, the highest tracking error amongst peers, high turnover ratio and a negligible AUM combined with lower 1/3 year returns relative to both peers and benchmark means this choice might not be the most appropriate. After all, the objective is to replicate the

performance of the benchmark with minimal deviation. Similar is the conclusion that can be arrived at for Kotak NV20 ETF also.

Hence, due to its lower tracking error, turnover ratio, larger AUM and closer to benchmark returns performance over different time periods, Nippon India ETF NV20 appears to be the best ETF to invest in.

To conclude, the 2 Funds that I have identified to invest in, considering my current portfolio holdings and the target portfolio composition are ICICI Prudential Alpha Low Vol 30 ETF and Nippon India ETF NV20.

Note: In my initial list of indices, I had also mentioned Nifty 500 and Nifty Smallcap 250 indices. However, I have not provided any analysis for these 2 indices in my note above. The simple reason for this is that, as will be shown in the annexure, both of these indices have been amongst the worst performers across most time periods, whether over 1 year or on rolling returns basis. Hence, I decided to not spend any more time and effort on further analysis of performance of these 2 funds. However, I included these 2 indices in my list as they are major indices used by many investors to track the fortunes of the market.

Annexure Providing Details of Rolling Returns Across Various Time Periods

Index Description	2 Year Rolling Return for											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BSE Sensex 30 Index	-7.00%	44.09%	-5.99%	-2.41%	16.72%	18.53%	11.24%	-1.67%	13.69%	16.76%	10.53%	10.94%
BSE 500 Index	-10.72%	47.22%	-8.45%	-2.22%	16.40%	18.51%	16.73%	1.51%	18.25%	14.78%	2.51%	8.69%
BSE Midcap Select Index								6.53%	30.29%	13.47%	-8.99%	4.27%
Nifty 100	-7.81%	45.23%	-6.70%	-1.32%	17.82%	18.61%	14.17%	0.56%	15.86%	15.28%	6.15%	9.00%
Nifty 50	-7.72%	42.47%	-5.86%	-1.69%	16.58%	17.99%	12.41%	-0.63%	14.48%	15.49%	8.05%	9.63%
Nifty Bank Index	-4.09%	52.22%	-6.33%	3.31%	19.33%	21.73%	22.33%	-2.10%	21.90%	23.47%	12.60%	3.71%
Nifty Midcap 150	-14.83%	56.69%	-11.18%	-0.87%	18.82%	24.18%	32.11%	7.16%	26.81%	15.17%	-6.80%	9.23%
Nifty Next 50	-8.82%	62.03%	-11.06%	0.93%	25.00%	22.47%	24.62%	7.33%	23.77%	14.13%	-4.31%	5.00%
Nifty Private Banks Index	-6.67%	64.18%	0.16%	11.66%	27.38%	26.93%	27.80%	1.42%	22.09%	24.38%	12.39%	3.23%
Nifty Value 20 Index		64.14%	-0.43%	-1.36%	18.04%	21.40%	10.88%	-2.99%	14.40%	18.93%	8.14%	11.15%
Nifty 100 Low Volatility 30 Index	3.96%	51.95%	3.04%	6.03%	16.78%	18.64%	20.75%	4.97%	13.47%	16.01%	5.14%	9.35%
Nifty Alpha Low Volatility 30 Index	-10.91%	42.70%	4.85%	7.18%	21.04%	29.61%	24.21%	10.95%	31.33%	20.45%	3.58%	5.89%
Nifty 500	-9.94%	45.04%	-9.18%	-1.84%	16.88%	19.07%	17.15%	1.58%	18.19%	14.61%	2.38%	8.65%
Nifty Smallcap 250	-23.11%	56.36%	-9.56%	-5.89%	13.30%	24.74%	36.38%	5.34%	25.43%	6.68%	-17.98%	3.44%

Index Description	3 Year Rolling Return for										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BSE Sensex 30 Index	0.43%	16.15%	3.70%	0.93%	21.02%	10.14%	7.95%	7.12%	11.49%	15.81%	9.68%
BSE 500 Index	-2.60%	16.16%	3.48%	-0.68%	22.92%	11.76%	12.20%	11.60%	10.95%	12.33%	4.88%
BSE Midcap Select Index								19.27%	13.50%	7.39%	-2.17%
Nifty 100	-0.04%	16.03%	4.59%	0.93%	22.74%	11.24%	10.44%	9.52%	11.15%	13.54%	6.72%
Nifty 50	0.07%	15.19%	4.38%	0.77%	21.34%	10.20%	9.08%	8.00%	11.07%	14.20%	7.91%
Nifty Bank Index	6.17%	16.04%	11.57%	-1.34%	32.86%	10.43%	16.43%	10.53%	17.15%	21.34%	5.18%
Nifty Midcap 150	-5.16%	18.10%	4.94%	-1.80%	31.21%	18.92%	22.48%	20.60%	11.77%	9.89%	1.19%
Nifty Next 50	-1.01%	21.19%	5.93%	1.94%	31.11%	17.32%	18.44%	18.15%	11.70%	9.45%	0.10%
Nifty Private Banks Index	5.84%	25.71%	19.28%	6.15%	39.68%	16.14%	19.99%	13.17%	17.84%	21.20%	5.37%
Nifty Value 20 Index		27.85%	7.54%	2.63%	22.73%	10.95%	7.68%	6.63%	12.84%	14.64%	10.70%
Nifty 100 Low Volatility 30 Index	9.95%	25.85%	11.41%	5.59%	22.38%	15.15%	13.99%	11.78%	10.99%	11.90%	8.28%
Nifty Alpha Low Volatility 30 Index	0.51%	20.50%	13.70%	7.98%	30.96%	19.13%	23.57%	20.18%	21.07%	14.80%	4.88%
Nifty 500	-2.65%	15.12%	3.10%	-0.31%	23.50%	12.16%	12.48%	11.61%	10.85%	12.19%	4.80%
Nifty Smallcap 250	-8.64%	15.73%	4.54%	-6.63%	29.54%	19.56%	23.40%	20.01%	4.76%	1.57%	-7.88%

Index Description	4 Year Rolling Return for									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BSE Sensex 30 Index	-6.50%	18.58%	4.75%	7.55%	13.95%	7.96%	12.46%	7.15%	12.10%	13.81%
BSE 500 Index	-9.59%	19.98%	3.23%	7.65%	16.56%	9.68%	17.49%	7.94%	10.10%	11.69%
BSE Midcap Select Index								9.95%	8.89%	8.78%
Nifty 100	-7.26%	19.71%	4.85%	8.18%	15.99%	9.21%	15.02%	7.67%	10.90%	12.09%
Nifty 50	-6.80%	18.35%	4.76%	7.70%	14.48%	8.28%	13.44%	7.13%	11.21%	12.53%
Nifty Bank Index	-5.22%	25.40%	5.73%	12.14%	20.83%	9.16%	22.11%	9.94%	17.16%	13.16%
Nifty Midcap 150	-13.03%	24.63%	2.73%	10.95%	25.29%	15.35%	29.43%	11.09%	8.72%	12.16%
Nifty Next 50	-9.95%	27.89%	5.44%	11.18%	24.81%	14.65%	24.20%	10.68%	8.83%	9.47%
Nifty Private Banks Index	-3.32%	35.40%	12.95%	19.05%	27.59%	13.46%	24.91%	12.31%	17.14%	13.31%
Nifty Value 20 Index		27.25%	8.41%	9.43%	14.40%	8.52%	12.62%	7.41%	11.22%	14.98%
Nifty 100 Low Volatility 30 Index	3.50%	26.93%	9.69%	12.16%	18.75%	11.60%	17.06%	10.35%	9.22%	12.63%
Nifty Alpha Low Volatility 30 Index	-3.35%	23.67%	12.65%	17.86%	22.62%	19.92%	27.72%	15.60%	16.63%	12.94%
Nifty 500	-9.56%	19.32%	3.03%	8.11%	17.01%	9.98%	17.67%	7.90%	10.00%	11.59%
Nifty Smallcap 250	-16.61%	21.31%	1.23%	8.35%	24.30%	14.63%	30.79%	6.01%	1.43%	5.05%

Index Description	5 Year Rolling Return for									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	
BSE Sensex 30 Index	-0.72%	16.38%	9.39%	4.94%	11.38%	11.54%	11.39%	8.47%	11.27%	
BSE 500 Index	-2.45%	16.25%	9.25%	5.95%	13.86%	14.32%	13.22%	7.87%	10.04%	
BSE Midcap Select Index								7.04%	9.71%	
Nifty 100	-0.56%	16.75%	9.99%	6.04%	13.34%	13.07%	12.35%	8.16%	10.28%	
Nifty 50	-0.64%	15.75%	9.63%	5.28%	12.02%	11.89%	11.60%	8.02%	10.49%	
Nifty Bank Index	5.02%	17.35%	15.53%	7.52%	17.58%	14.88%	19.19%	11.35%	11.57%	
Nifty Midcap 150	-3.47%	18.38%	12.25%	10.57%	21.00%	22.02%	19.50%	8.79%	10.75%	
Nifty Next 50	-0.23%	22.70%	12.26%	10.47%	21.02%	19.86%	16.70%	8.59%	8.97%	
Nifty Private Banks Index	8.13%	26.38%	22.28%	14.33%	22.89%	18.48%	21.72%	12.86%	11.76%	
Nifty Value 20 Index		23.84%	12.88%	5.85%	11.71%	12.31%	12.05%	7.23%	12.16%	
Nifty 100 Low Volatility 30 Index	8.37%	22.14%	14.24%	11.41%	15.10%	14.47%	14.80%	9.07%	10.33%	
Nifty Alpha Low Volatility 30 Index	3.13%	20.72%	19.81%	14.20%	22.55%	23.87%	22.31%	13.24%	14.75%	
Nifty 500	-2.33%	15.82%	9.21%	6.34%	14.22%	14.54%	13.32%	7.82%	9.96%	
Nifty Smallcap 250	-7.55%	14.75%	12.20%	8.65%	19.25%	21.88%	16.42%	3.06%	4.23%	

Index Description	6 Year Rolling Return for								
	2013	2014	2015	2016	2017	2018	2019	2020	
BSE Sensex 30 Index	0.68%	18.56%	6.87%	4.38%	13.86%	10.81%	11.81%	8.40%	
BSE 500 Index	-1.65%	19.49%	7.54%	5.56%	17.12%	11.36%	12.27%	8.19%	
BSE Midcap Select Index								8.02%	
Nifty 100	0.44%	19.34%	7.87%	5.58%	15.94%	11.20%	11.98%	8.11%	
Nifty 50	0.42%	18.23%	7.25%	4.85%	14.48%	10.63%	11.61%	7.96%	
Nifty Bank Index	2.35%	24.17%	10.99%	7.18%	21.18%	13.74%	18.86%	7.82%	
Nifty Midcap 150	-3.49%	24.48%	11.71%	9.67%	25.79%	15.29%	16.01%	10.47%	
Nifty Next 50	0.45%	26.05%	11.48%	9.88%	24.46%	14.48%	13.86%	8.75%	
Nifty Private Banks Index	5.99%	32.51%	17.70%	12.85%	25.73%	16.99%	20.59%	9.20%	
Nifty Value 20 Index		25.27%	9.23%	5.13%	14.40%	11.89%	11.11%	8.65%	
Nifty 100 Low Volatility 30 Index	7.75%	24.10%	13.26%	9.71%	16.96%	13.05%	12.94%	10.02%	
Nifty Alpha Low Volatility 30 Index	4.18%	25.62%	16.38%	15.51%	25.45%	20.09%	19.11%	12.27%	
Nifty 500	-1.49%	19.24%	7.53%	5.89%	17.40%	11.50%	12.33%	8.15%	
Nifty Smallcap 250	-7.64%	22.44%	11.80%	7.34%	24.68%	11.92%	11.95%	5.14%	

Index Description	7 Year Rolling Return for							
	2014	2015	2016	2017	2018	2019	2020	
BSE Sensex 30 Index	4.44%	14.89%	6.11%	7.36%	12.89%	11.25%	11.26%	
BSE 500 Index	3.13%	16.39%	6.98%	9.33%	14.12%	10.81%	11.91%	
BSE Midcap Select Index								
Nifty 100	4.58%	16.01%	7.21%	8.75%	13.89%	11.05%	11.38%	
Nifty 50	4.36%	14.78%	6.59%	7.83%	13.00%	10.78%	11.04%	
Nifty Bank Index	9.54%	18.75%	10.19%	11.45%	19.23%	14.22%	14.55%	
Nifty Midcap 150	3.73%	22.15%	10.77%	14.99%	19.31%	12.98%	16.47%	
Nifty Next 50	5.78%	23.24%	10.83%	14.12%	19.01%	12.39%	13.23%	
Nifty Private Banks Index	13.20%	26.78%	15.92%	16.49%	23.32%	16.71%	16.13%	
Nifty Value 20 Index		19.99%	8.10%	8.22%	13.73%	11.10%	11.79%	
Nifty 100 Low Volatility 30 Index	11.21%	21.74%	11.51%	12.00%	15.36%	11.72%	13.21%	
Nifty Alpha Low Volatility 30 Index	10.09%	21.70%	17.21%	18.85%	21.95%	17.70%	17.38%	
Nifty 500	3.36%	16.20%	6.98%	9.60%	14.33%	10.92%	11.97%	
Nifty Smallcap 250	0.71%	20.56%	10.19%	13.20%	15.52%	8.84%	12.55%	

Index Description	8 Year Rolling Return for					
	2015	2016	2017	2018	2019	2020
BSE Sensex 30 Index	3.22%	13.14%	8.54%	7.35%	13.02%	10.84%
BSE 500 Index	2.66%	14.72%	10.13%	7.80%	13.29%	10.68%
BSE Midcap Select Index						
Nifty 100	3.71%	14.34%	9.81%	7.93%	13.41%	10.64%
Nifty 50	3.29%	13.20%	9.01%	7.41%	12.83%	10.38%
Nifty Bank Index	7.02%	17.00%	13.63%	11.04%	18.98%	11.14%
Nifty Midcap 150	4.39%	19.90%	15.31%	11.02%	16.71%	13.75%
Nifty Next 50	6.02%	21.09%	14.43%	10.93%	16.55%	12.03%
Nifty Private Banks Index	11.07%	23.94%	18.78%	15.63%	22.25%	13.39%
Nifty Value 20 Index		17.51%	10.50%	8.42%	12.80%	11.70%
Nifty 100 Low Volatility 30 Index	10.86%	19.02%	13.31%	11.25%	13.89%	12.11%
Nifty Alpha Low Volatility 30 Index	8.86%	21.78%	19.95%	16.73%	19.59%	16.37%
Nifty 500	2.87%	14.56%	10.11%	8.01%	13.45%	10.78%
Nifty Smallcap 250	1.81%	17.92%	15.06%	7.17%	12.29%	9.73%

Index Description	9 Year Rolling Return for				
	2016	2017	2018	2019	2020
BSE Sensex 30 Index	3.05%	14.62%	8.39%	8.06%	12.45%
BSE 500 Index	2.77%	16.80%	8.67%	7.77%	12.89%
BSE Midcap Select Index					
Nifty 100	3.67%	15.97%	8.95%	8.17%	12.78%
Nifty 50	3.23%	14.71%	8.51%	7.88%	12.25%
Nifty Bank Index	6.84%	19.44%	13.01%	11.70%	15.60%
Nifty Midcap 150	4.49%	23.17%	11.73%	9.74%	16.99%
Nifty Next 50	6.12%	23.36%	11.55%	9.74%	15.75%
Nifty Private Banks Index	10.47%	25.72%	17.75%	15.57%	18.54%
Nifty Value 20 Index		18.72%	10.42%	8.21%	13.15%
Nifty 100 Low Volatility 30 Index	9.79%	19.85%	12.50%	10.43%	14.00%
Nifty Alpha Low Volatility 30 Index	10.28%	23.78%	17.92%	15.27%	18.18%
Nifty 500	2.96%	16.64%	8.63%	7.95%	13.04%
Nifty Smallcap 250	1.72%	21.62%	9.40%	5.38%	12.72%

Index Description	10 Year Rolling Return for			
	2017	2018	2019	2020
BSE Sensex 30 Index	5.23%	13.86%	8.93%	8.06%
BSE 500 Index	5.60%	14.73%	8.56%	7.97%
BSE Midcap Select Index				
Nifty 100	6.04%	14.53%	9.07%	8.14%
Nifty 50	5.44%	13.66%	8.82%	7.85%
Nifty Bank Index	9.84%	18.27%	13.42%	9.53%
Nifty Midcap 150	8.53%	18.94%	10.50%	10.66%
Nifty Next 50	9.35%	19.66%	10.41%	9.72%
Nifty Private Banks Index	13.19%	24.03%	17.48%	13.04%
Nifty Value 20 Index		17.80%	10.02%	8.96%
Nifty 100 Low Volatility 30 Index	11.38%	18.41%	11.63%	10.87%
Nifty Alpha Low Volatility 30 Index	13.02%	21.51%	16.48%	14.47%
Nifty 500	5.77%	14.57%	8.51%	8.13%
Nifty Smallcap 250	6.15%	15.58%	7.53%	6.41%