



Performance evaluation of selected broad indices in India - A case study from national stock exchange

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Abstract

National stock exchange is one of leading stock exchanges in world and Asia. In India, NSE is fast growing stock exchange in terms of volume and value due to its advance technology and effective and efficient operations. In the present study, the performance of selected broad indices is measured in terms of sector weight and companies weight. The selected indices comprises of Nifty 50, Nifty next 50 and Nifty next 100.

Keywords: Nifty 50, broad indices and index performance

Introduction

National stock exchange is first electronic platform (dematerialized accounts) stock exchange in India established in 1992 which commenced business as wholesale debt market since 1993 and added cash segment shortly. The head office of NSE was in Mumbai of Maharashtra state. NSE is the first exchange in India which offered modern and fully automated screen based electronic trading system for promotion of easy trading for investors spread across the country. NSE plays multi dimensional activities with multiple asset classes, customer segment, and different roles as exchange, regulator, index provider, education provider, market developer and data and analytics. The vision of the NSE is to be a market leader with well-established global presence and facilitation of financial wellbeing of people. The NSE is world 10th largest stock exchange in terms of total market capitalization worth of \$3 trillion. The NIFTY 50 is NSE flagship index used as a barometer of capital market development by domestic and foreign investors. National stock exchange offers market products in equity shares, preference shares, debt instruments, government securities, commodities, derivatives, sovereign bonds and mutual funds. NSE is also world's largest derivatives exchange with 21 percent share in world derivative market.

The present status of NSE is largest exchange in India and derivative exchange in world, second position in currency future segment, eighth position in index future contracts and interest rate options, fourth position in cash segment and single stock future, tenth position in long term interest rate futures and seventh position in single stock options contracts. NSE is governed by SECC Regulations issued by SEBI, SEBI Act, various regulations/ circulars/ guidelines etc. issued there under, RBI directives on foreign exchange trading, interest rate futures trading, debt securities trading, Prevention of Money Laundering Act and several other statutes that govern any employer/ corporate body in the country.

The total number of companies listed in NSE is 1968 as on 2021 with total market capitalization of Rs 2, 02, 95,813 Cr. Since its inception NSE enjoyed market leadership position in Indian stock market, present market share of NSE as on 2021 is 94% in the equity cash market, 100 percent in Equity Futures, 100 percent in Equity Options, 74 percent in Currency Futures and 68 percent in Currency Options for fiscal 2021 on the basis of premium value.

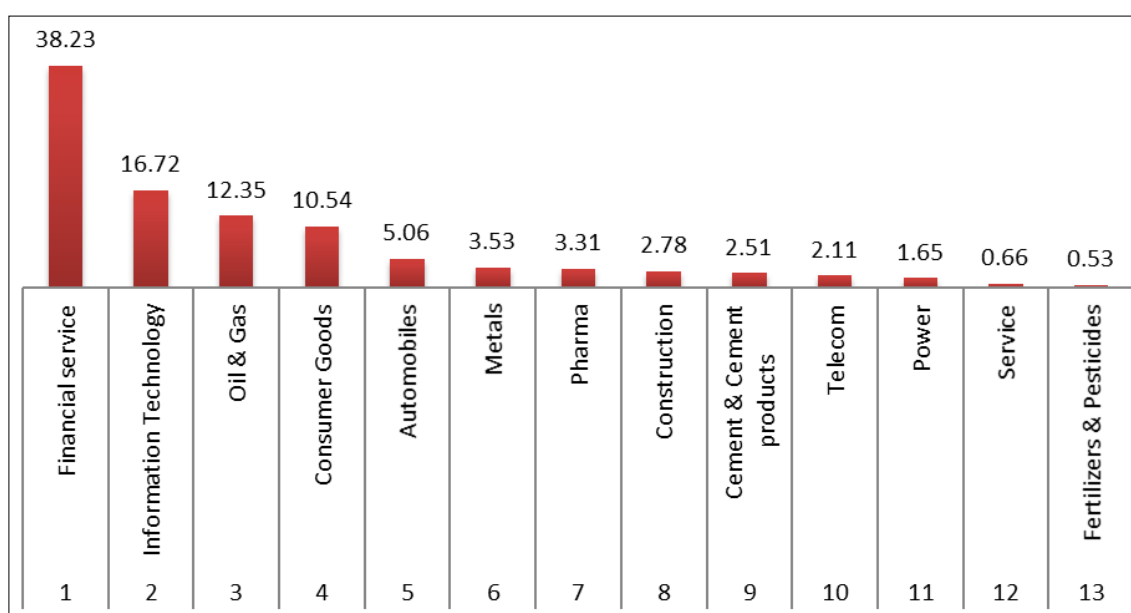
Nifty 50 Index: NIFTY 50 index emerged as torch bearer for Indian stock markets since 1994. This is premier index successfully named as stock of the nation by indicating the pulse of the Indian economy, capital market and investors. The core concept works behind the NIFTY 50 is well diversified portfolio, reliability and liquidity. NIFTY 50 measures the performance of top 50 large cap blue chip companies in terms of free float market capitalization. The review of the index is done for every six months in the year i.e. January and July. NIFTY 50 indicates the conditions of overall stock market. This index was launched on 22nd April 1996 on the base date of 3rd November 1995. The basic value is 1000. Nifty 50 track the performance of 50 blue chip companies representing 13 sectors which accounts to 67 percent of total free float market capitalization and 53 percent of total stock market liquidity. NIFTY 50 index constitution of 50 large cap companies which satisfy the following criteria.

- A large cap company's average impact cost of should be less than or equal to 0.50% or for the last six months in 90% of the observations with basket size of Rs. 100 Million.
- Companies should be permitted under F&O segment.
- The minimum listing history should be six months, however, an IPO company is also eligible after three months if it satisfy above all eligible conditions.

Table 1: Sector Wise Weight of the Index as on 29th October 2021

S. No	Sector	Weight (%)
01	Financial service	38.23
02	Information Technology	16.72
03	Oil & Gas	12.35
04	Consumer Goods	10.54
05	Automobiles	5.06
06	Metals	3.53
07	Pharma	3.31
08	Construction	2.78
09	Cement & Cement products	2.51
10	Telecom	2.11
11	Power	1.65
12	Service	0.66
13	Fertilizers & Pesticides	0.53
	Total	100

Source: NSE Fact Sheet

**Fig 2:** Sector Wise Weight of the Index as on 29th October 2021(%)

Analysis: The study reveals that, Financial service sector has largest weight in the index i.e. 38.28 percent while Fertilizers and pesticides has lowest weight of 0.53 percent. In total index top four sectors (financial services, IT oil& gas and consumable goods) have around 78 percent of weight in total index while rest of nine sector weight is 22 percent of weight. Therefore, the study found that, information regarding these four sectors affects the NIFTY 50 strongly.

Table 2: Top Ten Companies Wight in NIFTY 50

S. No	Name of the Company	Weight (%)
01	Reliance Industries Ltd	10.70
02	HDFC Bank Ltd	9.03
03	Infosys LTd	8.07
04	ICICI Bank Ltd	7.25
05	HDFC	6.70
06	TCS	4.59
07	Kotak Mahindra	3.89
08	HUL	2.79
09	L&T Ltd	2.78
10	Bajaj Finance	2.56
	Total	58.36

Source: NSE Fact Sheet

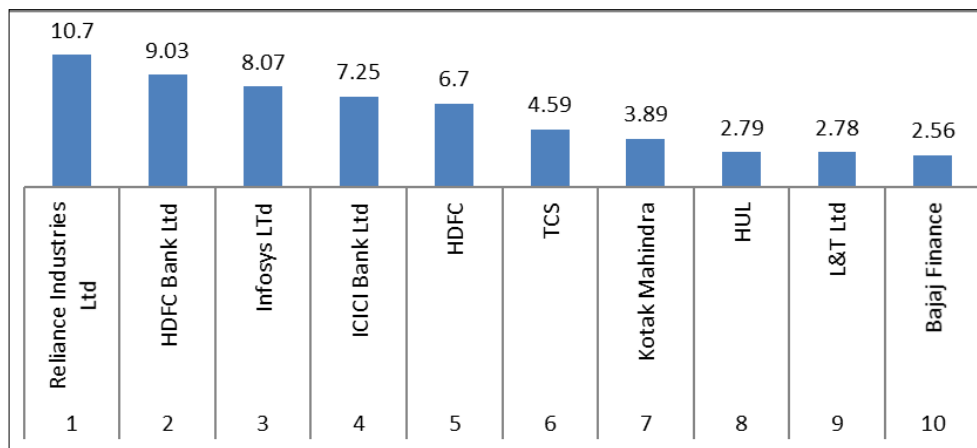


Fig 3: Top Ten Companies Weight in NIFTY 50 (%)

Analysis: The study revealed that, Reliance industry has largest weight in the index i.e. 10.7 percent weight where as Bajaj finance has 2.56 percent of weight. In total 50 companies top ten company's weight is more than total weight.

Technical and Fundamental Analysis of the NSE Nifty 50

- The primary performance indicator is total price index representing the capital gains plus dividend returns of all stocks constitute an index. NSE NIFTY 50 total price return is 27.77 percent on year to date, 53.54 percent for one year and 16.86 percent for five years.
- Another technical indicator of index is standard deviation which indicates the variability in returns from expected returns and denoted by a sigma symbol. The standard deviation of NIFTY 50 is 15.24 percent for one year, 18.23 percent for five years and 23.66 percent from inception.
- The statistical tool of index is beta used to measure the systematic risk/ price movements of a stock or portfolio in relation to market returns. The beta of NIFTY 50 is one since its inception.
- The P/E ratio represents the Current Market Share price divided by earning per share of the company used to measure the level of valuation of the stock (low/high/ fair valuation) in relation to other stock/indices in the same industry. (October 2021) Present P/E ratio of NIFTY 50 is 25.71 which indicate 25 times higher valuation of NIFTY 50 which is historically near to high. This indicates investors are expecting high returns from the market in the near future.
- Another fundamental value measurement tool is P/B ratio Price to Book value which is a standard tool in high volatile market. The value arrives after division of index market capitalization by net worth. The present P/B value of NIFTY 50 is 4.43. In general P/B ratio considers as good for investment where some analysts opined that P/B ratio between 1-3 is also good for investment. On the other hand, P/B ratio below one is sign for under valuation and P/B value above 3 indicates over valuation. Therefore, present P/B value indicates that NIFTY 50 is overvalued.
- Dividend yield is financial tool to measure the return generated by the company/index for investors during a particular period. In general dividend yield in the range of 2-4 indicates strong returns. The current dividend yield of NIFTY 50 is 1.13 percent which indicates good returns only.

NIFTY Next 50

NIFTY Next 50 reflects the 50 companies listed in NIFTY 50 with exclusion of NIFTY50 companies and represents 17 sectors of the economy. These NSE Next 50 companies have 10 percent of weight in total free float market capitalization of total stocks listed in NSE. This index is used as bench mark index, fund portfolio index, ETFs and structured products. The launch date of the index is 24th December 1996 with base date of 04th November 1996. The base value of the index is 1000. The rebalancing period is semi-annual.

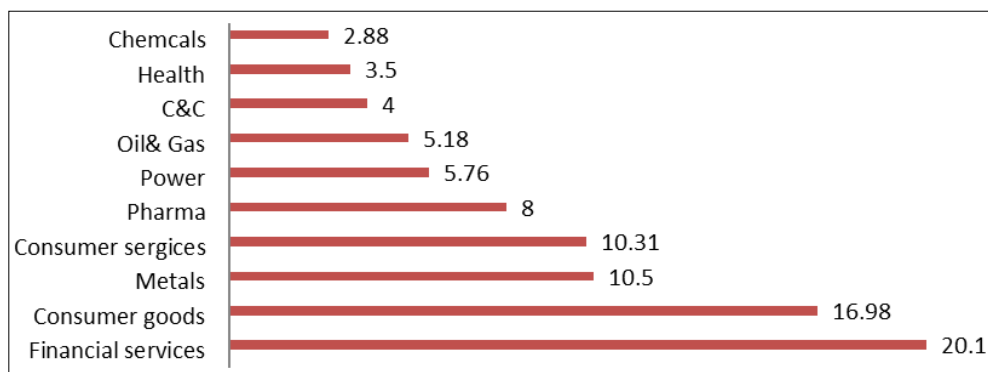
Fundamental and technical analysis of the index: The technical and fundamental analysis of the each index is measure through total returns of index, standard deviation, beta, correlation with other indices, P/E ratio, P/B Ratio and dividend yield. The values are extracted from the fact sheet of each index reported by NSE as on 29th October 2021. This indicates high relevant, reliable and latest data of the index. YTD indicates Year to date which means day from the financial year started (April 1st) to up to the date report.

The total returns of the index are 30.07 percent for Year to Date, 54.81 percent for one year, 12.27 percent for five years and 16.14 percent since inception. This indicates good return for short period. The standard deviation of the index is 15.24 percent for one year and 18.39 percent for five year and 26.51 percent since inception. Similarly, the beta is 0.78 percent for one year, 0.86 percent for five year and 0.95 percent since inception. This indicates that index returns are less than market returns (NIFTY 50). Similarly, the correlation of the index is less than one percent in relation to NIFTY 50. Thereafter, the P/E ratio and P/B value of the index are 25.76 percent and 4.28 times respectively which indicates high valuation of the index. The dividend yield of the index is 1.12 percent.

Table 3: Top Ten Sectors weight in the NIFTY NEXT 50 as on October 29-2021 (%)

	1	2	3	4	5	6	7	8	9	10	Total
Sector	Financial Services	Consumer goods	Metals	Consumer services	Pharma	Power	Oil& Gas	C&C	Health	Chemicals	
Weight	20.10	16.98	10.5	10.31	8	5.76	5.18	4.0	3.50	2.88	87.21

Source: NSE Fact sheet NIFTY NEXT 50

**Fig 4:** Top Ten Sectors weight in the NIFTY NEXT 50 as on October 29-2021 (%)

Analysis: The NIFTY next fifty is represents 50 companies representing 17 sector of the economy. However, top ten sectors account to 87.21 per weight in the index which implies only 12.79 percent of weight by rest of seven sectors. In top ten sectors financial services industry has heavy weight of 20.1 percent where chemicals has 2.88 percent of weight in the index.

Table 4: Weight age Wise Top Ten Companies in the Index (%)

	1	2	3	4	5	6	7	8	9	10	Total
Company	Avenue Supermart	Infoedge	Apollo Hospital	Vedanta Ltd	Adani enterprise	ICIC GIC	Godrej	Adani Trans	pidilite	Adani Green	
Weight	4.17	3.83	3.50	3.23	3.19	3.08	2.95	2.93	2.88	2.83	32.59

Source: NSE Fact sheet NIFTY NEXT 50

**Fig 5:** Top Ten Sectors weight in the Index as on October 29-2021(%)

Analysis

The study revealed that, top ten companies weight in the index is 32.59 percent where rest of forty company's weight is 67.41 percent. In the index Avenue super market has top position with weight of 4.17 percent followed by info edge 3.83 percent and Apollo 3.50 percent weight.

NIFTY Next 100

NIFTY Next 100 reflects the 100 large cap companies listed in NIFTY 500 index and represents 17 sector of the economy. These NSE Next 100 companies have 76.80 percent of weight in total free float market capitalization of total stocks listed in NSE and 66.20 percent in total traded value in NSE. The launch date of the index is 1st December 2005 with base date of 1st January 2003. The base value of the index is 1000. The rebalancing period is semi-annual. This combined portfolio of NIFTY 50 and NIFTY Next 50 companies.

Fundamental and technical analysis of the index: The technical and fundamental analysis of the each index is measure through total returns of index, standard deviation, beta, correlation with other indices, P/E ratio, P/B Ratio and dividend yield. The total returns of the index are 28.17 percent for Year to Date, 53.83 percent for one year, 16.40 percent for five years and 18.24 percent since inception. This is indicates good return for short period. The standard deviation of the index is 14.84 percent for one year and 17.94 percent for five years and

22.33 percent since inception. Similarly, the beta is 0.97 percent for one year, 0.98 percent for five year and 0.99 percent since inception. This indicates that index returns are slightly less than market returns (NIFTY 50). Similarly, the correlation of the index is equal to one percent in relation to NIFTY 50 which index exact relationship. Thereafter, the P/E ratio and P/B value of the index are 25.89 percent and 4.42 times respectively which indicates high valuation of the index. The dividend yield of the index is 1.12 percent.

Table 5: Top Ten Sectors weight of The Nifty Next 100 index as on October 29-2021 (%)

	1	2	3	4	5	6	7	8	9	10	Total
Sector	Financial Services	IT	Consumer goods	Oil& Gas	Automobiles	Metals	Pharma	C&C	Construction	Power	
Weight	35.65	14.65	11.38	11.28	4.50	4.46	3.98	2.70	2.66	2.48	93.74

Source: NSE Fact sheet NIFTY NEXT 50

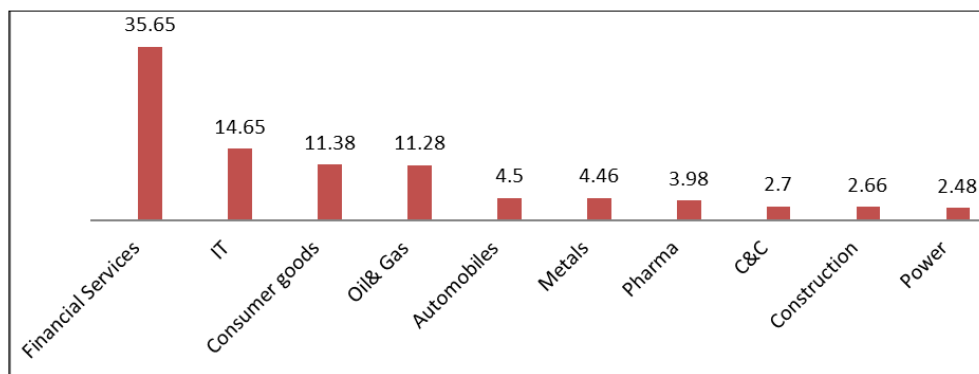


Fig 6: Top Ten Sectors weight of The Nifty Next 100 as on October 29-2021 (%)

Analysis: The NIFTY NEXT 100 represents 100 companies. However, top ten sectors account to 93.74 per weight in the index which implies only 6.26 percent of weight by rest of seven sectors. In top ten sectors financial services industry has heavy weight of 36.65 percent where chemicals has power has 2.48 percent of weight in the index

Table 6: Weight Wise Top Ten Companies in The Nifty Next 100 index (%)

	1	2	3	4	5	6	7	8	9	10	Total
Company	Reliance	HDFC Bank	Infosys	ICICI bank	HDFC-housing	TCS	Kaotak	HUL	L&T	Bajaj finance	
Weight	9.15	7.73	6.90	6.21	5.73	3.93	3.33	2.39	2.38	2.19	49.94

Source: NSE Fact sheet NIFTY NEXT 50

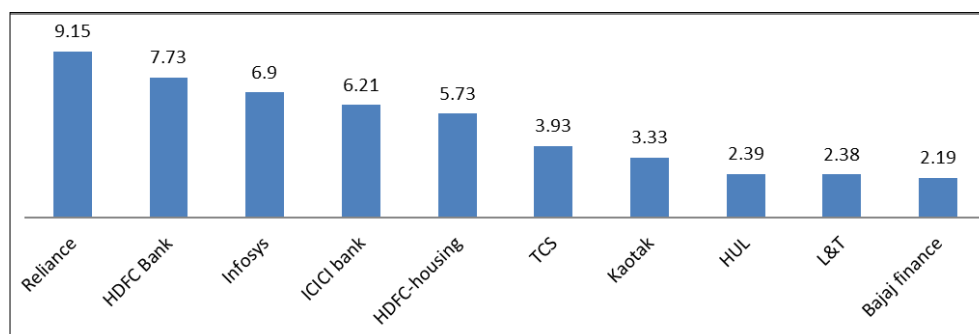


Fig 7: Weight Wise Top Ten Companies in The Nifty Next 100 index (%)

Analysis: The study revealed that, top ten companies weight in the index is 49.94 percent where rest of 90 company's weight is 50.06 percent. In the index Reliance industry has top position with weight of 9.15 percent followed by HDFC bank 7.73 percent and Infosys 6.9 percent weight.

Findings of the Study

- The study also revealed that, market capitalization of the NSE has substantially improved by 2985.19 percent since 2001 which indicates fast growth in stock market.
- The study observed that, NIFTY 50 is the bench mark index for in Indian economy reflecting the performance of top 50 largest, high liquid and actives companies' shares listed in NSE.
- NSE NIFTY 50 was started in 1994 with 50 largest companies representing 13 sectors of the economy. In total weight of index only three sector account to around three fourth of the weight where rest of 10 sector account one third. This indicates that Index was overweight by few sector which indicates high sensitivity of

index as per change in these three sectors. Therefore, the study suggests the reduction of overweight by inclusion of maximum cap restriction in the index for each sector.

- The study also found that, In NIFTY 50 companies only ten companies have weight of 58.36 percent while rest of 40 companies have around 41 percent of share. Particularly, Reliance company has heavy weight of 10 percent in the index. Therefore, the study suggests implement for reduction of ceiling limit of 10 percent one company to reduce impact of few companies on index performance.
- In the present study the fundamental analysis of the each index is done in the parameters of periodical price returns (year to date, one and five years) variability in returns (standard deviation), systematic risk (beta), valuation of index through P/E ratio and P/B ratio, correlation and dividend yield.
- The study found that, NIFTY 50 index returns are 27.77 percent on yield to date, 53.54 percent and 16.86 percent for one and five years respectively which indicates goods returns in short period and poor returns in long run. The standard deviation of the index is 15.24 percent, 18.23 percent and 23.66 percent for one, three and since inceptions which indicates which indicates high variability in returns and high risk of investment. The study also found average beta value of one because it the bench mark index. Thereafter, P/E ration and P/B ratio of the index are 25.71 percent and 4.43 percent respectively and indicating over valuation of index. The dividend yield of the index was 1.13 percent indicating good returns.
- The study revealed that, NIFTY Next 50 comprises of 50 top largest, high liquid and active shares excluding NIFTY 50 shares. This index comprising of 50 companies from 17 sectors. This index was constituted on 24th December 1996. Thereafter, the study found that, NIFTY 50 index returns are 30.07 percent on yield to date, 54.81 percent and 12.27 percent for one and five years respectively which indicates goods returns in short period and poor returns in long run. The standard deviation values of the index are 15.24 percent, 18.39 percent and 26.51 percent for one, three and since inception which indicates which indicates high variability in returns and high risk of investment. The study also found average beta value of less than one indicates low volatile than market (NIFTY 50). Thereafter, P/E ration and P/B ratio of the index are 25.76 percent 4.28 percent respectively and indicating over valuation of index. The dividend yield of the index was 1.12 percent indicating good returns.
- The study four that, NIFTY Next 100 comprises of 10 companies representing 17. This index was constituted on 1st December 2005. Thereafter, the study found that, NIFTY 100 index returns are 28.17 percent on yield to date, 53.83 percent and 16.40 percent for one and five years respectively which indicates goods returns in short period and poor returns in long run. The standard deviation values of the index are 14.84 percent, 17.94 percent and 22.33 percent for one, three and since inception which indicates which indicates moderate variability in returns and moderate risk of investment. The study also found average beta value of less than one indicates low volatile than market (NIFTY 50). Thereafter, P/E ration and P/B ratio of the index are 25.89 percent 4.42 percent respectively and indicating over valuation of index. The dividend yield of the index was 1.12 percent indicating good returns. In this index high weight sector is financial services (35.65 percent) and heavy weight company is Reliance (9.15 percent).

Conclusion

National stock exchange is one of leading stock exchanges in world and Asia. In India, NSE is fast growing stock exchange in terms of volume and value due to its advance technology and effective and efficient operations. In the present study, the performance of selected broad indices is measured in terms of sector weight and companies' weight. The selected indices comprises of Nifty 50, Nifty next 50 and Nifty next 100. The study found that, the selected broad indices reported good growth in the recent period.

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