NIFTY 50

Index Methodology

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Contents

Introduction 3
Eligibility Criteria 4
Index Construction 6
Index Maintenance 7
Index Governance 9
Index Policy 9
Index Calculation formula: 11
Index Variants: 12
Index Dissemination 15
About Us: 16

Introduction

The NIFTY 50 is the flagship index on the National Stock Exchange of India Ltd. (NSE). The Index tracks the behavior of a portfolio of blue chip companies, the largest and most liquid Indian securities. It includes 50 of the approximately 1600 companies listed on the NSE, captures approximately 65% of its float-adjusted market capitalization and is a true reflection of the Indian stock market.

The NIFTY 50 covers major sectors of the Indian economy and offers investment managers exposure to the Indian market in one efficient portfolio. The Index has been trading since April 1996 and is well suited for benchmarking, index funds and index-based derivatives.

The NIFTY 50 is owned and managed by NSE Indices Limited (formerly known as India Index Services & Products Limited-IISL), India's first specialized company focused on an index as a core product.

Highlights

The NIFTY 50 is a 50 stock, float-adjusted market-capitalization weighted index for India. It is used for a variety of purposes, such as benchmarking fund portfolios, index based derivatives and index funds.

The NIFTY 50 is derived from economic research and is created for those interested in investing and trading in Indian equities.

Market Representation. The NIFTY 50 stocks represent about 65% of the total float-adjusted market capitalization of the National Stock Exchange (NSE).

Liquidity. Market impact cost is the best measure of the liquidity of a stock. It accurately reflects the costs faced when actually trading an index. For a stock to qualify for inclusion in the NIFTY 50, it has to reliably have market impact cost below 0.50 %, when doing NIFTY 50 trades of Rupees (Rs) 10 crores.

Trading in derivative contracts based on NIFTY 50

The National Stock Exchange of India Limited (NSE) commenced trading in derivatives with index futures on June 12, 2000. The futures contracts on the NSE are based on the NIFTY 50. The exchange introduced trading on index options based on the NIFTY 50 on June 4, 2001. Additionally, exchange traded derivatives contracts linked to NIFTY 50 are traded at Singapore Exchange Ltd. (SGX), Chicago Mercantile Exchange Inc. (CME) and Osaka Exchange Inc. (OSE), Taiwan Futures Exchange (TAIFEX).

Eligibility Criteria

Domicile:

The company must be domiciled in India and listed on the NSE.

Eligible Securities:

Constituents of NIFTY 100 index that are available for trading in NSE's Futures & Options segment are eligible for inclusion in the NIFTY 50 index.

Differential Voting Rights:

Equity securities with Differential Voting Rights (DVR) are eligible for inclusion in the index subject to fulfilment of criteria given below:

- Market capitalisation criteria is measured at a company level by aggregating the market capitalisation of individual class of security meeting the liquidity criteria for the respective index
- Free float of DVR equity class share should be at least 10% of free-float market capitalization of the company (voting equity class share and DVR equity class share) and 100% free-float market capitalization of last security in respective index
- It should meet liquidity criteria applicable for the respective index
- Upon inclusion of DVRs in index, the index may not have fixed number of securities. For example, if DVR of an existing NIFTY 50 constituent is included in NIFTY 50, the NIFTY index will have 51 securities but continue to have 50 companies
- It is possible that the DVR is eligible for inclusion in the index whereas the full voting rights security class is ineligible. In such scenario, the DVRs shall be included in the index irrespective of whether full voting rights share class is part of index

Selection of the index set is based on the following criteria:

Liquidity:

For inclusion in the index, the security should have traded at an average impact cost of 0.50 % or less during the last six months for 90% of the observations for a portfolio of Rs. 10 crores.

Impact cost is the cost of executing a transaction in a security in proportion to its index weight, measured by market capitalization at any point in time. This is the percentage mark-up suffered while buying/selling the desired quantity of a security compared to its ideal price -- (best buy + best sell)/2.

Float-Adjusted Market Capitalization:

Companies will be eligible for inclusion in NIFTY 50 index provided the average free-float market capitalisation is at least 1.5 times the average free-float market capitalization of the smallest constituent in the index.

Listing History:

A company which comes out with an IPO is eligible for inclusion in the index if it fulfills the normal eligibility criteria for the index - impact cost, float-adjusted market capitalization for a three-month period instead of a six-month period.

At the time of index reconstitution, a company which has undergone a scheme of arrangement for corporate event such as spin-off, capital restructuring etc. would be considered eligible for inclusion in the index if as on the cut-off date for sourcing data of preceding six months for index reconstitution, a company has completed three calendar months of trading period after the stock has traded on ex. basis subject to fulfilment of all eligibility criteria for inclusion in the index.

Trading Frequency:

The company's trading frequency should be 100% in the last six months.

Index Reconstitution:

The index is reconstituted semi-annually considering 6 months data ending January and July respectively. The replacement of stocks in NIFTY 50 (if any) is generally implemented from the first working day after F&O expiry of March and September. In case of any replacement in the index, a four weeks' prior notice is given to the market participants.

Additional index reconstitution may be undertaken in case any of the index constituent undergoes a scheme of arrangement for corporate events such as merger, spin-off, compulsory delisting or suspension etc. The equity shareholders' approval to a scheme of arrangement is considered as a trigger to initiate the exclusion of such stock from the index through additional index reconstitution.

As part of the semi-annual reconstitution of the index, a maximum of 10% of the index size (number of companies in the index) may be changed in a calendar year. However, the limit of maximum 10% change shall not be applicable for any exclusion of a company on account of scheme of arrangement as stated above.

Index Construction

Approaches

The NIFTY 50 is computed using a float-adjusted, market capitalization weighted methodology*, wherein the level of the index reflects the total market value of all the stocks in the index relative to a particular base period. The methodology also takes into account constituent changes in the index and corporate actions such as stock splits, rights issuance, etc., without affecting the index value.

* Beginning June 26, 2009, the NIFTY 50 is being computed using float-adjusted market capitalization weighted method, wherein the level of index reflects the float-adjusted market capitalization of all stocks in the Index.

Currency of Calculation

For the NIFTY 50, all prices are in Indian rupees.

Base Date

The base period for the NIFTY 50 index is November 3, 1995, which marked the completion of one year of operations of NSE's Capital Market Segment. The base value of the index has been set at 1000, and a base capital of Rs 2.06 trillion

Index Maintenance

Rebalancing

Index maintenance plays a crucial role in ensuring the stability of the index, as well as in meeting its objective of being a consistent benchmark of the Indian equity markets.

NSE Indices Limited has constituted an Index Policy Committee, which is involved in the policy and guidelines for managing the NIFTY 50. The Index Maintenance Subcommittee makes all decisions on additions and deletions of companies in the index.

Changes in the index level reflect changes in the market capitalization of the index which are caused by stock price movements in the market. They do not reflect changes in the market capitalization of the index, or of the individual stocks, that are caused by corporate actions such as dividend payments, stock splits, distribution to shareholders, mergers or acquisitions.

When a stock is replaced by another stock in the index, the index divisor is adjusted so the change in index market value that results from the addition and deletion does not change the index level.

Calculation Frequency. The index is calculated real-time on all days that the National Stock Exchange of India is open.

Corporate Actions and Share Updates

Maintaining the NIFTY 50 index includes monitoring and completing the adjustments for company additions and deletions, share changes, stock splits, stock dividends etc. Some corporate actions, such as stock splits and stock dividends, require simple changes in the common shares outstanding and the stock prices of the companies in the index. Other corporate actions, such as share issuances, change the market value of an index and require a divisor adjustment to prevent the value of the index from changing.

Adjusting the divisor for a change in market value leaves the value of the index unaffected by the corporate action. This helps keep the value of the index accurate as a barometer of stock market performance, and ensures that the movement of the index does not reflect the corporate actions of the companies in it. Divisor adjustments are made after the close of trading and after the calculation of the closing value of the index. Any change in the index divisor also affects corresponding sub-indices and divisors. Each sub-index is maintained in the same manner as the headline index.

Corporate actions such as splits, stock dividends, rights offerings, and share changes are applied on the ex-date.

All singular instances of share changes arising out of additional issue of capital, such as ESOPs, QIPs, ADR/GDR issues, private placements, warrant conversions, and FCCB conversions, which have an impact of 5% or more on the issued share capital of the security are implemented as soon as possible after providing a five days' notice period. Share repurchase (buyback) also have the same rules as applicable to share changes.

Changes entailing less than 5% impact on the issued share capital or a free-float are accumulated and implemented from the first working day after F&O expiry of March, June, September and December after providing five working days' prior notice.

Where cumulative share changes exceed 5% of the issued share capital within a quarter, such changes are implemented after providing five working days' prior notice, from the date when such cumulative changes exceeded 5%.

Investible Weight Factors (IWFs):

IWF as the term suggests is a unit of floating stock expressed in terms of a number available for trading and which is not held by the entities having strategic interest in a company. Higher IWF suggest greater number of shares held by the investors as reported under public category within a shareholding pattern reported by each company.

The IWFs for each company in the index are determined based on the public shareholding of the companies as disclosed in the shareholding pattern submitted to the stock exchanges on quarterly basis accumulated and implemented on quarterly basis from March, June, September and December effective after the expiry of the F&O contracts..

The following categories are excluded from the free float factor computation:

- Shareholding of promoter and promoter group
- Government holding in the capacity of strategic investor
- Shares held by promoters through ADR/GDRs.
- Strategic stakes by corporate bodies
- Investments under FDI category
- Equity held by associate/group companies (cross-holdings)
- Employee Welfare Trusts
- Shares under lock-in category

Example: For XYZ Ltd.

	Shares	**%**
Total Shares	1,00,00,000	100.00

	Shares	**%**
Shareholding of promoter and promoter group	19,75,000	19.75
Government holding in the capacity of strategic investor	50,000	0.50
Shares held by promoters through ADR/GDRs.	2,50,000	2.50
Equity held by associate/group companies (cross-holdings)	12,575	0.13
Employee Welfare Trusts	1,45,987	1.46
Shares under lock-in category	14,78,500	14.79

IWF = [1,00,00,000 – (19,75,000 + 50,000 +2,50,000 +12,575 +1,45,987 +14,78,500)] / 1,00,00,000. = **0.61**

Index Governance

Index Committee

A professional team at NSE Indices Limited manages the NIFTY 50. There is a three-tier governance structure comprising the board of directors of NSE Indices Limited, the Index Policy Committee, and the Index Maintenance Subcommittee. NSE Indices Limited has constituted the Index Policy Committee, which is involved in the policy and guidelines for managing the NIFTY 50. The Index Maintenance Sub-committee makes all decisions on additions and deletions of companies in the Index. The NIFTY 50 has fully articulated and professionally implemented rules governing index revisions, corporate actions, etc. These rules are carefully considered, using Indian market conditions, to dovetail with operational problems of index funds and index arbitrageurs.

Index Policy

The NIFTY 50 uses transparent, researched and publicly documented rules for index maintenance. These rules are applied regularly to manage changes to the index. Index reviews are carried out semi-annually to ensure that each security in the index fulfils eligibility criteria.

Announcements

All index-related announcements are posted on the websites of NSE Indices Limited and NSE. Changes impacting the constituent list are also posted on the Web site. Please refer to the www.niftyindices.com and www.nseindia.com.

Holiday Schedule

For the calculation of indices, the NSE Indices Limited follows the official holiday schedule. A complete holiday schedule for the year is available on the NSE Indices Limited and NSE website. Please refer to the www.niftyindices.com and www.nseindia.com.

Real-Time Calculation

The indices are calculated real-time whenever there is a change in price.
A security is traded in full accordance with the present methodology. The best bid price of a security exceeds the last calculated price of the security. The best ask price of a security is less than the last calculated price of the security.

Data Source

Prices of index constituents are sourced from NSE

Index Precision

The level of precision for index calculation is as follows:

- Shares outstanding are expressed in units
- Investible weight factors (IWFs) are expressed in two decimals
- Float-adjusted market capitalization is stated to two decimal places
- Index values are disseminated up to two decimal places

Index Recalculations

All NIFTY family of indices are recalculated whenever errors occur. Users of the NIFTY indices are notified through appropriate channel of communication.

Market Feedback & Index Methodology Review

NSE Indices Limited is committed to ensure that all NIFTY indices are relevant for the market participants. In order to ensure this, NSE Indices Limited on an on-going basis interacts with the stakeholders inviting the feedback through various channels of communication. The feedback received from the market participants forms a key input for all index related aspects.

Review of methodology of NIFTY indices is carried out on an annual basis. Additionally, NSE Indices Limited also considers any feedback that it may receive with regards to index methodology as part of on-going market interactions. Any changes to the index methodology is approved by the Committee and the same is announced through a press release.

Other

In case of a market stress or disruption, NSE Indices Limited will review and deal with the situation on consultative basis with the National Stock Exchange of India Ltd. (NSE) as NSE is source for price data for computation of equity indices.

All indices are expected to reflect the performance of a basket of stocks selected based on the defined guidelines and theme. Every index user is advised to evaluate the benefits of index and take an informed decision before using the index for self or creation of index-linked products. NSE Indices Limited does not accept any liability for any losses, claims, expenses etc. that may be incurred by any person as a result of usage of NIFTY family of indices as a result of reliance of the ground rules, any errors or inaccuracies.

Index Calculation formula:

Price Index Calculations:

The NIFTY 50 is computed using the free-float market capitalisation weighted method wherein the level of the Index reflects the total market value of all the stocks in the Index relative to the base period November 3, 1995. The total market cap of a company or the market capitalisation is the product of market price and the total number of outstanding shares of the company.

Market Capitalization = Shares outstanding * Price

Free Float Market Capitalization = Shares outstanding * Price * IWF

Index Value = Current Market Value / Base Market Capital * Base Index Value (1000)

Base market capital of the Index is the aggregate market capitalisation of each scrip in the Index during the base period. The market cap during the base period is equated to an Index value of 1000 known as the base Index value.

Total Return Index Calculation:

The NIFTY 50 reflects the return one would get if an investment is made in the index portfolio. As the NIFTY 50 is computed in real- time, it takes into account only the stock price movements. However, the price indices do not consider the return from dividend payments of index constituent stocks. Only the capital gains and losses due to price movement are measured by the price index. In order to get a true picture of returns, the dividends received from the index constituent stocks also need to be included in the index movement. Such an index, which includes the dividends received, is called the total return index. The total return index reflects the returns on the index from stock prices fluctuation plus dividend payments by constituent index stocks.

The total return version of the NIFTY 50 index is also available, which assumes dividends are reinvested in the index on the ex-date. Corporate actions like Dividend announcement do not require any adjustment in the normal price index (other than special dividend).

A separate series of index i.e. Total Returns Index (TR) is calculated which shows the returns on Index portfolio, inclusive of dividends.

$$\boldsymbol{TR\ Index} = \ Previous\ TR\ index * \left[1 + \left(\frac{(Today's\ PR\ Index + Indexed\ Dividend)}{Previous\ PR\ Index} - 1\right)\right]$$

Index dividend for the day ‘t’ = Total Dividends of the scrips in the Index / Index divisor for the day

Total dividends of scrips in the Index = Σ (Dividend per share * Modified index shares)

Modified index shares = Total outstanding shares * IWF * Capping Factor (if applicable)

Index Variants:

1. NIFTY50 USD:

NIFTY50 USD, a dollar linked variant of NIFTY 50 index has been constructed as an instrument for measuring returns on their equity investment in the US dollar terms. NIFTY50 USD is NIFTY 50, measured in dollars.

Index value calculation:
Closing value of NIFTY 50 * Exchange rate as on base date/ Exchange rate for the day

Base date of NIFTY50 USD is same as NIFTY 50 i.e. November 3, 1995 and the base index value is 1000 points

Exchange rate as on base date: 34.65

Effective April 3, 2017, WM/Reuters 4 pm FX benchmark USD-INR rate on a daily basis is considered in place of 'INR-USD' reference rate as published by Reserve Bank of India for calculation of daily index value.

2. NIFTY50 Dividend Points:

The NIFTY 50 Dividend Points is a running total of dividend points of the securities forming part of NIFTY 50 Index. It is worth noting that the NIFTY 50 Dividend Points is a passive representation of annual index dividend points. It is not an active index of stocks representing a quantitative dividend based investment strategy.

The index measures the total ordinary dividends paid in the securities forming part of the underlying index since the previous rebalancing date. Indexed dividend of NIFTY 50 Index are dividends paid by index constituents expressed in terms of the level of NIFTY 50 Index.

The NIFTY50 Dividend Points resets to zero every year after the close of the settlement of exchange traded derivative contracts linked to NIFTY 50 Index in the month of March every year (normally the last Thursday in March). It is done to coincide with the expiry of exchange traded derivative contracts linked to NIFTY 50 Index for the month.

The formula for calculating the dividend index on any date (t) for the NIFTY 50 Index is:

Dividend Index (t) = Previous Dividend Index Value (t-1) + Indexed Dividend (t day)

The indexed dividend of the NIFTY 50 Index is calculated by taking the summation of dividend payout (adjusted for free float) specified by index constituents divided by the index divisor on ex-dividend date.

3. NIFTY50 PR 1x Inverse:

The NIFTY50 PR 1x Inverse index aims to provide inverse return of its underlying index. A broader index provides good exposure to an economy, an inverse index on a broader index will provide the desired exposure when the investor is bearish on the markets.

- NIFTY50 PR 1x Inverse Index provides the investor an opportunity to create a position which gives inverse (opposite) returns as compare to NIFTY 50 PR Index.

- The index is designed to provide the inverse performance of the NIFTY 50 PR, representing a short position in the index

Index value calculation:

NIFTY50 PR 1x Inverse Index Value =
Previous day's NIFTY50 PR 1x Inverse Index Value * (1+ NIFTY 50 PR 1x Inverse Index Return)

NIFTY50 PR 1x Inverse Index Return =
-1*((Current NIFTY PR Index Value/previous day NIFTY 50 PR Index Value)-1) + (2*(previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))-(previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))

4. NIFTY50 PR 2x Leverage

NIFTY50 PR 2x Leverage Index is designed to generate multiple time return of the underlying index in situations where the investor borrows funds to generate index exposure beyond his/her cash position.

- NIFTY50 PR 2x Leverage Index seeks twice the index return on a daily basis
- Index is designed to provide magnified exposure to NIFTY 50 PR Index value

Index value calculation:
NIFTY50 PR 2x Leverage Index Value =
Previous day's NIFTY50 PR 2x Leverage Index Value * (1+ NIFTY50 PR 2x Leverage Index Return)

NIFTY50 PR 2x Leverage Index Return =
2*((Current NIFTY 50 PR Index Value/previous day NIFTY 50 PR Index Value)-1)- (previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))

5. NIFTY50 TR 1x Inverse

The NIFTY50 TR 1x Inverse index tries to provide inverse return of its underlying index. A broader index provides good exposure to an economy, an inverse index on a broader index will provide the desired exposure when the investor is bearish on the markets.

- NIFTY50 TR 1x Inverse Index provides the investor an opportunity to create a position which gives inverse (opposite) returns as compare to NIFTY 50 TR Index
- The index is designed to provide the inverse performance of the NIFTY 50 TR, representing a short position in the index

Index value calculation:
NIFTY50 TR 1x Inverse Index Value =
Previous day's NIFTY50 TR 1x Inverse Index Value * (1+ NIFTY50 TR 1x Inverse Index Return)

NIFTY50 TR 1x Inverse Index Return =
-1*((Current NIFTY 50 TR Index Value/previous day NIFTY 50 TR Index Value)-1) + (2*(previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))-(previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))

6. NIFTY50 TR 2x Leverage

The NIFTY50 TR 2x Leverage Index is designed to generate multiple time return of the underlying index in situations where the investor borrows funds to generate index exposure beyond his/her cash position.

- NIFTY50 2x Leverage Index seeks twice the index return on a daily basis
- Index is designed to provide magnified exposure to NIFTY 50

Index value calculation:
NIFTY50 TR 2x Leverage Index Value =
Previous day's NIFTY50 TR 2x Leverage Index Value * (1+ NIFTY50 TR 2x Leverage Index Return)

NIFTY50 TR 2x Leverage Index Return =
2*((Current NIFTY 50 TR Index Value/previous day NIFTY 50 TR Index Value)-1) - (previous days CBLO rate /360)*(diff. in no. of days between today and previous trading day))

7. NIFTY50 Equal Weight

NIFTY50 Equal Weight Index represents an alternative weighting strategy to its market capitalization based parent index, the NIFTY 50 Index. The index includes the same companies as its parent index, however, weighted equally. For more details on this index, kindly refer:

http://www.niftyindices.com/Methodology/NIFTY50_Equal_Weight_Methodology.pdf
https://www.nseindia.com/products/content/equities/indices/strategic_indices.htm

8. NIFTY 50 Arbitrage

The NIFTY 50 Arbitrage Index aims to measure the performance of such arbitrage strategies. The index measures performance of portfolio involving investment in equity and equivalent short position equity futures, short-term debt market investments and cash. For more details on this index, kindly refer:

http://www.niftyindices.com/Methodology/Method_Nifty_50_Arbitrage.pdf
https://www.nseindia.com/products/content/equities/indices/strategic_indices.htm

9. NIFTY 50 Futures

The NIFTY 50 Futures Index is designed to track the performance of NIFTY 50 Futures contract traded on NSE. The index tracks the near month NIFTY 50 index futures contract. The index incorporates roll over from near-month to mid-month contract three days prior to expiry of near month contract.

The NIFTY 50 Futures TR Index is designed to track the performance of total returns from NIFTY 50 Futures contract and investment in risk free instrument. The Index assumes that contract value is invested in risk free instrument (MIBOR) For more details on this index, kindly refer:

http://www.niftyindices.com/Methodology/Method_Nifty_Futures.pdf
https://www.nseindia.com/products/content/equities/indices/strategic_indices.htm

Index Dissemination

Tickers

Index	Bloomberg	Reuters
NIFTY 50	NIFTY	.NSEI

Web site

Daily index values, index constituents, methodology, and press releases are available on www.niftyindices.com and www.nseindia.com.

About Us:

About National Stock Exchange of India Limited (NSE):

The National Stock Exchange of India Ltd. (NSE) is the leading stock exchange in India and the third largest in the world by nos. of trades in equity shares in 2017, according to World Federation of Exchanges (WFE) report. NSE was the first exchange in India to implement electronic or screen based trading. It began operations in 1994 and is ranked as the largest stock exchange in India in terms of total and average daily turnover for equity shares every year since 1995, based on SEBI data. NSE has a fully-integrated business model comprising exchange listings, trading services, clearing and settlement services, indices, market data feeds, technology solutions and financial education offerings. NSE also oversees compliance by trading and clearing members with the rules and regulations of the exchange. NSE is a pioneer in technology and ensures the reliability and performance of its systems through a culture of innovation and investment in technology. NSE believes that the scale and breadth of its products and services, sustained leadership positions across multiple asset classes in India and globally enable it to be highly reactive to market demands and changes and deliver innovation in both trading and non-trading businesses to provide high quality data and services to market participants and clients.

For more information, please visit: www.nseindia.com

About NSE Indices Limited:
(Formerly known as India Index Services & Products Limited-IISL)

NSE Indices Limited, a subsidiary of NSE, provides a variety of indices and index related services for the capital markets. The company focuses on the index as a core product. The company owns and manages a portfolio of indices under the NIFTY brand of NSE, including the flagship index, the NIFTY 50. NIFTY equity indices comprises broad-based benchmark indices, sectoral indices, strategy indices, thematic indices and customised indices. NSE Indices Limited also maintains fixed income indices based on Government of India securities, corporate bonds, money market instruments and hybrid indices. Many investment products based on NIFTY indices have been developed within India and abroad. These include index based derivatives traded on NSE, Singapore Exchange Ltd. (SGX) and Taiwan Futures Exchange (TAIFEX) and a number of index funds and exchange traded funds. The flagship 'NIFTY 50' index is widely tracked and traded as the benchmark for Indian Capital Markets.

For more information, please visit: www.niftyindices.com