



NSE Indices Limited

(Formerly known as India Index Services & Products Limited-IISL)

NIFTY 50 Futures Index - Methodology Document

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Introduction

NIFTY 50 is the benchmark index for the Indian equity market and also most actively traded index on F&O segment of NSE.

To provide a benchmark to track the performance of NIFTY 50 Futures contract, NIFTY 50 Futures Index has been developed. The NIFTY 50 Futures Index will track the near month NIFTY 50 index futures contract.

Two versions of the index has been created with Price return and Total Return.

Methodology

- Index is constructed using the near month NIFTY 50 futures contract (Symbol: NIFTY) traded on NSE
- The near month futures contract expire on last Thursday of each month. Typically, market participants start rolling over the positions to the mid-month contract. Accordingly, index will include mid-month contract 3 days prior to expiry day of contract.
- The weights shall shift from Near to Mid-month contract gradually and by expiry the mid-month contract will have 70% weight in the index as given in below table

Weights	Period before Roll over	Expiry – 3 day	Expiry – 2 day	Expiry – 1 day	Expiry day
Near	100%	75%	60%	45%	30%
Mid	0%	25%	40%	55%	70%

- The percentage shift in weights are based on the 1 year average roll over percentage (rounded to nearest 5%) observed during the expiry week
- The roll over shall be reviewed on semi-annual basis. For example, the average roll over percentage from Jan 2015 – Dec 2015 shall be applicable for index calculation between Jan 2016 to Jun 2016. The average roll over percentage from Jul 2015 –Jun 2016 shall be applicable for index calculation between Jul 2016 to Dec 2016

- Roll over is computed as : $\frac{\text{Open interest in Next month contract}}{\text{Open Interest in (Near month + Next month contract)}} \times 100$
- The index is computed daily at end of day based on the daily settlement price of NIFTY 50 Futures contract.
- Index has a base date of April 01, 2005 and base value of 1000.

Index Calculation

Price Return Index (PR) Calculation:

Price Return index is calculated considering only the daily settlement price of the underlying NIFTY 50 Futures contract.

$$\text{PR Index Value}_{(t)} = \text{Index value}_{(t-1)} \times (1 + \text{PR}_{(t)})$$

$$\text{PR}_{(t)} = \frac{\text{CP}_{(t)}}{\text{CP}_{(t-1)}} - 1$$

Where;

$\text{PR}_{(t)}$ = Price return of the futures contract on current business day

$\text{CP}_{(t)}$ = Daily settlement price of the underlying contract on current business day

$\text{CP}_{(t-1)}$ = Daily settlement price of the underlying contract previous business day

On the day of roll:

The weighted price $\text{CP}_{(t)}$ of the underlying futures contract, is calculated as

$$\text{CP}_{(t)} = \frac{\text{CP(Near)}_{(t)} * \text{Wt1}_{(t)} + \text{CP(Next)}_{(t)} * \text{Wt2}_{(t)}}{\text{CP(Near)}_{(t-1)} * \text{Wt1}_{(t)} + \text{CP(Next)}_{(t-1)} * \text{Wt2}_{(t)}} - 1$$

Where;

$\text{CP (Near)}_{(t)}$ = Price of the near month contract on current business day (t)

$\text{CP (Near)}_{(t-1)}$ = Price of the near month contract on previous business day (t-1)

$\text{CP (Next)}_{(t)}$ = Price of the next month contract on current business day (t)

$CP (Next)_{(t-1)}$ = Price of the next month contract on previous business day (t-1)

$Wt1_{(t)}$ = Weight assigned to near month contract on current business day (t)

$Wt2_{(t)}$ = Weight assigned to next month contract on current business day (t)

Total Return Index (TR) Calculation:

The Total Return index can be used to measure total returns from futures and investment in risk free instrument.

The index uses previous 30 day MIBOR as a risk free instrument for computing the total return index. MIBOR is used as a reference rate in money market.

$$TR \text{ Index Value}_{(t)} = TR \text{ Index value}_{(t-1)} * (1 + TR_{(t)})$$

$$\text{Total Return (TR)} = \text{Price return}_{(t)} + \text{Risk free return}_{(t)}$$

$$\text{Risk free return}_{(t)} = \text{MIBOR}_{(t-1)} \times \frac{\text{Number of days between t and t-1 business days}}{365}$$

Index Governance:

A professional team at NSE Indices Limited manages the NIFTY indices. There is a three-tier governance structure comprising the board of directors of NSE Indices Limited, the Index Policy Committee, and the Index Maintenance Sub-committee. NSE Indices Limited has constituted the Index Policy Committee, which is involved in devising policy and guidelines for managing the NIFTY indices. The Index Maintenance Sub-committee decides on index rebalancing based on the index methodology.

Index Policy

The NIFTY indices 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.

Index Precision

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.

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

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