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

Methodology Document for Equity Indices

January 2024

19. Nifty Smallcap250 Momentum Quality 100

Introduction:

The Nifty Smallcap250 Momentum Quality 100 Index aims to track the performance of the small cap stocks which are selected based on the combination of momentum and quality factors. The momentum score for each company is determined based on its 6-month and 12-month price return, adjusted for volatility. The quality score for each company is determined based on return on equity (ROE), financial leverage (Debt/Equity Ratio) and earning (EPS) growth variability analysed during the previous 5 years.

Highlights

- The index has a base date of April 01, 2005, with a base value of 1000
- Stocks part of the Nifty Smallcap 250 index at the time of review are eligible for inclusion in the index
- Stocks that have scored low on liquidity parameters are excluded from the index
- 100 companies based on the combination of momentum and quality factors are selected to be part of the index
- The weight of each stock in the index is based on the combination of stock's composite momentum - quality score and its free float market capitalization.
- The index is reconstituted semi-annually (June, December)

Index Construction & Review Methodology:

Universe:

- Stocks forming part / going to be a part of the Nifty Smallcap 250 index at the time of review
- Constituents should have a minimum listing history of 1 year

Eligible Universe:

- Stocks forming part of the universe are eligible to be the part of the index subject to following:
  - Non - F&O stocks within Nifty Smallcap 250 index are ineligible for inclusion if the total instances of the stock hitting the upper or lower circuit (price band)* during

the past 6 months as of the cut-off date is more than or equal to 20% of the number of total trading days over the same period

An instance is counted each time the stock hits the upper or lower price circuit on a given trading day. If a stock hits the upper and lower price circuit (price band) on the same trading day, it will be counted as two instances

- o Companies having percentage pledged promotor's shares greater than 20% are ineligible for inclusion in the index.
- o Bottom 10 percentile stocks based on 6 month average daily turnover are ineligible for inclusion in the index
- o Bottom 10 percentile stocks based on Turnover ratio are ineligible for inclusion in the index.

Stock selection criteria:

Factors used for stock selection:

Factor 1: Momentum Factor

- For each eligible stock, Z Score is calculated on the basis of 6-month momentum and 12-month momentum
  - Momentum Ratio for a stock is calculated as:

    $$Momentum\ Ratio = (Price\ Return)/\sigma_p$$

    - 12 month Momentum Ratio (MR_{12}) = 12 month Price return / σ_p
      - 12 month price return (12 M return): [Price (M-1)/Price (M-13)]-1

        Where M is the rebal month, and prices are as of the last trading day of M-1 Month and M-13 Month

      - Std. Deviation (σ_p) : Annualised standard deviation of lognormal daily returns of the stock for 1 year

    - 6 month Momentum Ratio (MR_6) = 6 month Price return / σ_p
      - 6 month price return (6 M return): [Price (M-1)/Price (M-7)]-1

        Where M is the rebal month, and prices are as of the last trading day of M-1 Month and M-7 Month

      - Std. Deviation (σ_p) : Annualised standard deviation of lognormal daily returns of the stock for 1 year

  - Z Score of the Momentum Ratio for each security is calculated:
    - The 12 – month Momentum Z score for each stock is calculated as per the following formula:

      $$[MR_{12} – \mu_{MR,12}]/ \sigma_{MR,12}$$

      Where;
      MR_{12} is the 12 month Momentum Ratio of the stock

$\mu_{MR,12}$ is the mean of the 12 month Momentum Ratios of the eligible universe

$\sigma_{MR,12}$ is the std. deviation of the 12 month Momentum Ratios of the eligible universe

- Similarly, the 6 month Momentum Z score for each stock is calculated as per the following formula:

$$[MR_6 - \mu_{MR,6}]/ \sigma_{MR,6}$$

Where;

MR_6 is the 6 month Momentum Ratio of the stock

$\mu_{MR,6}$ is the mean of the 6 month Momentum Ratios in the eligible universe

$\sigma_{MR,6}$ is the std. deviation of the 6 month Momentum Ratios in the eligible universe

- The Weighted Average Z score is calculated for each eligible stock as per the following formula:
  - Weighted Average Z Score = 50% * (12 month Momentum Z Score) + 50% * (6 month Momentum Z Score)
- The Normalized Momentum Score is calculated for each eligible stock from its Weighted Average Z score as:
  - Normalized Momentum Score = (1+ Wgt. Avg. Z score) if Wgt. Avg. Z score >=0

    (1- Weighted Average Z score)^-1 if Wgt. Avg. Z score < 0
- Percentile Momentum score is calculated from the Normalized Momentum score for every eligible security with security having the highest factor score getting the highest percentile score.

Factor 2: Quality Factor

- For each eligible stock, Z Quality score is calculated on the basis of return on equity (ROE), debt-to-equity (D/E) ratio and EPS growth variability in the previous 5 years. Debt-to-equity ratio is not considered for companies belonging to financial services sector.

- Latest fiscal year data is considered for the calculation of return on equity (ROE) and debt-to-equity (D/E) ratio. EPS growth variability in previous 5 financial years is calculated using adjusted EPS of previous 6 years. Consolidated financial data is used wherever available else standalone financial data is taken into consideration.

  Where,

Y-O-Y EPS growth(n) = $\frac{EPS\,(n)-EPS(n-1)}{EPS\,(n-1)}$ If EPS(n-1) > 0

Y-O-Y EPS growth(n) = $\frac{-(EPS\,(n)-EPS(n-1))}{EPS\,(n-1)}$ If EPS(n-1) < 0

If EPS for year n-1 is 0, EPS growth would be Null for the period n

- Z Quality score of each parameter for each security is calculated as per following formula:

$$(x - \mu)/\,\sigma$$

Where; x is parameter value of the stock

μ is mean value of the parameter in the eligible universe

σ is std. deviation of parameter in the eligible universe

- In case of an IPO, company will be considered for selection, if adjusted EPS data is available to at least calculate EPS growth variability in previous 3 financial years

- Weighted average Z Quality score is calculated for all securities as per the following formula:

For Non-Financial Service sector company:

Weighted average Z Quality score= (1/3) * Z score of ROE + (1/3) * - (Z score of D/E) + (1/3) * - (Z score of EPS growth variability)

For Financial services sector:

Weighted average Z Quality score= 0.5 * Z score of ROE + 0.5*-(Z score of EPS growth variability)

- Quality score is calculated for all eligible securities from the weighted average Z Quality score as

Quality Score = (1+ Average Z Quality score) if Avg. Z Quality score >0

(1-Average Z Quality score)^-1 if Avg. Z Quality score < 0

- Percentile Quality score is calculated from the Quality score for every eligible security with security having the highest factor score getting the highest percentile score.

Stock selection criteria:

- Aggregate Percentile Score= 50% * percentile Momentum score + 50% * percentile Quality score

- Top 100 stocks based on aggregate percentile score are selected to be the part of the index.

Stock weighing methodology:

- Composite Factor Score: 50% * Normalized Momentum score + 50% * Quality score

- Weight of the stock in the index is derived by multiplying the free float market cap with the composite factor score of that stock

- Each stock in the index is capped at 3%

- Capping will be done semi-annually at the time of reconstitution

- The weight of stocks may drift between two rebalancing periods due to movement in the stock prices

Index rebalancing & reconstitution:

- Index rebalancing and reconstitution will be done on a semi-annual basis in June and December using data ending last trading day of May and November respectively

- Stocks that moved out of the Nifty Smallcap 250 index shall also move out of the index at the time of the subsequent review of the Nifty Smallcap250 Momentum Quality 100 index

- If the rank of the eligible stocks within the existing index based on composite percentile score is within top 150 then such stocks would continue to form part of the index

- From the eligible universe, top 50 ranked stocks based on the composite percentile score that are not part of the index shall be compulsorily included in the index replacing the stocks with lowest composite percentile score from the existing portfolio

- If the rank of the stocks within the existing index based on the composite percentile score goes beyond 150 such stocks shall be compulsorily excluded, and they will be replaced by next best stocks based on the composite percentile score within the eligible universe

- In case, the number of stocks within the eligible universe falls below 100, the index shall continue with the available number of stocks within the eligible universe

- Apart from the scheduled semi-annual review, additional ad-hoc reconstitution and rebalancing of the index shall be initiated in case any of the index constituents is removed from Nifty Smallcap 250 index due to any corporate action (scheme of arrangement, delisting etc.) or suspension by the exchange etc.

- Further, on a quarterly basis, indices will be screened for compliance with the portfolio concentration norms for ETFs/ Index Funds announced by SEBI on January 10, 2019. In

case of non-compliance of any of the stated norms, suitable corrective measures such as replacement of ineligible stock, re-alignment of constituent weights will be undertaken depending upon the nature of non-compliance to ensure the compliance with the norms

Also see:

- Index characteristics: **Click here**
- Index reconstitution frequency: **Click here**
- Corporate Actions and Share Updates: **Click here**
- Investible weight factors: **Click here**
- Index Calculation Formula: **Click here**
- Index Factsheet: **Click here**