

Index rulebook

Research analysts

[Japan Index Products](#)

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Key features of the NOMURA-BPI/Extended

- The Nomura Bond Performance Index Extended (NOMURA-BPI/Extended) was developed to reflect the performance of the entire secondary market for publicly offered, yen-denominated, fixed-income bonds rated as equivalent to Triple B or higher issued in Japan.
- The portfolio of bonds that makes up the index (hereafter, the index portfolio) is determined based on given inclusion criteria.
- Securities in the NOMURA-BPI/Extended are classified into eight sectors: JGBs, municipals, government-guaranteed, bank debentures, corporate bonds, Samurai bonds (yen-denominated foreign bonds), MBS and ABS.
- The performance of NOMURA-BPI/Extended is calculated based on the marked-to-market valuation of the bonds that make up the index portfolio.
- The NOMURA-BPI/Extended has sub-index portfolios by sectors and by term to maturity. Their performance indices and portfolio indicators are also released.
- Bonds included in the NOMURA-BPI/Extended are reviewed monthly.

Major rule changes, additions, etc.

[September 27, 2019]

- Relaxation of the exclusion criteria with regard to TOKYO PRO-BOND Market listed bonds
- Established First entry rule

[August 27, 2025]

- Added supplementary explanation regarding the payment method that is excluded from inclusion in "4.1.3 Coupon"
- Added "4.1.8 Legal Grounds for Issuance of Government Bonds"
- Added the item "Digital Bonds" to "4.1.9 Other policies related to eligibility for inclusion"

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1. Introduction

The Nomura Bond Performance Index Extended (NOMURA-BPI/Extended) is a bond performance index that reflects the performance of the entire secondary market for publicly offered, yen-denominated, fixed-income bonds issued in Japan. The Nomura Fiduciary Research & Consulting Co., Ltd. (NFRC)¹ is the Administrator of the NOMURA-BPI/Extended, and Nomura Research Institute, Ltd. (NRI) serves as the Calculation Agent.

NFRC assumes the primary responsibility for the daily calculation of the bond performance indices, as well as their production and operation. Specifically, NFRC, in its role as operations manager:

- Maintains records of the index weightings of all constituents;
- Reviews the index portfolios according to the inclusion/exclusion criteria, and replaces securities in these portfolios as necessary, reflecting these changes in the performance and other indicators; reviews the index portfolio inclusion criteria.
- Announces changes in securities included in the index portfolios, which are determined as a result of daily operations management and scheduled reviews; and
- Distributes the index portfolio performances, either through NRI's data delivery service or on its own.

The NOMURA-BPI/Extended is meant to be used as:

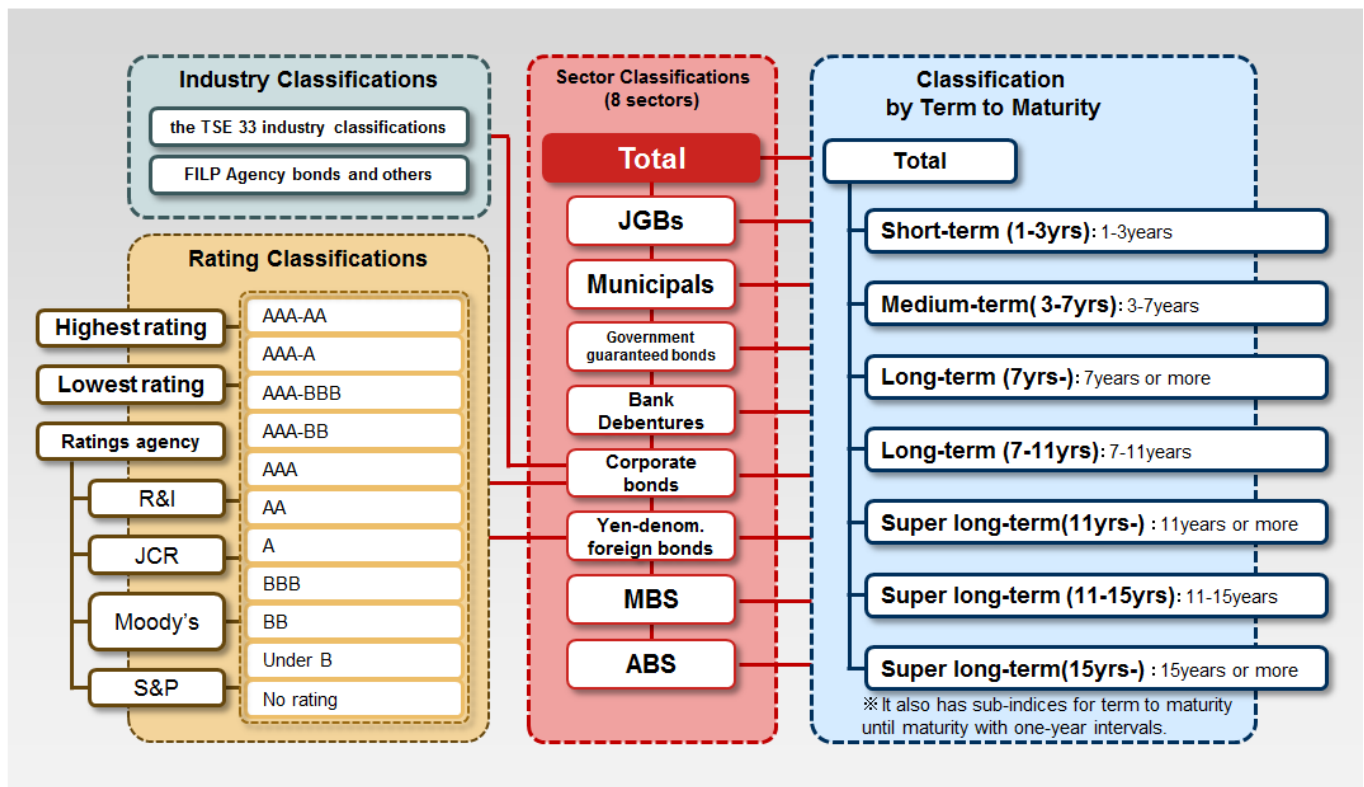
- A tool for determining investment policies (asset allocation strategies);
- A tool for determining investment manager structure;
- An investment management benchmark;
- A tool for portfolio management;
- An investment performance indicator; and
- A risk management tool.

¹ NFRC took over the index business of Nomura Securities Co., Ltd. (NSC), effective 1 February 2023.

2. Sub-indices

The NOMURA-BPI/Extended has sub-index portfolios by sectors, by term to maturity, by industry and by rating. NFRC computes and releases sub-index performance indices and portfolio indicators for each of these portfolios.

Fig. 1: The structure of NOMURA-BPI/Extended



Source: NFRC

The naming rules of the NOMURA-BPI/Extended sub-indices are basically as follows, but exceptions may apply:
 NOMURA-BPI/Extended (Sectors) <Industry> <Rating> <Term to maturity>

(There is a space between each classification. If each <classification> describes "all", the name is optional.)

2.1 NOMURA-BPI/Extended Sectors

Securities in the NOMURA-BPI/Extended are classified into eight sectors (Fig. 1).

- **JGBs**
The portfolio includes bonds issued by the Japanese government. It is further classified into sub-sectors by the term to maturity at the time of the issuance (2 year, 5 year, 10 year and 20 year).
- **Municipals**
The portfolio includes bonds issued by municipal governments and the Japan Finance Organization for Municipalities (including the former Japan Finance Corporation for Municipal Enterprises and the Japan Finance Organization for Municipal Enterprises), but excludes issues whose principal and interest are guaranteed by the Japanese government². Bonds included in this sector are classified into those issued by municipal governments and other issuers. Municipal government bonds are further classified into those issued by the Tokyo Metropolitan government, five major (government-designated) cities and other municipal governments.
- **Government guaranteed bonds**
The portfolio includes bonds issued by public institutions and special corporations whose principal and interest

² These bonds are classified as government-guaranteed bonds.

are guaranteed by the Japanese government³. Government-guaranteed bonds are classified into municipal public corporation bonds and other government-guaranteed bonds.

- **Bank debentures**
The portfolio includes bonds issued by a specific group of financial institutions (generally referred to as publicly-offered bank debentures). The issuance of these bonds is governed by special laws (Long-Term Credit Bank Law and others). Bank debentures are further classified into specific bank debentures⁴ and other bank debentures.
- **Corporate bonds**
The portfolio includes bonds issued by domestic corporations and those issued by public institutions and special corporations whose principal and interest are not guaranteed by the Japanese government. Corporates' sub-indices are classified by their industrial sector and rating.
- **Samurai bonds (yen-denominated foreign bonds)**
The portfolio includes JPY-denominated bonds issued in Japan by non-Japanese issuers. Samurai bonds' sub-indices are classified by their ratings.
- **MBS (Mortgage-Backed Securities)**
The portfolio includes securities backed by real estate loans (mortgages).
- **ABS (Asset-Backed Securities)**
The portfolio includes securities backed by various types of assets. ABS are classified into life insurance fund (capital securities) bonds/subordinated-loan backed bonds, REIT-corporation bonds and securities backed by fiscal-loan funds.

Apart from the sector indices noted above, NOMURA-BPI/Extended has sub-indices such as NOMURA-BPI/Extended excluding JGBs, NOMURA-BPI/Extended excluding specific bank debentures, NOMURA-BPI/Extended excluding ABS, NOMURA-BPI/Extended excluding MBS, and NOMURA-BPI/Extended excluding MBS/ABS.

2.2 Term to maturity

The NOMURA-BPI/Extended is classified into seven sectors based on the number of years remaining until maturity as of the last day of the month (Fig. 2). It also has sub-indices for term to maturity with one-year intervals, between year one and year 40. There are two types of terms to maturity, one based on scheduled redemption and the other based on early redemption. The first is the term until the final redemption date, and the latter is the term to maturity calculated using the weighted average of the future principal cash flow. The NOMURA-BPI/Extended uses the one based on scheduled redemption for classifying bonds by term to maturity.

Fig. 2: Portfolio classification by term to maturity

Classification	Term to maturity (scheduled redemption)
Short-term (1-3)	1 year or more and less than 3 years
Medium-term (3-7)	3 years or more and less than 7 years
Long-term (7-)	7 years or more
Long-term (7-11)	7 years or more and less than 11 years
Super long-term (11-)	11 years or more
Super long-term (11-15)	11 years or more and less than 15 years
Super long-term (15-)	15 years or more

Source: NFRC

³ Public institution bonds and specific corporation bonds whose principal and interest are not guaranteed by the Japanese government are classified as corporate bonds.

⁴ Specific bank debentures are those rated BBB or lower by all of the four rating agencies as of the portfolio determination date. For bank debentures that are not rated, ratings assigned to the financial institution's senior bonds or its issuer ratings are referenced.

2.3 Corporate bonds industry classifications

Corporate bonds are classified by industry, based on 34 classifications (i.e., the TSE33 industry classifications and FILP Agency bond and others sector⁵) (Fig. 3).

Fig. 3: NOMURA-BPI/Extended corporates industry classifications

Fishery, Agriculture & Forestry	Mining
Construction	Foods
Textiles & Apparels	Pulp & Paper
Chemicals	Pharmaceutical
Oil & Coal Products	Rubber Products
Glass & Ceramics Products	Iron & Steel
Nonferrous Metals	Metal Products
Machinery	Electric Appliances
Transportation Equipment	Precision Instruments
Other Products	Electric Power & Gas
Land Transportation	Marine Transportation
Air Transportation	Warehousing & Harbor Transportation Services
Information & Communication	Wholesale Trade
Retail Trade	Banks
Securities	Insurance
Other Financing Business	Real Estate
Services	FILP Agency bonds ⁶ and others

Source: NFRC

⁵ FLIP stands for "Fiscal Investment and Loan Program"

⁶ Bonds issued by a corporation that is subject to governing law for incorporation and not listed in the stock market.

2.4 Credit Rating (corporate bonds and Samurai bonds)

2.4.1 Classification by rating

Corporate bonds and Samurai bonds included in the NOMURA-BPI/Extended are classified into sub-indices by their ratings. The classification refers to the individual issue rating, not to issuer rating (Fig. 4). For bonds that are not rated by a rating agency, the classification may refer to deemed rating. Long-term senior debt ratings and issuer ratings are not considered in the classification.

- Deemed rating in NOMURA-BPI/Extended

For bonds that are not rated by a rating agency, NFRC will deem a bond to have been assigned a rating equivalent to that assigned to other debt by a rating agency (hereafter, deemed rating) provided that all of the following conditions are met and/or followed:

- The assigned rating and the deemed rating must both apply to bonds from the same issuer
- The assigned rating and the deemed rating must both apply to bonds issued under the same terms (i.e., with regard to the presence or absence of financial covenants or credit enhancements)⁷
- The deemed rating must be attributed to the same rating agency that rated the referenced bonds
- The rated bonds referenced must have one year or longer remaining until the term to maturity (scheduled redemption)

Deemed rating are referred to as “X-equivalent.”

⁷ In-substance defeasance issues are grouped separately from unsecured senior debt from the same issuer.

Fig. 4: Rating classifications

Sector	Criteria for assigning rating	Classification
Corporate bonds	<ul style="list-style-type: none"> • Highest rating • Lowest rating • R&I rating • JCR rating • Moody's rating • S&P rating 	AAA--AA-equivalent AAA--A AAA--BBB AAA--BB AAA AA A BBB BB Under B No rating
Samurai bonds	<ul style="list-style-type: none"> • Highest rating • Lowest rating • R&I rating • JCR rating • Moody's rating • S&P rating 	AAA--AA AAA--A AAA--BBB AAA--BB AAA AA A BBB BB Under B No rating
Corporate bonds & Samurai bonds	<ul style="list-style-type: none"> • Highest rating 	AAA--AA AAA--A AAA--BBB AAA AA A BBB

Source: NFRC

2.4.2 Criteria for assigning rating

- Classification by highest rating⁸
The classification refers to the highest of the ratings assigned by R&I, JCR, Moody's and S&P.
- Classification by lowest rating
The classification refers to the lowest of the ratings assigned by R&I, JCR, Moody's and S&P.
- Classification by a rating agency
The classification refers to ratings among those assigned by the same rating agency.

⁸ If the classification of criteria for assigning rating is "the highest rating", only "AAA-AA", "AAA-A", "AAA-BBB", "AAA", "AA", "A", and "BBB" fall under its category.

3. Scheduled portfolio reconstitution

NFRC reviews and reconstitutes the NOMURA-BPI/Extended portfolios every month. Next month's portfolios are determined on the portfolio determination day of each month.

3.1 Scheduled reconstitution date

NOMURA-BPI/Extended portfolios are reconstituted on the first business day of the month (scheduled reconstitution date), with the inclusion/exclusion implemented after the bond market closes on the business day before the scheduled reconstitution date.

3.2 Portfolio determination date

In principle, next month's portfolio determination date is one of the following dates, whichever is the earlier:

- The business day after the 25th day of the month
- The three business days before the last business day of the month

However, the portfolio determination date may be changed if a JGB auction that may have a non-negligible impact is held between the day after the determination date and the last day of the month. Any such changes will be announced in advance.

3.3 Scheduled reconstitution base date

Next month's portfolio base is determined on the day before the portfolio determination date. The new portfolio structure is determined on the portfolio determination date based on disclosed information available as of the scheduled reconstitution base date.

3.4 Portfolio reconstitution announcement

Information about scheduled portfolio reconstitution is announced through NRI's data delivery service and other media, except in cases where definite information on new portfolios is unavailable due to unexpected circumstances.

4. Portfolio inclusion/exclusion criteria

4.1 Portfolio inclusion criteria for next month⁹

The NOMURA-BPI/Extended incorporates all securities that meet the inclusion criteria listed in Fig. 5 as of the scheduled reconstitution base date into the index portfolios for the following month.

Fig. 5: NOMURA-BPI/Extended inclusion criteria

Issuance process	Publicly offered bonds issued in Japan	
Currency denomination	JPY	
Coupon	Fixed	
Outstanding face value	JPY1 billion or more	
Term to maturity (scheduled redemption)	1 year or more	
Rating	JGBs, municipals bonds, Government-guaranteed bonds, bank debentures	... No rating criteria
	Corporate bonds, Samurai bonds, MBS, ABS	... Equivalent to triple-B or higher
Issue date	JGBs	Issues until the portfolio determination date ¹⁰
	Bank debentures	Issues until the last day of the month two months before the portfolio determination date
	Others	Issues until the last day of the month prior to the portfolio determination date

Source: NFRC

4.1.1 Issuance process

The NOMURA-BPI/Extended is designed to reflect the performance of all publicly offered bonds issued in Japan. However, it excludes the following types of bonds from the pool of eligible securities:

- JGBs not publicly offered in the market (i.e., JGBs tailored for retail investors and sold New OTC sales system, those issued for BOJ Rollover)
- JGBs for Subscription/Contribution
- Corporate bonds offered specifically to retail investors
- Municipal bonds issued specifically to local residents (mini municipal bonds)
- Convertible bonds, warrant bonds
- Collateralized bond obligations (CBO), Collateralized loan obligation (CLO)
- MBS that fall in neither JHF MBS nor GHLC MBS, both of which are issued by the Japan Housing Finance Agency (JHF; formerly the Government Housing Loan Corporation, or GHLC)
- ABS that do not fall into any of these categories; life insurance fund bonds, life insurance subordinate loan ABS, investment corporation bonds and FILP ABS
- Bonds listed in TOKYO PRO-BOND Market and subject to disclosure rules of the Financial Instruments and Exchange Act, namely the securities that are not subject to the disclosure exemption stated in Article 3 of the Financial Instruments and Exchange Act.

4.1.2 Currency denomination

The NOMURA-BPI/Extended includes JPY-denominated bonds in terms of payment, principal and interest

⁹ The NOMURA-BPI/Extended is an index measuring the performance of the entire secondary bond market, and the inclusion criteria have been revised based on changes in the market environment. Please see Appendix 2 for more details on changes in the inclusion criteria.

¹⁰ This rule will be implemented from the April 2018 portfolio reconstitution date. Until then, JGB issues until the last day of the month of the portfolio determination date will be eligible for the following month's index portfolio inclusion.

payment.

4.1.3 Coupon

The NOMURA-BPI/Extended only covers fixed-coupon bonds (i.e., coupon payments remain unchanged from the issuance until maturity). However, it does not include the following types of bonds:

- Step-up bonds
- Fixed-to-Float (issued as fixed-coupon bonds, with coupon payments changed to variable from the first call date)
- Discount bonds
- Deferred interest bonds (that have no interest payments before maturity, with both principal and interest paid in a lump sum at maturity)
- Deferrable bonds (that comes with a deferred payment provision regarding principal or interest)
- Perpetual bonds

4.1.4 Outstanding face value

The NOMURA-BPI/Extended only includes bonds with an outstanding face value amount¹¹ of JPY1bn or more as of the last business day of the month following the scheduled reconstitution base date.

4.1.5 Term to maturity (scheduled redemption)

The NOMURA-BPI/Extended only includes bonds that are dated 365 days or more after the last day of the month following the scheduled reconstitution base date to the full redemption date. February 29 is also counted in.

4.1.6 Rating

For corporate bonds, Samurai bonds, MBS and ABS, a rating equivalent to triple-B or higher in terms of their highest ratings as of the scheduled reconstitution base date is required for inclusion in the NOMURA-BPI/Extended index portfolio. Please see “2.4 Credit Rating (corporate bonds and Samurai bonds)” for more details on rating requirements.

4.1.7 Issue date

Inclusion criteria in terms of issue date are as follows:

- JGBs: Issues until the portfolio determination date¹²
- Bank debentures: Issues until the last day of the month two months before the portfolio determination date
- Other bonds: Issues until the last day of the month before the portfolio determination date

4.1.8 Legal Grounds for Issuance of Government Bonds

The legal grounds for the issuance of government bonds are not taken into account in the selection of bonds.

4.1.9 Other policies related to eligibility for inclusion

- Subordinate bonds
The difference between senior and subordinated bonds is not taken into account in selecting bonds.
- Basel III-compliant bonds
The presence or absence of bail-in clauses and/or write-off clauses for non-viability is not considered in the selection of bonds.
- Callable/puttable bonds
The presence or absence of callable clause, prepayment clause or puttable clauses is not considered in the selection of bonds.
- Digital bonds
The fact that a security is applied to an electronically recorded transferable rights is not considered in the selection of securities.

¹¹ Additional issuance after the portfolio determination date is disregarded.

¹² This rule will be implemented from the May 2018 portfolio determination day (24 April, 2018). Until then, JGB issues until the last day of the month of the portfolio determination date will be eligible for the following month's index portfolio inclusion.

4.1.10 First Entry Rule

As a general rule, for bonds whose eligibility cannot be determined by the inclusion criteria set forth in this rule book, an investigation is conducted within a certain monitoring period from the issue date of the relevant bond, and whether or not they are to be included is determined. Announcements are made before and after the monitoring period. However, if public information, such as laws or regulation changes, clarifies the rationality for inclusion of the relevant bond, an announcement will be made without setting a monitoring period.

4.1.11 Other potential for inclusion

If an event that is material in terms of portfolio inclusion occurs after the portfolio determination date, the issue in question may be included in the next-month portfolio. Any such change would be announced in advance.

4.2 Portfolio exclusion criteria for next month

Any issues that fall short of the inclusion criteria (Fig. 5: NOMURA-BPI/Extended inclusion criteria) as of the scheduled reconstitution base date will be excluded from the index portfolio in the following month.

Listed below are specific criteria for exclusion from the index portfolio.

4.2.1 Outstanding face value

Debt issues whose outstanding face value amount¹³ will decrease to levels below JPY1bn on the last business day of the month following the scheduled reconstitution base date will be excluded from the index portfolio.

For JHF (GHLC) MBS sector, the remaining face value amount of issue i at the last business day of the next month is calculated based on an actual factor¹⁴ and a rescheduled factor¹⁵, which are announced by the JHF:

$$\begin{aligned} \text{Remaining face value amount}_i \text{ (last business day of next month)} \\ = \text{Original face value amount}_i \times \text{Actual factor}_i \text{ (next month)} \end{aligned}$$

For issues for which the next month actual factor information is not available by the scheduled reconstitution base date, the remaining face value amount at the last business day of the next month is calculated using a projected scheduled factor for the next month defined as below:

$$\begin{aligned} \text{Projected scheduled factor}_i \text{ (next month)} &= \text{Actual factor (this month)}_i \times \frac{\text{Rescheduled factor}_i \text{ (next month)}}{\text{Rescheduled factor}_i \text{ (this month)}} \\ \text{Remaining face value amount}_i \text{ (last business day of next month)} \\ &= \text{Original face value amount}_i \times \text{projected scheduled factor}_i \text{ (next month)} \end{aligned}$$

In addition, the projected scheduled factor (i) of the next month sets to 0 % when the next month corresponds to the clean-up call month (April or October) of the MBS issue (i), and its actual factor (i) of this month (March or September) becomes 10% or less at the scheduled reconstitution base date.

4.2.2 Term to maturity (scheduled redemption)

The NOMURA-BPI/Extended excludes bonds that are dated less than 365 days until scheduled redemption as of the last day of the month following the scheduled reconstitution base date¹⁶.

¹³ Additional issuance after the portfolio determination date is disregarded.

¹⁴ For MBS, the actual factor indicates the ratio of remaining principal to the original face amount (the projected repayment amount of the current month is considered). Data on actual factor for the next month are announced on the 25th of every month (or the prior business day if the 25th is a weekend or holiday), provided by each MBS issue on the JHF website.

¹⁵ The rescheduled factor indicates the ratio of remaining principal to the original face amount, which is updated every six months by reflecting repayment progress since issuance. The rescheduled factor for each MBS issue is announced on the JHF website on the 25th of every month (or the prior business day if the 25th is a weekend or holiday).

¹⁶ In accordance with business practice, bonds with less than one year remaining to maturity consider leap days, while bonds with more than one year to maturity do not count occurrences of February 29 in the interval.

4.2.3 Ratings

For corporate bonds, Samurai bonds, MBS and ABS, bonds that have lost all their Triple B grade (i.e., downgraded to Double B or lower) in terms of their highest ratings as of the scheduled reconstitution base date would be excluded from the NOMURA-BPI/Extended index portfolio. Please see “2.4 Credit Rating (corporate bonds and Samurai bonds)” for more details on rating requirements.

4.2.4 Other potential for exclusion

If a full early redemption and/or a default – and/or a similar material credit event – occurs after the portfolio determination date, the issue in question may be excluded from the next month index portfolio. Any such change would be announced in advance.

5. Unscheduled portfolio reconstitution

In principle, index portfolios for the next month, as determined on the portfolio determination date, will remain unchanged. However, these planned portfolios may be subject to an unscheduled reconstitution, which will be implemented between the portfolio determination date and the last business day of the month, if NFRC become aware that a security in the portfolios for the next month comes to meet any of the following categories:

5.1 Exclusion of defaulted debt and fully called bonds

Default

In the event of a default, the debt issue concerned would be removed from the NOMURA-BPI/Extended index portfolio the first business day after its last trading day.

Full early redemption

Callable bonds are excluded from the index portfolio on the day they are called fully.

5.2 Other criteria for unscheduled reconstitution

A material event other than these explained in 5.1 Exclusion of defaulted debt and fully called bonds may lead to an unscheduled portfolio reconstitution. Any such change would be announced in advance.

5.3 Announcement of unscheduled portfolio reconstitution

Information about unscheduled portfolio reconstitution is announced through NRI's data delivery service and other media, except in cases where definite information on such a change is unavailable until that actually takes place due to unexpected circumstances.

6. Calculating index value

6.1 Method for calculating index

6.1.1 Total investment return index (Total index)

This is an index of investment returns including capital and income gains. Assuming the index portfolio was purchased on the last business day of the previous month at a value including accrued interest, coupon payments and redemptions are added the market value amount (including accrued interest), which is announced as the index value for the day. All coupon payments and redemptions are assumed to be received in cash without interest on the day they are made, and reinvested at the following portfolio reconstitution. Coupon payments made on weekends and holidays are assumed to be made on the following business days.

$$BPI_{(today)} = BPI_{(e.l.m.)} \times \frac{MVLt_{(today)} + CF_{(e.l.m.,today)}}{MVLt_{(e.l.m.)}}$$

Where

$$MVLt_{(t)} = P_{(t)} \times Amount_{(t)} \times \frac{1}{100}$$

$BPI_{(today)}$: Total index value, today
$BPI_{(e.l.m.)}$: Total index value, the last business day of the previous month
$MVLt_{(today)}$: Market value amount (including accrued interest) of index portfolio, today
$MVLt_{(e.l.m.)}$: Market value amount (including accrued interest) of index portfolio, the last business day of the previous month
$CF_{(e.l.m.,today)}$: Total income gains and redemptions paid from the last business day of the previous month through today
$P_{(t)}$: Dirty price as of t
$Amount_{(t)}$: Outstanding face value amount as of t

6.1.2 Capital investment return index (Capital index)

This is an index of investment return in terms of capital gains. Assuming that the index portfolio was purchased on the last business day of the previous month at the “dirty price”, redemptions are added at the market value amount (excluding accrued interest). All redemptions are assumed to be received in cash without interest on the day they are made, and reinvested at the following portfolio reconstitution.

$$BPIc_{(today)} = BPIc_{(e.l.m.)} \times \left(1 + \frac{MVLc_{(today)} - MVLc_{(e.l.m.)} + RD_{(e.l.m.,today)}}{MVLt_{(e.l.m.)}} \right)$$

Provided that:

$$MVLc_{(t)} = CP_{(t)} \times Amount_{(t)} \times \frac{1}{100}$$

$BPIc_{(today)}$: Capital index value, today
$BPIc_{(e.l.m)}$: Capital index value, the last business day of the previous month
$MVLC_{(today)}$: Market value amount (excluding accrued interest) of index portfolio, today
$MVLC_{(e.l.m)}$: Market value amount (excluding accrued interest) of index portfolio, the last business day of the previous month
$MVLT_{(e.l.m)}$: Market value amount (including accrued interest) of index portfolio, the last business day of the previous month
$RD_{(e.l.m,today)}$: Mid-term redemptions arising from the last business day of the previous month through today
$CP_{(t)}$: Clean price as of t
$Amount_{(t)}$: Outstanding face value amount as of t

6.2 Return¹⁷

6.2.1 Total return (annualized)

$$Rt(m,n) = \left(\frac{BPI(n)}{BPI(m)} - 1 \right) \times \frac{365}{\Delta t_D}$$

Time m is assumed to precede time n in a given timeline.

$Rt(m,n)$: Total return from time m through time n
$BPI(i)$: Index value as of t
$\Delta t_D (> 0)$: Days between time m and time n (excluding the settlement date)

6.2.2 Capital return (annualized)

$$Rc(m,n) = \left(\frac{BPIc(n)}{BPIc(m)} - 1 \right) \times \frac{365}{\Delta t_D}$$

Time m is assumed to precede time n in a given timeline.

$Rc(m,n)$: Capital return from time m through time n
$BPIc(t)$: Principal investment return index as of t
$\Delta t_D (> 0)$: Days between time m and time n (excluding the settlement date)

6.2.3 Income return (annualized)

$$Ri(m,n) = Rt(m,n) - Rc(m,n)$$

Time m is assumed to precede time n in a given timeline.

$Ri(m,n)$: Income return from time m through time n
$Rt(m,n)$: Total return from time m through time n
$Rc(m,n)$: Capital return from time m through time n

¹⁷ Only monthly data were created for investment return before 30 September 1993.

6.3 Reference for obtaining market data

The NOMURA-BPI/Extended references bond market pricing data for the marked-to-market valuation of the index portfolios (listed in descending order of priority):

- ✓ JS Price
- ✓ Nomura price

These data are provided on a settlement-day basis, and should be converted to traded-day basis data for use as reference in calculating portfolio and performance indicators.

JS Price is jointly developed and managed by Nikkei Inc., Nikkei Financial Technology Research Institute, Inc., NRI and Nomura Securities Co., Ltd. (NSC) to price bonds for mark-to-market accounting. JS Prices are checked to detect relative and absolute outliers using a precision logic filter developed by Nikkei Inc., Financial Technology Research Institute Inc., NRI and NSC.

In addition, JS Price lists more than 12,000 bonds in total (mainly publicly offered and private placement domestic bonds) and covers almost 100% of index portfolios. Furthermore, JS Price offers daily prices with good continuity.

NSC dealers value Nomura prices for its own daily valuation process, and the NSC is one of the key financial instruments firms in the yen bond market, and is actively engaged in transactions with other financial instruments firms and its clients. For this reason, NSC is in a good position to obtain traded prices and/or quotations in the secondary market.

6.4 Key indices' inception date and base index value

Key indices provided in the NOMURA-BPI/Extended and their base dates are as follows (base dates vary depending on the index):

Index	Base date (= Base index value)	Publication start date
NOMURA-BPI/Extended	28 Dec 1983 (=100) ¹⁸ (The same as the NOMURA-BPI's until 29 Dec 1995.)	Oct 2000
NOMURA-BPI/Extended MBS	31 Mar 2003 (=100)	Apr 2003
NOMURA-BPI/Extended excluding ABS	28 Dec 1983 (=100) ¹⁸ (The same as the NOMURA-BPI's until 29 Dec 1995.)	Apr 2008

¹⁸ Prior to 31 August 1993, indices were provided on a monthly basis.

7. Definition of NOMURA-BPI/Extended indicators

7.1 Definition of issue-specific return-risk indicators

In NOMURA-BPI/Extended, the issue-specific return-risk indicators are defined as follows (see *NOMURA-BPI MBS Reference Book* for the definition of future cash flow and return-risk indicators in the MBS sector):

- Current yield CY (%)

$$CY = \frac{Cpn \times FV}{CP}$$

CP	:	Clean price (JPY)
Cpn	:	Coupon rate (%)
FV	:	Face value (JPY 100)

- Simple yield SY (%)

$$SY = \frac{Cpn + \frac{FV - CP}{Yr}}{CP} \times 100$$

CP	:	Clean price (JPY)
Cpn	:	Coupon rate (%)
FV	:	Face value (JPY 100)
Yr	:	Term to maturity (scheduled redemption)

- Compound yield r (%)

Calculate r as:

$$P = \sum_i CF_i \times \left(1 + \frac{r}{100} \times \frac{1}{2}\right)^{-2t_i}$$

P	:	Dirty price
CF_i	:	i -th future cash flow
t_i	:	Number of years until CF_i occurs

Future cash flow CF_i includes principal and interest payments (unless otherwise specified)

- T-spread $Tspd$ (%)

$$Tspd = r - \bar{r}$$

Let \bar{P} be a dirty price of the bond which is assumed a JGB that has the same cash flow as the one for which $Tspd$ is calculated:

$$\bar{P} = \sum_i CF_i \times DF(t_i)$$

Calculate \bar{r} (compound yield) for \bar{P} as:

$$\bar{P} = \sum_i CF_i \times \left(1 + \frac{\bar{r}}{100} \times \frac{1}{2}\right)^{-2t_i}$$

CF_i	:	i -th future cash flow
$DF(t_i)$:	Discount coefficient as of t_i ¹⁹
t_i	:	Number of years until CF_i occurs

¹⁹ The JGB discount factor is computed using the NOMURA Par Yield Model.

- Term to maturity (considering early redemption) *WAL* (Weighted Average Life; years)

$$WAL = \frac{\sum_i t_i \times CFP_i}{\sum_i CFP_i}$$

CFP_i : i -th future principal cash flow
 t_i : Number of years until CFP_i occurs

- Duration D (years)

$$D = \sum_i \frac{CF_i \times \left(1 + \frac{r}{100} \times \frac{1}{2}\right)^{-2t_i} \times t_i}{P}$$

CF_i : i -th future cash flow
 t_i : Number of years until CF_i occurs
 P : Dirty price

- Modified duration mD

$$mD = \frac{D}{1 + \frac{r}{100} \times \frac{1}{2}} \left(= -\frac{100}{P} \frac{dP}{dr} \right)$$

P : Dirty price

- Convexity CV

$$CV = \sum_i \frac{CF_i \times \left(1 + \frac{r}{100} \times \frac{1}{2}\right)^{-2t_i-2} \times t_i \times \left(t_i + \frac{1}{2}\right)}{P} \left(= \frac{10000}{P} \frac{d^2P}{dr^2} \right)$$

CF_i : i -th future cash flow
 t_i : Number of years until CF_i occurs
 P : Dirty price

- Effective duration $EffD$, effective convexity $EffCV$

$$EffD = \frac{1}{P} \sum_i t_i \times CF_i \times DF(t_i) \times \exp(-\alpha t_i)$$

$$EffCV = \frac{1}{P} \sum_i t_i^2 \times CF_i \times DF(t_i) \times \exp(-\alpha t_i)$$

Where α (yield curve spread) satisfies the following formula

$$P = \sum_i CF_i \times DF(t_i) \times \exp(-\alpha t_i)$$

CF_i : i -th future cash flow
 $DF(t_i)$: Discount coefficient as of t_i ²⁰
 t_i : Number of years until CF_i occurs
 P : Dirty price

²⁰ The JGB discount factor is computed using the NOMURA Par Yield Model.

7.2 Definition of portfolio indicators

Portfolio indicators are calculated using the issue-specific indicators of all issues in the index portfolio. The weighted average is used in the calculation, as shown in Fig. 6.

Fig. 6: Portfolio Indicator Calculation Methods

Indicator	Calculation Method
Coupon rate	Outstanding face value amount weighted average
Term to maturity (scheduled redemption)	
Term to maturity (considering early redemption)	
Dirty price	
Clean price	Market value amount (excluding accrued interest) weighted average
Current yield	
Simple interest yield	
Compound interest yield	
Duration	Market value amount (including accrued interest) weighted average
Modified duration	
Convexity	
Effective duration	
Effective convexity	

Source: NFRC

Appendix: Past rules on NOMURA-BPI/Extended index composition

Sector Changes in the NOMURA-BPI/Extended Total

Fig. 7: Sector Changes in the NOMURA-BPI/Extended Total

May 2003	Some petroleum bonds were taken over by the government following repeal of the Japan National Oil Corporation Law. Government-guaranteed petroleum bonds were thus reclassified as JGBs, instead of government-guaranteed bonds.
January 2004	With the repeal of the Electric Power Development Promotion Law, electric power development corporation bonds were reclassified as electric/gas utility bonds, instead of FILP agency bonds and others.
February 2004	As with the change in May 2003, government-guaranteed petroleum bonds taken over by the government were reclassified as JGBs, instead of government-guaranteed bonds.
April 2009	Securities issued by the Japan Finance Corporation for Municipal Enterprises and the Japan Finance Organization for Municipal Enterprises were classified as follows: Municipal corporation bonds backed by government: government-guaranteed bonds (same as before) Municipal corporation bonds backed by government: government-guaranteed bonds (same as before) Bonds issued by the Japan Finance Organization for Municipal Enterprises: corporate bonds (through March 2009), municipal bonds (from April 2009)

Source: NFRC

Past Changes in NOMURA-BPI/Extended Inclusion Criteria

Fig. 8: Past Changes in NOMURA-BPI/Extended Inclusion Criteria

June 2002	Date for determining inclusion in portfolio changed from last business day of the month to the 25th of the month, and inclusion standards then change as follows: • Inclusion determined based on rating as of the 25th of that month. • Inclusion determined based on remaining value as of end of following month using data through the 25th of that month.
April 2003	Government Housing Loan Corporation MBS are added.
June 2005	Date for following month's portfolio determination date: Changed to earlier of: 1) first business day after the 25th; or 2) three business days before the last business day of the month. Note that the inclusion selection is made one business day prior to the portfolio determination day. Note: The portfolio determination day may be changed if the JGB auction for a given month falls later than the day after the portfolio determination date.
April 2008	Some ABS included (FILP ABS, REIT bonds, life insurance capital fund notes and subordinated loan bonds)
April 2014	"Retail investor bonds (corporate bonds tailored for retail investors and local government bonds for retail subscription)" will be excluded from the index portfolio.
October 2019	Changed exclusion criteria for TOKYO PRO-BOND Market listed bonds.

Source: NFRC

Changes in the prices used for index calculation

Fig. 9: Changes in the prices used for index calculation

Oct.10, 2000- Feb.1, 2002	Nomura price
Feb.2, 2002-	Japan Standard Bond Price (JS Price), and if not available, Nomura price

Source: NFRC

Data services

Data for the indices can be obtained via the following channels.²¹

Index values are published in the following media:

QUICK	:	NRIJ001	NOMURA Indices guidance
LSEG	:	NMSBPI	NOMURA-BPI/Extended guidance
Bloomberg	:	NBPI<GO>	NOMURA-BPI/Extended guidance
Jiji Press	:	BPIXG/12400	NOMURA-BPI/Extended total investment return index
Website	:	https://www.nfrc.co.jp/SMI/en/bpi/index.html	

More detailed data

More detailed data on index values and individual stock information can be obtained through Nomura Research Institute services IDS.

For information, contact	:	Nomura Research Institute
		Investment Information Systems Business Department
E-mail	:	ids-sales@nri.co.jp

Other reports

Japan Bond Indices Handbook
NOMURA-BPI MBS Reference Book

²¹ Published data are all for reference only.

For further information on the indexes

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Website : https://www.nfrc.co.jp/SMI/en/frcnri/index_contacts.html

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- Index Governance Framework
- Conflicts of Interest Policy
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