NOMURA

Nomura High-yield J-REIT Index

EQUITY QUANTITATIVE RESEARCH (INDEX)

Index rulebook

Global Markets Research

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Research analysts

Japan index products

Quantitative Research Dept. - NSC

Index Operations Dept. - NSC
idx_mgr@jp.nomura.com
+81 3 6703 3986

The Nomura High-yield J-REIT Index

The Nomura High-yield J-REIT Index is a non-market-cap-weighted index comprising real estate investment trusts (REITs) with a high forecast dividend yield, selected from a universe of all REITs listed on Japanese stock exchanges (all J-REITs). Weights of individual J-REITs within the index are in proportion to their forecast dividend yield score multiplied by their market cap (with weights capped at 5%).

Index characteristics

- The index comprises the top 30-40 listed J-REITs in terms of forecast dividend yield.
- It is a non-market-cap-weighted index, and J-REITs with a higher forecast dividend yield have a higher weight in the index
- To take investability into account, J-REITs are screened in terms of market cap and average daily turnover

The index is reconstituted once a year as a general rule

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Contents

1. Periodic reconstitutions

1.1 Periodic reconstitution date

The periodic reconstitution date is the first business day of September each year, and the reconstitution is carried out after the close of trading on the last business day of August.

1.2 Periodic reconstitution base date

The periodic reconstitution base date is the last business day of the month that is two months before the periodic reconstitution date. Constituent J-REITs and the number of investment units in each constituent J-REIT to be included in the index following its periodic reconstitution are determined on the basis of calculations using data as of the reconstitution base date.

1.3 Announcement of periodic reconstitutions

As a general rule, the announcement of a periodic reconstitution will appear on our website at around 16:00 (Japan time) ten business days before the periodic reconstitution date. However, this will not apply in the event of unforeseen circumstances or when information cannot be confirmed.

2. J-REIT selection and index construction method

2.1 J-REIT selection universe

The J-REIT selection universe is all J-REITs listed on Japanese stock exchanges (all J-REITs) as of the periodic reconstitution base date. However, J-REITs that meet the following criteria as of the periodic reconstitution base date are excluded.

- Securities assigned for delisting

Securities assigned for delisting are not included in the universe.

- Securities under supervision (examination) and securities under supervision (confirmation)

Securities under supervision (examination) and securities under supervision (confirmation) that are not included in the index immediately prior to periodic reconstitutions are not included in the universe.

- TOB target J-REITs[1]

REITs that are the targets of tender offers (ie, takeover bids) may be excluded from the selection universe only if all of the following requirements are met:

(1) the offer close date is between the periodic reconstitution base date and the periodic reconstitution date;

(2) the party conducting the tender offer plans to acquire all the outstanding investment units in the target J-REIT; and

(3) the party conducting the tender offer is planning to acquire all of the investment units of the target J-REIT in exchange either for cash or its own shares (investment units), and the target J-REIT agrees to the offer.

2.2 Calculation of forecast dividend yield and forecast dividend yield score

2.2.1 Calculating forecast dividend yield

Forecast dividend yield is calculated from the most recent available forecast by the J-REIT of its dividend per unit (DPU) as of the periodic reconstitution base date, as follows:

Forecast dividend yield (%) = annualized DPU ÷ unit price on periodic reconstitution base date X 100

Annualized DPU = forecast DPU X 12 ÷ number of months in accounting period

Forecast DPU is selected according to the following order of precedence[2]:

(Next accounting period DPU + current accounting period DPU) ÷ 2 ＞ current accounting period DPU ＞ previous accounting period DPU

[1] This rule will apply to periodic reconstitutions from September 2018.

[2] We define the J-REIT's DPU forecast for the accounting period that is closest to the periodic reconstitution date, within the future 12-month period including the periodic reconstitution date, as the "current accounting period DPU", and the J-REIT's DPU forecast for the accounting period that is furthest from the periodic reconstitution date, within the future 12-month period including the periodic reconstitution date, as the "next accounting period DPU". Meanwhile, we define the J-REIT's DPU forecast for the accounting period closest to the periodic reconstitution date, within the 12 months up to the month before the periodic reconstitution date, as the "previous accounting period DPU".

2.2.2 Calculation of forecast dividend yield score

In line with the formula below, the standardized forecast dividend yield score is calculated by adjusting the values so that the average forecast dividend yield for all J-REITs is 0 and the standard deviation is 1[3].

$$\text{Standardized forecast dividend yield score for individual REIT}i$$
$$= \frac{(\text{forecast dividend yield for individual REIT}i\ -\ \text{average forecast dividend yield for all Japanese REITs})}{\text{standard deviation of forecast dividend yield for all Japanese REITs}}$$

The forecast dividend yield score, in which the standardized forecast dividend yield scores are converted to scores between zero and one, is then calculated using the following formula.

$$\text{Forecast dividend yield score for REIT}i\ = \frac{1}{(1\ +\ \exp\,(-\ \text{standardized forecast dividend yield score for individual REIT}i)}$$

2.3 Selection of J-REITs for inclusion in index

The J-REITs selected for inclusion in the index are those in the selection universe (see 2.1) with the highest forecast dividend yield[4], after taking also into account liquidity and other screening criteria and the rebalancing band[5].

Liquidity and other screening criteria

J-REITs that meet the following criteria are selected from the selection universe (see 2.1).

- Top 98% of selection universe in terms of market cap
- Top 95% of selection universe in terms of average daily turnover over the past 60 days
- More than one year since listing, as of periodic reconstitution base date

Determining the number of J-REITs to be included in index

[Number of J-REITs that meet liquidity and other screening criteria X 0.8 (rounded up or down to the nearest whole number] (N) is first calculated, and then the number of J-REITs to be included in the index is set at 30-40 using the following method:

- If N is less than 30 number of J-REITs selected for inclusion in index is 30
- If N is more than 40 number of J-REITs selected for inclusion in index is 40
- If N is between 30 and 40 number of J-REITs selected for inclusion in index is N

Rebalancing band

In order to limit frequent J-REIT replacements caused by very small differences in forecast dividend yield, priority is given to the selection of J-REITs with a rank number ranging from [number of J-REITs selected for inclusion in index – 2] to [number of J-REITs selected for inclusion in index + 3] in terms of forecast dividend yield.

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[3] Values are adjusted so that all standardized forecast dividend yield scores fall within the range -3 to +3, with a score of more than +3 becoming +3 and a score of less than -3 becoming -3.

[4] During the period between the periodic reconstitution base date and the business day before the details of the periodic reconstitution are published, if a J-REIT selected for the index is delisted or designated as a security assigned for delisting, it will not be included in the index, and another J-REIT or J-REITs will be selected until the number of J-REITs reaches the number of J-REITs to be included in the index in line with the J-REIT selection procedure.

[5] The rebalancing band will apply to periodic reconstitutions from September 2018.

J-REIT selection procedure

J-REITs that meet the liquidity and other screening criteria are selected for inclusion in the index using the procedure set out below.

(1) The top J-REITs in terms of forecast dividend yield on the reconstitutions base date, up to the J-REIT ranked [number of J-REITs selected for inclusion in index – 3], are selected unconditionally.

(2) Next, the J-REITs that are already included in the index and have a rank number ranging from [number of J-REITs selected for inclusion in index – 2] to [number of J-REITs selected for inclusion in index + 3] in terms of forecast dividend yield (the rebalancing band) are selected until the number of J-REITs reaches the number of J-REITs to be included in the index.

(3) If the J-REITs selected in steps (1) and (2) above do not reach the number of J-REITs to be included in the index, additional J-REITs are selected in order of forecast dividend, from those with a rank of [number of J-REITs selected for inclusion in index – 2] downwards.

(4) If the number of J-REITs that meet the liquidity and other screening criteria is less than 30, J-REITs are selected from among those in the selection universe (see 2.1) that have not yet been selected, in order of market cap (highest first), until the total number of J-REITs selected for the index reaches 30.

Fig. 1: Summary of index construction method

(1) Selection universe defined as all listed J-REITs	Periodic reconstitution once a year (September)
(2) Screening based on liquidity etc	Selection of J-REITs that meet the following criteria: -Top 98% of selection universe in terms of market cap -Top 95% of selection universe in terms of average daily turnover over the past 60 days - Listed for more than a year
(3) Selection of J-REITs (top J-REITs in terms of forecast dividend yield)	30-40 J-REITs selected in order of forecast dividend yield, highest first Rebalancing band taken into account
(4) Weights determined (non-market-cap-weighted, weight cap of 5%)	Index inclusion weights of selected J-REITs determined Weight based on [forecast dividend yield score X market cap]

Note: See text for details of index construction method.

Source: Nomura

2.4 Weighting of constituent J-REITs and number of investment units included in index

2.4.1 Constituent J-REIT weight and weight cap

Weights for each J-REIT included in the index are in proportion to their [forecast dividend yield score X market cap] on the periodic reconstitution base date. However, the maximum weight for each constituent J-REIT is set at 5%, and the weight of J-REITs exceeding the limit is allocated among the other constituent J-REITs in proportion to their [forecast dividend yield score X market cap].

2.4.2 Number of investment units included in index for each constituent J-REIT and index inclusion ratio

The number of investment units included in the index and the index inclusion ratio for each constituent J-REIT are calculated using data as of the periodic reconstitution base date so that the weight is equal to the constituent J-REIT weight set out in 2.4.1.

Market cap of J-REIT*i* included in index = weight of J-REIT*i* included in index x Σi (market cap*i*)

No. of investment units in J-REIT*i* included in index = market cap of J-REIT*i* included in index ÷ Nomura composite unit price for J-REIT*i*[6].

Index inclusion ratio of J-REIT*i* included in index = no. of investment units in J-REIT*i* included in index ÷ no. of investment units outstanding in J-REIT*i* for index calculation purposes

i indicates constituent J-REIT number *i* and Σi indicates the sum of all index constituents.

[6] The Nomura composite unit price is the price on the exchange that is judged to have the most accurate price for the J-REIT, based on the percentage of days traded and trading value over the previous 60 business days. As a general rule, the exchange is selected on a daily basis. The unit price is selected according to the following order of precedence:

Contract price on selected exchange (see note) > standard price on selected exchange > Nomura composite share price on previous business day

Note: Priority is given to the special quotation price or continuous confirmed quotation price on the selected exchange if these are available.

3. Unscheduled reconstitutions

3.1 Response to mergers, etc[7]

As a general rule, temporary exclusions of J-REITs from the index are avoided and the consistency of index constituents is maintained based on the following rules.

3.1.1 Absorption-type mergers

When a J-REIT is delisted because it is about to be merged into another J-REIT, it may be included in the index after delisting but removed from the index on the day of the listing change (or on the following business day if this is a non-business day). Following its delisting, and until its removal from the index, the valuation of the J-REIT to be merged is based on the market value of the J-REIT that will become the surviving J-REIT multiplied by the merger ratio. Also, the index inclusion ratio of the surviving J-REIT is changed on the day of the listing change (or on the following business day if this is a non-business day) based on the merger ratio.

3.1.2 Consolidation mergers

In the case of a consolidation merger, as a general rule temporary exclusions of J-REITs from the index are avoided and the consistency of index constituents is maintained. The old J-REIT is removed from the index on the day that the new J-REIT is listed (or on the following business day if this is a non-business day). The valuation of the old J-REIT on the day before its delisting is used as its valuation after its delisting. Also, the new J-REIT is included in the index on the day of its listing. However, if it becomes clear that the new J-REIT will not be included in the index after the next periodic reconstitution, it is removed from the index on the delisting date.

3.2 Removal of J-REITs

3.2.1 Designation as securities to be delisted

J-REITs designated as securities to be delisted are removed from the index four business days later (or on the following business day if this is a non-business day).

However, J-REITs that are listed on more than one market and have not been designated for delisting on one or more of the markets will not be removed.

3.2.2 Delisting

J-REITs that are delisted for reasons other than those stated in [3.1 Response to mergers, etc] are removed from the index on the day of their delisting.

[7] This rule applies beginning with changes in capital structure in August 2017.

4. Index calculation

4.1 Index base date, index base value, index announcement date

The base date for the Nomura High-yield J-REIT Index rulebook is 31 August 2007 and the value of the index on the base date (base value) is 10,000.

Publication of index values started on 4 September 2017.

4.2 Calculation of index market cap

Market cap of J-REIT*i* included in index = weight of J-REIT*i* included in index x Σi (market cap*i*)

Index market cap = Σi (market cap of J-REIT*i* included in index)

i indicates constituent J-REIT number *i* and Σi indicates the sum of all index constituents.

4.3 Calculation of index values

To prevent index values from being affected by changes in market capitalization not related to market fluctuations, eg, changes in capital structure and index constituents, the index is calculated as follows using base market capitalization[8]. Subscript t indicates the current day and $t-1$ indicates the preceding business day.

Calculation of yen-based index values

- Index excluding dividends

$$\text{Base market cap}_t = \text{index market cap}_{t-1} + \text{adjusted market cap}_t$$

$$\text{Return}_t = \frac{\text{index market cap}_t}{\text{base market cap}_t} - 1$$

$$\text{Index value}_t = \text{index value}_{t-1} \times (1 + \text{return}_t)$$

- Index including dividends

$$\text{Base market cap}_t = \text{index market cap}_{t-1} + \text{adjusted market cap}_t - \text{adjusted total dividends}_t$$

$$\text{Return}_t = \frac{\text{index market cap}_t + \text{total dividends}_t}{\text{base market cap}_t} - 1$$

$$\text{Index value}_t = \text{index value}_{t-1} \times (1 + \text{return}_t)$$

Method for reflecting dividends

For the index including dividends, dividends are reflected in index values on the ex-dividend date. However, as the value of the dividend has not yet been determined as of the ex-dividend date, the J-REIT's issued forecast dividend is used[9]. In the event that a difference subsequently arises between the dividend forecast and the actual dividend, the base market capitalization is adjusted on the last business day of the month of the earnings announcement (if the earnings announcement is made on the last business day of the month, the base market capitalization is adjusted on the last business day of the following month). In addition, if dividend adjustment is required, the base market

[8] In 4.3, adjusted market cap is calculated as change in market cap resulting from change in capital structure of index constituents or change in market cap resulting from change in index constituents. In addition, adjusted total dividends is calculated as difference between forecast and actual dividends if these are different.

[9] This rule applies from accounting periods ended end-December 2011 onwards. For periods before this, the actual dividend as of the ex-dividend date is used.

capitalization is adjusted on the last business day of the month in which this became clear (if the day in which this became clear is the last business day of the month, the base market capitalization is adjusted on the last business day of the following month).

4.4 Adjusting base market capitalization

Base market capitalization is adjusted in the following way if there is a change in capital structure or in index constituents (Figure 2). However, no adjustment is made to base market capitalization to reflect changes in capital structure that do not involve payment, such as investment unit splits or reverse investment unit splits, as these do not affect market cap.

Fig. 2: Timing of adjustments resulting from changes in capital structure

	Type of change in capital structure	Adjustment date	Unit price used
J-REIT replacement	Merger (reverse investment unit split)	Date of listing change	Previous day's price
	REIT replacement	Replacement date	Previous day's price
Capital increase	Rights offering	Ex-rights date	Issue price
	Gratis allocation of new investment units	Ex-rights date	Exercise price
	Public offering (issue of new investment units via public offering)	Business day following payment date (listing date of new investment units when settlement is on issuance date)	Previous day's price
	Capital increase via third-party placement (Issuance of new investment units via third-party placement)	Five business days after date of listing change	Previous day's price
	Exercise of investment unit acquisition rights	Last business day of month in which number of new investment units for which rights were exercised becomes known	Previous day's price
Capital reduction	Retirement of investment units (investment unit buyback)	Last business day of month following month of investment unit retirement	Previous day's price
	Rights offering refusal	Last business day of month in which rights offering refusal is announced (or last business day of following month if announcement is within five business days of month-end)	Previous day's price
Other	Other adjustment	Other adjustments to base market capitalization, if required, are made on the last business day of the month of the disclosure of the relevant information (or the last business day of the following month if the disclosure is made within five business days of the month-end)	Previous day's price

Source: Nomura

4.5 Change in index inclusion ratios

Index inclusion ratios are changed when constituent J-REITs are changed in periodic and unscheduled reconstitutions and when necessary for other reasons.

In addition, when the following changes in capital structure result in a change in the number of investment units outstanding for index calculation purposes, the index inclusion ratio is changed so that the number of investment units in the stock included in the index does not change.

- Reverse investment unit split[10]
- Rights offering
- Gratis allocations of new investment unit acquisition rights
- Public offering (issue of new investment units via public offering)
- Capital increase via third-party placement (issue of new investment units via third-party placement)
- Exercise of new investment unit acquisition rights
- Retirement of own investment units (investment unit buyback)
- Rights offering refusal
- Other adjustments

[10] When a J-REIT to be merged or consolidated is an index constituent, the index inclusion ratio of the surviving or new J-REIT is changed so that the total number of investment units in the index remains the same as it was before, taking the merger ratio into account.

5. Data publication services

Data for the Nomura High-yield J-REIT Index can be obtained via the following channels.[11]

Index values are published in the following media:

Bloomberg: NMRCJOJR (index excluding yen-based dividends) NMRCJIJR (index including yen-based dividends)

QUICK: NRIJ@

REUTERS: NHYJR (index excluding yen-based dividends) .NHYJRTR (index including yen-based dividends)

Our website: http://qr.nomura.co.jp/index.html (Japanese only)

Contact information

Nomura Securities Co., Ltd.

Global Research Division, Financial Engineering & Technology Research Center

Index Operations Dept.

TEL: +81 (0)3 6703 3986

e-mail: idx_mgr@jp.nomura.com

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While every effort is made to ensure that the information used in this report and all published information is based on reliable data, it should be noted that data may be changed or amended when necessary.

[11] Published data are all for reference only.

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See the following link for details:

http://qr.nomura.co.jp/en/guides/index.html

- Index Calculation Policy
- Complaints Handling Policy
- Glossary (Equity)
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Appendix A-1

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When bonds are purchased via public offerings, secondary distributions, or other OTC transactions with Nomura Securities, only the purchase price shall be paid, with no sales commission charged. Bonds carry the risk of losses, as prices fluctuate in line with changes in market interest rates. Bond prices may also fall below the invested principal as a result of such factors as changes in the management and financial circumstances of the issuer, or changes in third-party valuations of the bond in question. In addition, foreign currency-denominated bonds also carry the risk of losses owing to factors such as foreign exchange rate fluctuations.

When Japanese government bonds (JGBs) for individual investors are purchased via public offerings, only the purchase price shall be paid, with no sales commission charged. As a rule, JGBs for individual investors may not be sold in the first 12 months after issuance. When JGBs for individual investors are sold before maturity, an amount calculated via the following formula will be subtracted from the par value of the bond plus accrued interest: (1) for 10-year variable rate bonds, an amount equal to the two preceding coupon payments (before tax) x 0.79685 will be used, (2) for 5-year and 3-year fixed rate bonds, an amount equal to the two preceding coupon payments (before tax) x 0.79685 will be used.

When inflation-indexed JGBs are purchased via public offerings, secondary distributions (uridashi deals), or other OTC transactions with Nomura Securities, only the purchase price shall be paid, with no sales commission charged. Inflation-indexed JGBs carry the risk of losses, as prices fluctuate in line with changes in market interest rates and fluctuations in the nationwide consumer price index.The notional principal of inflation-indexed JGBs changes in line with the rate of change in nationwide CPI inflation from the time of its issuance. The amount of the coupon payment is calculated by multiplying the coupon rate by the notional principal at the time of payment. The maturity value is the amount of the notional principal when the issue becomes due. For JI17 and subsequent issues, the maturity value shall not undercut the face amount.

Purchases of investment trusts (and sales of some investment trusts) are subject to a purchase or sales fee of up to 5.4% of the transaction amount. Also, a direct cost that may be incurred when selling investment trusts is a fee of up to 2.0% of the unit price at the time of redemption. Indirect costs that may be incurred during the course of holding investment trusts include, for domestic investment trusts, an asset management fee (trust fee) of up to 5.4% (annualized basis) of the net assets in trust, as well as fees based on investment performance. Other indirect costs may also be incurred. For foreign investment trusts, indirect fees may be incurred during the course of holding such as investment company compensation.

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In interest rate swap transactions and USD/JPY basis swap transactions ("interest rate swap transactions, etc."), only the agreed transaction payments shall be made on the settlement dates. Some interest rate swap transactions, etc. may require pledging of margin collateral. In some of these cases, transaction payments may exceed the amount of collateral. There shall be no advance notification of required collateral value or collateral ratios as they vary depending on the transaction. Interest rate swap transactions, etc. carry the risk of losses owing to fluctuations in market prices in the interest rate, currency and other markets, as well as reference indices. Losses incurred as such may exceed the value of margin collateral, in which case margin calls may be triggered. In the event that both parties agree to enter a replacement (or termination) transaction, the interest rates received (paid) under the new arrangement may differ from those in the original arrangement, even if terms other than the interest rates are identical to those in the original transaction. Risks vary by transaction. Please thoroughly read the written materials provided, such as documents delivered before making a contract and disclosure statements.

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