

JAPANESE GOVERNMENT BOND FUTURES ROLLING STRATEGY INDEX
METHODOLOGY

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Overview

The following overview of the Japanese Government Bond Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the Japanese Government Bond Futures Rolling Strategy Index and its operation that follows in this document.

The Japanese Government Bond Futures Rolling Strategy Index (the “**Japanese Bond Futures Index**” or the “**Index**”) is a proprietary index designed to provide investors with exposure to the total return (including income from interest) of 10-Year Japanese Government Bond futures contracts (the “**JGB Futures Contracts**”) currently listed for trading on the Osaka Securities Exchange (the “**OSE**”). For more details on the JGB Futures Contracts and 10-Year Japanese Government Bonds deliverable under such contracts (the “**JGB Bonds**”), please see the section below entitled “JGB Futures Contracts”.

The JGB Futures Contracts expire on specified quarter end dates (one of March, June, September or December). At any given time, there is more than one JGB Futures Contract listed on the OSE (for example, with expirations of September 2014, December 2014 and March 2015). The Index will include the first nearby JGB Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby JGB Futures Contract comes to its last trade date (September 10, 2014 is the last trade date in our example), it will be replaced by the next JGB Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as “rolling”. Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the last trade date of the expiring JGB Futures Contract to, and including, the last exchange business day prior to the last trade date of such expiring JGB Futures Contract. Such period is referred to as the “**roll period**”. For further information on the roll methodology, please refer to the section entitled “Roll Methodology” below.

The Index is calculated in Japanese yen on a total return basis and the value of the Index (the “**Index Value**”) is calculated on each exchange business day (as defined in “Daily Strategy Value Calculation”).

Goldman Sachs International (the “**Index Sponsor**”) has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the “**Calculation Agent**”) for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

<http://www.GS.com/index-methodologies>

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

Japanese Bond Futures Index – Various Roles

The Japanese Bond Futures Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The Japanese Bond Futures Index operates in accordance with a set of pre-determined rolling methodologies and formulae and the Calculation Agent does not exercise any discretion with respect to the Japanese Bond Futures Index. The Japanese Bond Futures Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the Japanese Bond

Futures Index and, as a result, has no fiduciary duty to any person in respect of the Japanese Bond Futures Index.

Japanese Bond Futures Index Starting Value

The Japanese Bond Futures Index has been given a starting value of 100 as of December 31, 1991, which is the base date (“**Base Date**”).

Daily Strategy Value Calculation

The Japanese Bond Futures Index is a Japanese yen denominated index and is calculated on each day on which the OSE is open for trading (an “**exchange business day**”). The value of the Japanese Bond Futures Index on any given exchange business day will be calculated as the *product* of (i) the value of the Japanese Bond Futures Index as of the immediately preceding exchange business day *multiplied by* (ii) the *sum* of (x) the daily return ratio of the value of the JGB Futures Contracts (calculated as described below) on such day and (y) the overnight interest rate for the immediately preceding exchange business day multiplied by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the JGB Futures Contracts: On each exchange business day (other than during the roll period as described below), the daily return ratio of the value of JGB Futures Contracts is calculated as the *quotient* of (a) the JGB Futures Contract Valuation Price on the relevant exchange business day *divided by* (b) the JGB Futures Contract Valuation Price on the immediately preceding exchange business day. During the roll period, the calculation of the daily return ratio of the JGB Futures Contracts will reflect the price of the second nearby JGB Futures Contract rather than the first nearby JGB Futures Contract to the extent the Index’s investment has been rolled over during the roll period.

JGB Futures Contract Valuation Price: The JGB Futures Contract Valuation Price on any given exchange business day means the last traded price per JGB Futures Contract quoted by the OSE on such exchange business day, provided that if there is a closing special quote per JGB Futures Contract quoted by the OSE such quote shall be deemed to be the relevant JGB Futures Contract last traded price. Special quotes are mechanisms designed to prevent wild short-term price fluctuations.

The Calculation Agent will, however, not calculate the daily index value or will calculate such value pursuant to a different methodology when at any given time the JGB Futures Contract Valuation Prices for the first nearby JGB Futures Contract and/or the second nearby JGB Futures Contract, as applicable, are not published or are otherwise unavailable as further described below under “Price of JGB Futures Contracts Unavailable”.

Overnight Interest Rate: The interest rate calculation uses the overnight interest rate as published on Reuters page JPY-BOJ-TONAT and the ACT/365 (Fixed) day count fraction convention (meaning the actual number of days in the relevant period divided by 365). If the overnight interest rate is not published or is otherwise unavailable for the applicable calculation period, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such calculation period.

Publication of Changes to the Methodology

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the JGB Futures Contract Valuation Prices will be publicly announced as promptly as is reasonably practicable.

Index Committee

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under “Price of JGB Futures Contracts Unavailable”, and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee on matters of interpretation with respect to the Methodology. Because the Index Committee considers information about changes to the Index and related matters that may be potentially market moving and material, all Index Committee discussions, including those with the Calculation Agent, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

As JGB Futures Contracts have an expiration of specified quarter end dates (March, June, September or December), when the first nearby JGB Futures Contract comes to expiration, it is replaced by the second nearby JGB Futures Contract. For example, a JGB Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a JGB Futures Contract for delivery in September. This process is referred to as “rolling”.

Roll Period: Rolling will be carried out during the three exchange business days starting from, and including, the third last exchange business day prior to the last trade date of the first nearby JGB Futures Contract to, and including, the last exchange business day prior to the last trade date of such JGB Futures Contracts. Such period is referred to from time to time as the “roll period”. On each exchange business day of the roll period, one third of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract, and the prices at which JGB Futures Contracts are rolled will be based on the JGB Futures Contract Valuation Price for each of the first nearby and second nearby JGB Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the JGB Futures Contract Valuation Prices for one or both of the first nearby and second nearby JGB Futures Contracts are not published or are otherwise unavailable as further described below.

Price of JGB Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any exchange business day that does not fall within the roll period, the JGB Futures Contract Valuation Price for the first nearby JGB Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value.

If, on the immediately following exchange business day, the JGB Futures Contract Valuation Price for the first nearby JGB Futures Contract is available, the daily return ratio of the value of the JGB Futures Contracts will be calculated as the *quotient* of (a) the JGB Futures Contract Valuation Price on that exchange business day and (b) the last available JGB Futures Contract Valuation Price (however, for the avoidance of doubt, if such exchange business day is the first day of the roll period and the JGB Futures Contract Valuation Price for the second nearby JGB Futures Contract is not published or is otherwise unavailable on that exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value).

Unavailable Within the Roll Period: If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable at any time during the roll period, then rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on the first exchange business day of the roll period, then one half of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the second exchange business day of the roll period if the JGB Futures Contract Valuation Prices for both the first nearby and second nearby JGB Futures Contracts are available on such second exchange business day, and the second half of the notional investment in the first nearby JGB Futures Contract will be rolled over into the second nearby JGB Futures Contract on the third exchange business day of the roll period if the JGB Futures Contract Valuation Prices for both the first nearby and second nearby JGB Futures Contracts are available on such third exchange business day; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.
- **Case 2:** If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on both of the first and second exchange business days of the roll period, then the entire notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the third exchange business day of the roll period; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.
- **Case 3:** If the JGB Futures Contract Valuation Price for both of the first nearby and second nearby JGB Futures Contracts is available on the first exchange business day of the roll period, on which one third of the notional investment in the first nearby JGB Futures Contract is rolled over into the second nearby JGB Futures Contract, but the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on the second exchange business day of the roll period, then the remaining two thirds of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the third exchange business day of the roll period; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.
- **Case 4:** In any situation where the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on the third exchange business day of the roll period (including where such price is not published or is otherwise unavailable on both of the first and third exchange business days of the roll period only, both of the second and third exchange business days of the roll period only or all of the three exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the last trade date, which is the exchange business day immediately following the third exchange business day of the roll period. On such last trade date, rolling will be effected by using the first traded prices for the first nearby JGB Futures Contract and the second nearby JGB Futures Contract, provided that if, on such last trade date, the first traded price for the first nearby JGB Futures Contract and/or the second nearby JGB Futures Contract is not published or is otherwise unavailable, then the

first nearby JGB Futures Contract will be sold at the Valuation Price for such first nearby JGB Futures Contract on the last reference day (as defined below) and the second nearby JGB Futures Contract will be bought at the Valuation Price for such second nearby JGB Futures Contract on the last reference day.

On any given exchange business day on which rolling does not occur because the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable (such day, a “no-roll exchange business day”; for the avoidance of doubt, a no-roll exchange business day may include any exchange business day of the roll period), the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value.

If, on any exchange business day immediately following such no-roll exchange business day, the JGB Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the Japanese Bond Futures Index on such exchange business day, which can be summarized as follows:

On such exchange business day, the level of the Japanese Bond Futures Index will be computed as the *product* of:

- the value of the Japanese Bond Futures Index as of the last exchange business day on which the Valuation Prices for both of the first nearby and second nearby JGB Futures Contracts were available (such day, the “last reference day”); and
- the *sum* of:
 - (i) the *daily return ratio* reflecting either:
 - (a) if such exchange business day falls within the roll period, the weighted performance of the first nearby JGB Futures Contract and the weighted performance of the second nearby JGB Futures Contract from the last reference day to such exchange business day; or
 - (b) if such exchange business day is the last trade date, the *product* of (x) the weighted performance of the first nearby JGB Futures Contract from the last reference day up to the rolling effected as of the opening of the market on the last trade date, (y) the weighted performance of the second nearby JGB Futures Contract from the last reference day up to the rolling effected as of the opening of the market on the last trade date and (z) the performance of the second nearby JGB Futures Contract, including the second nearby contracts into which any remaining portion of the first nearby JGB Futures Contract is rolled over on the last trade date, from the opening of the market to market close on the last trade date (for the avoidance of doubt, if the last traded price of the second nearby JGB Futures Contract is not published or is otherwise unavailable on such last trade date, then the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value),

and

- (ii) the overnight interest rate for the calculation period.

Publication

The value of the Japanese Bond Futures Index is published on the Bloomberg page FRSIJPB <Index> (or any successor page).

Historical Data

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index is hypothetical and is provided as an illustration of how the Index would have performed during the period had the Calculation Agent begun calculating the Index on the Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the JGB Futures Contract Valuation Prices determined based on the latest available data published by the OSE and its predecessor for the relevant futures contracts, the Tokyo Stock Exchange.

Japanese Bond Futures Index Calculation Formulae

The formulae for the calculation of the Japanese Bond Futures Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant JGB Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = \left(r_t + \frac{i_{t-n}}{360} \cdot n \right) TRI_{t-n};$$
$$\left\{ \begin{array}{l} r_t = \frac{{}_c P_{1,t}}{{}_c P_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = \left(1 - \frac{m-1}{3} \right) \cdot \frac{{}_c P_{1,t}}{{}_c P_{1,t-n}} + \frac{m-1}{3} \cdot \frac{{}_c P_{2,t}}{{}_c P_{2,t-n}} \\ \text{when on the } m^{\text{th}} \text{ day of the roll period, } m = 1, 2, 3 \end{array} \right.$$

Where

t = The relevant exchange business day;

TRI_t = The value of Japanese Bond Futures Index as of day t;

i_{t-n} = Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding exchange business day (t - n);

r_t = Daily price return of the value of the JGB Futures Contracts on t;

cP{1,t} = JGB Futures Contract Valuation Price of the first nearby JGB Futures Contract on t; *provided that*, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby JGB Futures Contract shall mean the JGB Futures Contract into which the notional investment has been rolled; and

cP{2,t} = JGB Futures Contract Valuation Price of the second nearby JGB Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustments to the Japanese Bond Futures Index

Investors should be aware that if the terms of the JGB Futures Contracts are modified, the Index Committee may take such steps as it considers appropriate in response.

JGB Futures Contracts

The JGB Futures Contracts underlying the Japanese Bond Futures Index are contracts to buy or sell standardized trading “units”. One trading unit of JGB Futures Contracts equals one interest bearing JGB Bond with a face value of 100 million yen and a time to maturity at delivery of at least 7 years or more but less than 11 years. At the time the Index invests in them, the futures contracts will have a term to maturity of approximately three months. The JGB Futures Contracts require delivery of publicly offered interest-bearing JGB Bonds with 7 years or more but less than 11 years remaining to maturity as of the issued date and the delivery date. The JGB Futures Contract assumes an annual interest rate of 6%, but each JGB Bond’s interest rate is decided according to the JGB Bond’s market value at the time of issue and will remain unchanged until maturity. The OSE will publish acceptable deliverable JGB Bonds and their conversion factors for every JGB Futures Contract delivery date.

Licensing Information

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under “Contact Information” below.

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The Index relies on information published by the exchange regarding the price of the JGB Futures Contracts as well as the last trade date and other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Index.