

### 3 Secondary Market for Government Bonds

Not only are government bonds a means for government financing, but they are also financial products traded on the ever-changing financial markets at the same time. For JGBs to be issued smoothly and fulfill their functions as indicators of bonds and interest rates, transparency and liquidity must be assured and secondary markets with reliable and efficient settlement must exist. This chapter outlines JGB market liquidity maintenance and enhancement initiatives, as well as how JGBs are traded on the market and how JGB transactions are settled.

#### (1) JGB Market Liquidity Maintenance and Enhancement

If the JGB market is liquid enough to allow investors to freely trade in JGBs in line with their respective interest rate outlooks and investment strategies, it will contribute to holding down medium to long-term fundraising costs. Therefore, the government pays attention to the JGB market liquidity.

While market liquidity is defined variously, with no strict definition existing, high market liquidity is generally explained as allowing market participants to promptly buy or sell as much as they want at prices close to market prices (①). In order to assess JGB market liquidity, we must combine various indicators to analyze the market from a multifaceted perspective, instead of depending on a limited range of specific indicators.

The secondary JGB market consists of JGB Market Special Participants and other market makers, and various investors. The maintenance and enhancement of JGB market liquidity depends basically on the market's autonomous functions backed by transactions between such market participants. However, the government complements JGB market liquidity by adjusting issuance amounts, maturities, reopening and other matters.

Specifically, the government has taken the following measures to maintain and enhance JGB market liquidity:

- Conducting Liquidity Enhancement Auctions to add volume to past issues
- Reopening past issues (②) to expand the volume of each issue

The government has also held the Meeting of JGB Market Special Participants and the Meeting of JGB Investors (③) to understand market conditions through exchange of opinions with market participants.

① High market liquidity is also explained as allowing market participants to rapidly execute large financial transactions with a limited price impact.

② Ref: Chapter 1 2 (2) Ab “Reopening rule” (P59).

③ Ref: Preface 2(2) “Dialogue with Market Participants” (P4).

A. Liquidity Enhancement Auctions

Liquidity Enhancement Auctions reopen existing JGB issues, which have structural liquidity shortages or temporary liquidity shortages due to expanding demand, in order to facilitate JGB trading and correct JGB market distortions to maintain and improve JGB market liquidity and stabilize the JGB market for holding down the fundraising costs.

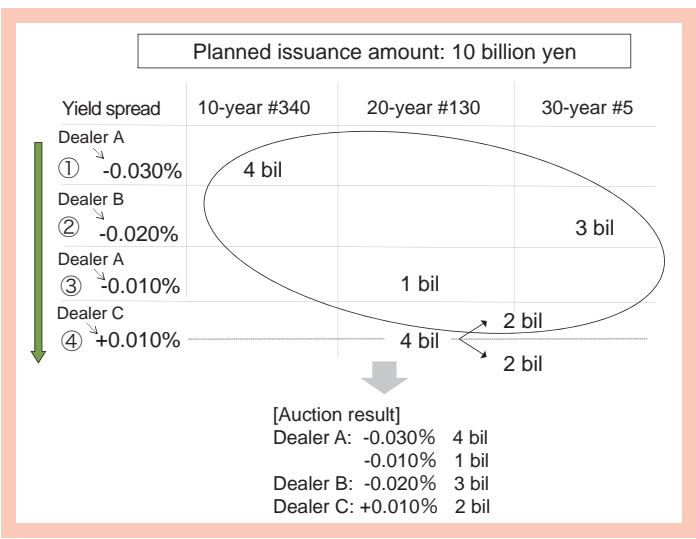
The yield-spread-competitive auction under the conventional method for JGB Market Special Participants alone is used for Liquidity Enhancement Auctions. In the auction, a bidder submits a bidding yield's spread with a standard yield (①) (a bidding yield-spread (②)) and a bidding amount for each issue subjected to reopening. In principle, regardless of issues, the bidding amounts are allocated with priority placed on smaller bidding yield-spreads (③). Bids whose bidding amounts are allocated before the planned issuance amount is reached are successful (Fig. 2-15).

① Standard yield means the average simple yield cited in the Reference Statistical Prices [Yields] for OTC Bond Transactions published by the Japan Securities Dealers Association on the auction day.

② A bidding yield-spread may be positive or negative. If a bidding yield is 1.030% against a standard yield of 1.000%, the bidding yield-spread is plus 0.030%. If a bidding yield is 0.970% against a standard yield of 1.000%, however, the bidding yield-spread is minus 0.030%.

③ If bidding yield-spreads are positive, priority is placed on smaller absolute values. If bidding yield-spreads are negative, however, priority is placed on larger absolute values.

Fig. 2-15 Image of Liquidity Enhancement Auctions



Liquidity Enhancement Auctions were launched in April 2006 to issue 100 billion yen worth of bonds a month for small 20-Year Bond issues with 11-16 years remaining to maturity that structurally lacked liquidity. Later, the range of JGB issues, issuance amounts and frequency for Liquidity Enhancement Auctions have been gradually expanded to counter a remarkable decline in the JGB market's liquidity following the global financial crisis (Fig. 2-16). Subject to Liquidity Enhancement Auctions at present are all 2- to 40-Year JGB off-the-run issues (④), which are divided into three zones by remaining maturity range – 1-5 years, 5-15.5 years, and 15.5-39 years.

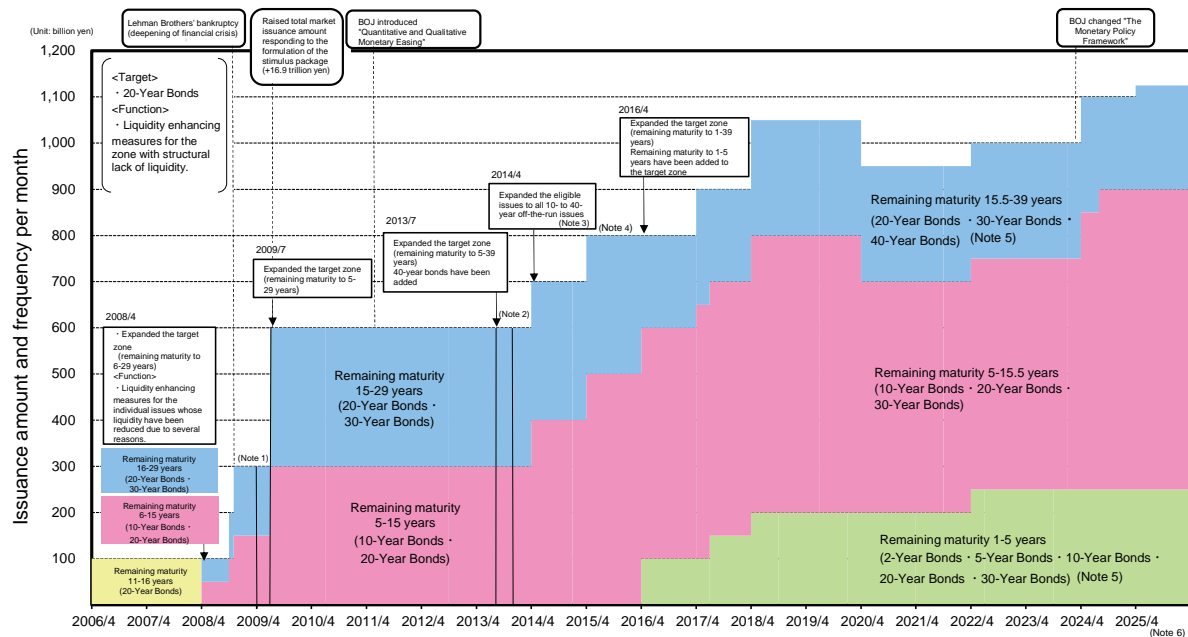
The FY2025 JGB Issuance Plan sets the amount for Liquidity Enhancement Auctions at 13.5 trillion yen, increased by 0.3 trillion yen from the previous year. Specifically, the plan sets the issuance amount through Liquidity Enhancement Auctions at 3.0 trillion yen for the remaining maturity of 1-5 years, 7.8 trillion yen for the remaining maturity of 5-15.5 years, and 2.7 trillion yen for the remaining maturity of 15.5-39 years, publishing planned zone-by-zone issuance amounts to improve the transparency of the auctions. Actual zone-by-zone issuance amounts will be adjusted flexibly in response to the market environment and investment needs, based on discussions with market participants.

For Liquidity Enhancement Auctions in the April-June 2025 quarter, the government

④ However, for 2-Year Bonds, newly-issued bonds issued in the Auction month for Liquidity Enhancement Auctions are included.

decided to issue 650 billion yen each month for 10-, 20- and 30-Year Bonds with 5-15.5 years remaining to maturity, 450 billion yen each in April and June for 20-, 30- and 40-Year Bonds with 15.5-39 years remaining to maturity, and 500 billion yen in May for 2-, 5-, 10-, 20-, and 30-Year Bonds with 1-5 years remaining to maturity, based on discussions at the Meeting of JGB Market Special Participants and the Meeting of JGB Investors.

Fig. 2-16 Transition of Liquidity Enhancement Auctions



Note 1: In the April-June 2009 quarter, durations to maturity had been differently divided into two groups: 6-16 years and 16-29 years.

Note 2: In the July-September 2013 quarter, durations to maturity had been differently divided into two groups: 5-15 years and 15-39 years.

Note 3: Before April 2014, multiple issues near newly issued bonds were excluded from the eligible issues.

Note 4: Before October 2015, due to system limitations, auctions took place only for bonds that were in high demand among market participants.

Since November of the same year, auctions for all eligible issues have been able to take place due to the launch of a new system.

Note 5: Since FY2016, Liquidity Enhancement Auction for JGBs maturing in 1-5 years or 15.5-39 years takes place every two months. In the figures are issuance amounts per month.

Note 6: The figures for FY2025 are planned amounts. Details of Liquidity Enhancement Auctions such as the allocation of issuance amount for each zone may be adjusted in a flexible manner in response to market environment and investor demands, based on discussion with market participants.

## B. Buy-back Program

Buy-back is defined as a scheme for the government as the issuer of JGBs to retire debt by purchasing existing bonds at a price agreed upon with the respective holders willing to take part in the deals prior to maturity of the bonds (①).

For the Buy-back Program, the price-spread-competitive auction under the conventional method for JGB Market Special Participants is used with the government clarifying a planned Buy-back amount in advance. In the auction, a bidder submits a bidding price's spread with a standard price (②) (a bidding price-spread (③)) and a bidding amount for the name and code of each target JGB issue. In principle, the bidding amounts are allocated with priority placed on a smaller bidding price-spread (④) until the Buy-back amount is reached.

In the past, the Buy-back program used to be implemented on very limited occasions: when JGBs were paid in kind to the government in accordance with the "Inheritance Tax Act" and when JGBs deposited with the government by an election candidate pursuant to the "Public Office Election Act" were confiscated due to the candidate's election loss. In recent years, however, the Buy-back program has been flexibly implemented to meet the MOF's specific purposes including leveling the concentration of JGB maturities and reducing the outstanding debt through transfers from the FILP Special Account.

Currently, the Buy-back program is used for Inflation-Indexed Bonds to improve the supply-demand balance and liquidity as market participants pointed out that a persistent supply-demand imbalance was seen and that liquidity premiums were expanding.

Since February 2020, Inflation-Indexed Bond supply and demand have remained unstable as JGB market liquidity has declined due to the global expansion of the COVID-19 outbreak. In response, an additional buy-back worth 300 billion yen was implemented in March 2020. From April 2020, a monthly Buy-back worth 50 billion yen was conducted. Inflation-Indexed Bond supply and demand remained unstable in early FY2021. As the improvement of the supply-demand relationship and a rise in the Break-Even-Inflation Rate through the Buy-backs and global price hikes were confirmed later, however, the monthly Buy-back was cut to 20 billion yen from January 2022.

While the government plans to implement JGB Buy-backs in FY2025 as necessary based on market scenes and discussions with market participants, many market participants continue to voice hopes to have Buy-backs continued for Inflation-Indexed Bonds. Considering that the development of the Inflation-Indexed Bond market is a key challenge for JGB Management Policy, the government has set the planned Buy-back amount at 60 billion yen for the April-June quarter of 2025, based on market conditions.

① Pre-maturity redemption, same as a scheme to retire debt, differs from Buy-back in that the government reserves an option to redeem existing bonds at the face value. The Ministry of Finance has stated on its website its vow not to implement the pre-maturity redemption of JGBs.

② Standard price means the average price cited in the Reference Statistical Prices [Yields] for OTC Bond Transactions published by the Japan Securities Dealers Association on the auction day.

③ A bidding price-spread may be positive or negative. If a bidding price is 101.30 yen against a standard price of 101.00 yen, the bidding price-spread is plus 0.30 yen. If a bidding price is 100.70 yen against a standard price of 101.00 yen, however, the bidding price-spread is minus 0.30 yen.

④ If bidding price-spreads are positive, priority is placed on smaller absolute values. If bidding price-spreads are negative, however, priority is placed on larger absolute values.

Fig. 2-17 Mechanisms for Liquidity Enhancement Auctions and Buy-backs

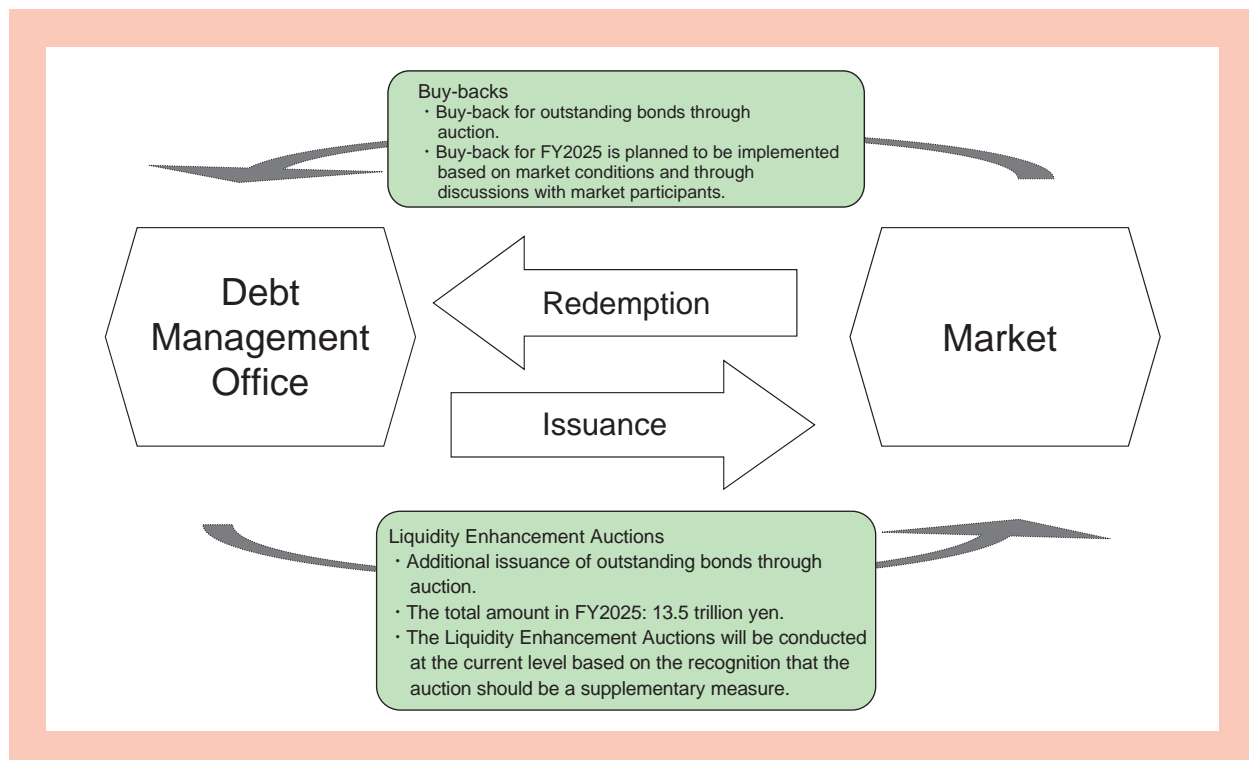
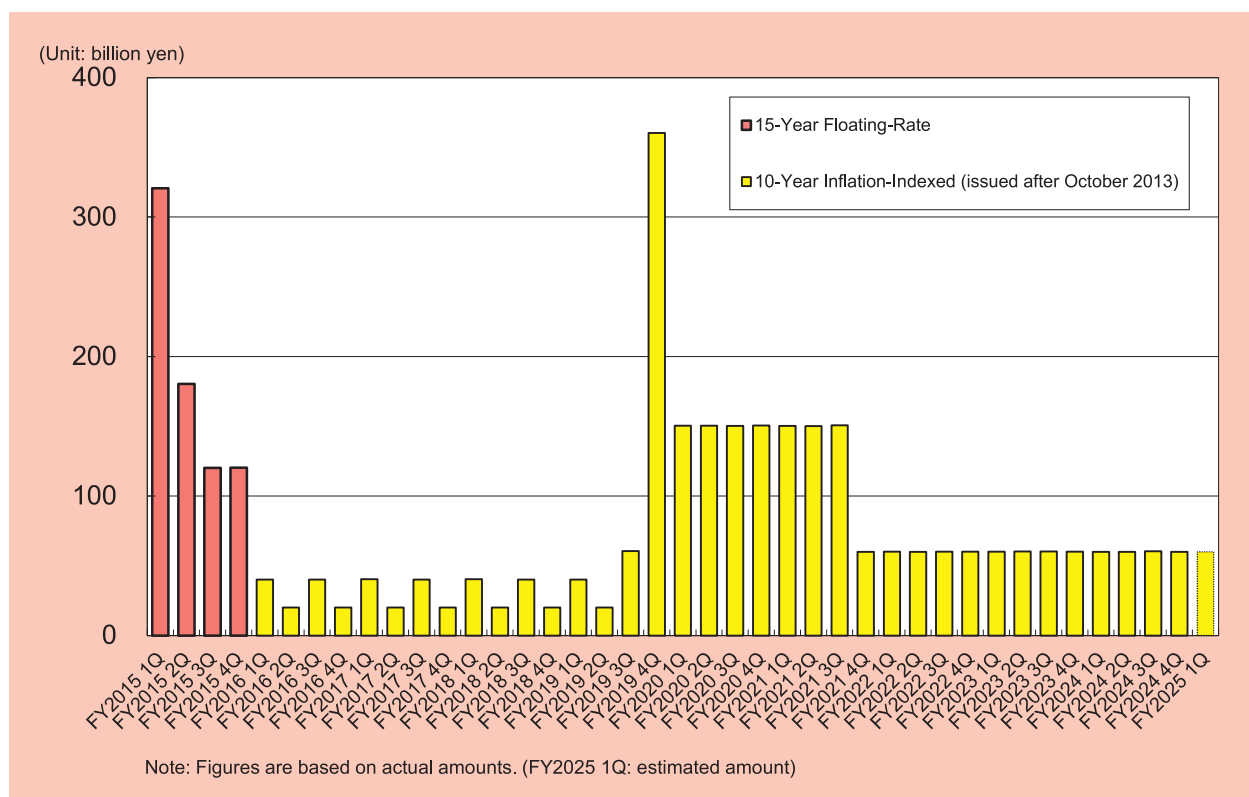



Fig. 2-18 Transition of the Buy-back Program



(2) OTC Transactions and Transactions on the Stock Exchange

The secondary market for public and corporate bonds can be divided into over-the-counter transactions (OTC transactions), such as transactions that take place at securities companies, and stock exchange transactions. However, OTC transactions are the more common transaction method because it is difficult to trade on the Stock Exchange on the conditions that you desire. This is because of the variety of transactions and administrative procedures involved due to the large number of issues in public and corporate bonds, as well as the complexity of bond trading.

In the OTC market, in principle, a price is concluded through a negotiation between the parties concerned. However, in order to ensure fair and smooth OTC bond transactions, Self-regulatory Regulations by the Japan Securities Dealers Association require each securities company to maintain the fairness of the transaction by acting at a proper price according to a set of internal rules (  ).

Currently, 2-Year, 5-Year, 10-Year, 20-Year, 30-Year and 40-Year Bonds and 5-Year and 10-Year Japan Climate Transition Bonds are listed on the Tokyo Stock Exchange and the Nagoya Stock Exchange, and their transaction volume is published.


 To improve the price announcement function of the OTC market, the Japan Securities Dealers Association publishes reference statistical prices [yields] for OTC bond transactions on every business day, based on the reports from its member securities companies and some other firms. As securities companies frequently trade with each other through market makers, such transaction price data are published by these market makers.

Fig. 2-19 Case of the Tokyo Stock Exchange

JGB Trading Framework		
Particulars	Trading Hours	12:30 pm - 2:00 pm
	Trading Unit	JPY 50,000 in par value
	Tick Size	JPY 0.01 per 100 yen face value
	Types of Orders	Limit orders only (Market orders are not available)
	Daily Price Limit	JPY 1 as stipulated by the exchange
	Trading Method	Orders are accepted only via Target (electronic document submission system of TSE)
	Trade Execution	Individual auctions for each issue
	Types of Trading and Settlement Dates	Regular transactions, with settlement on the second business day following the trade date (T+1)
	Method of Settlement	Settlement through BOJ-NET

(Source) Japan Exchange Group, Inc.



### (3) Improvements to the JGB Transaction Settlement System

As for the book-entry transfer system for JGB transactions on the secondary JGB market, the Bank of Japan is designated as the transfer institution under the “Act on Book-Entry Transfer of Corporate Bonds and Shares” and operates the system. The system uses book-entry transfer for JGB delivery accompanying JGB transactions between market participants. Practically, settlements are conducted through the BOJ-NET JGB Services in which many private financial institutions participate.

The MOF has developed the JGB transaction settlement system in cooperation with the BOJ and other stakeholders to improve the safety and efficiency of the JGB market. The following section reviews the deliberations concerning the JGB transaction settlement system to date.

#### A. Improving and reconstructing BOJ-NET functions

In 1994, the BOJ-NET adopted Delivery-versus-Payment (DVP) settlement (①), and in January 2001 changed from the Designated-time Net Settlement (DTNS) (②) to Real-Time Gross Settlement (RTGS) (③), to prevent the occurrence of any systemic risk event.

The BOJ began to construct a new system (hereinafter referred to as the New BOJ-NET) in 2008 to further improve the safety and efficiency of the entire settlement system of Japan. The New BOJ-NET came into full operation in 2015. Its operation hours were extended until 21:00 in 2016.

#### B. Establishment and propagation of the Fails Practice

“Fail” refers to a case of non-delivery of specific securities by the scheduled time due to reasons other than the creditworthiness of the relevant trade counterparty. “Fails Practice” refers to a market routine that prescribes general clerical procedures to be performed between the parties in a Fail instance and provides as a principle that a Fail event does not automatically imply default (①).

Fails Practice was introduced in January 2001, when the RTGS system for JGB settlement was adopted in Japan. Back then, a fair number of parties neither understood the need for Fails Practice nor had the clerical processing frameworks in place, preventing Fails Practice from becoming an established procedure. However, in connection with the collapse of the investment bank Lehman Brothers in September 2008, default contagion caused an unprecedented surge in Fail events. Subsequently, as a means for market participants to reduce Fail risk, avoiding new repurchase transactions altogether became increasingly widespread. Fails Practice was revised in November 2010 to introduce Fails Charge (②) and accelerate Cut-Off Time (③).

Ref: Chapter 1 2(4)B “The Bank of Japan government bond network system” (P64)

① DVP (Delivery-versus-Payment) settlement of JGBs is a mechanism that prevents the occurrence of a situation in which “payment for securities is not received despite the delivery of the securities having been made” or where “securities are not delivered despite the payment of funds having been made,” by making the delivery of securities and payment therefore conditional on each other.

② The DTNS (Designated-Time Net Settlement) system is designed to hold and accumulate various orders received for book entry transfers (payment orders) until a certain time, and at that time, pay or receive only the difference between the total amount receivable and the total amount payable as of such time. Under this settlement method, one single payment default at the time of settlement will cause the settlement of any and all payment orders issued by all participating financial institutions to be suspended and reversed, and by extension, may cause systemic risk.

③ The RTGS (Real-Time Gross Settlement) system is a mechanism to transfer in real time the gross amount of each transfer order as received. By this method, settlement is affected by each transfer order. Any single payment default will only directly affect the counterparty (which mitigates any systemic risk).

① Specifically, in case of a Fail event, neither will the right of contract cancellation be exercised nor will a penalty for late payment be imposed, in principle. If the Fail duration is prolonged, Buy-In provisions, etc., are stipulated as a method of resolution. “Buy-In” means the purchase of the deliverable securities or identical securities by the recipient to resolve a Fail status that has continued for a certain period.

② “Fails Charge” means a payment imposed on the party that gives rise to a Fail event by failing to deliver. The Fails Charge was introduced for its conceivable power to reduce Fail frequency on the grounds of its compelling economic rationale, especially in a low-interest environment (For details refer to the relevant regulations including “The Japanese Government Securities Guidelines for Real Time Gross Settlement”).

③ Cut-Off Time refers to a daily settlement closing time established among market participants that occurs before the end of JGB related operations on the BOJ-NET in order to identify “fail events,” etc., ahead of the end of settlement for the day. Currently the Cut-Off Time is set at 14:00.

### C. Shortening of settlement periods

An increase in unsettled transactions through defaults and fails after the September 2008 global financial crisis prompted market participants to strongly perceive settlement risks, leading once again to the realization that shortening settlement periods would be indispensable for effectively reducing unsettled transactions. Based on this experience and deliberations at the Working Group on Shortening of JGB Settlement Cycle established as a subordinate organ of the Promotion Meeting for Reform of the Securities Clearing and Settlement (☞①), the standard settlement period for JGB transactions was shortened to T+2 on April 23, 2012, and to T+1 on May 1, 2018 (☞②).

### D. Establishing a clearing institution and expanding its use

Together with the change in January 2001 to JGB settlement by RTGS, Bilateral Netting (☞①) was also introduced. Since outright transactions and repurchase transactions are being carried out constantly in the JGB market by multiple market participants, settling all transactions by individual counterparty would render clerical procedures complicated and highly inefficient, and also compel consideration of counterparty risk when making transactions. With regard to transactions contracted between market participants, this situation gave rise to the demand for an arrangement in which payments and JGB deliveries of JGB transactions are netted under the guarantee of settlement implementations by a clearing institution taking the position between parties (☞②).

In October 2003, the Japan Government Bond Clearing Corporation (JGBCC (Japan Securities Clearing Corporation or JSCC at present) (☞③)) was established as the Central Counterparty (CCP) for the JGB market. As a result, the relation of rights and obligations contracted between JGBCC participants was simplified to the effect that rights and obligations now exist between the JGBCC and each participant, with each party's counterparty risk now posed by the JGBCC instead of the transaction counterparty. Moreover, since participants and the JGBCC settle only the net balance of funds and identical JGB issues, the amounts of settlements, and funds and JGBs necessary for settlement, as well as their exposures during the day are significantly lower than before.

Later, clearing functions were improved through the enhancement of JGBCC governance and the participation in the JGBCC by trust banks that account for a large share of JGB transaction settlements.

☞① The “Promotion Meeting for Reform of the Securities Clearing and Settlement” is established under the “Committee for Reform of Securities Clearing and Settlement System” which is hosted by the Japan Securities Dealers Association. Its purpose is to engage, from an overarching, cross-sectional perspective, in the progress management of the securities settlement system reform and in the discussion of topics that cut across products and industries.

☞② As for the period between a JGB auction and issuance, T (auction date) +1 was also implemented for auctions from May 1, 2018, in principle (See Chapter 1 2(4)D “Shortening of Settlement Cycles in Primary JGB Market” (P66)).

☞① Bilateral netting is a method for the settlement of the difference between the various JGB delivery obligations and JGB payment obligations of two counterparties in situations where both types of obligation exist, as opposed to requiring each counterparty to meet each separate obligation as it falls due at the same time. All obligations are netted on each individual JGB and fund for settlement purposes. This netting process serves to reduce settlement volumes across the market as a whole.

☞② The clearing institution comes between buyers and sellers to clear credit and debt relations established between numerous parties for securities and other transactions by replacing those relations with those between the clearing institution and sellers and those between the institution and buyers.

☞③ On October 1, 2013, the JSCC merged with the JGBCC and took over the JGBCC's clearing services for over-the-counter JGB trading.

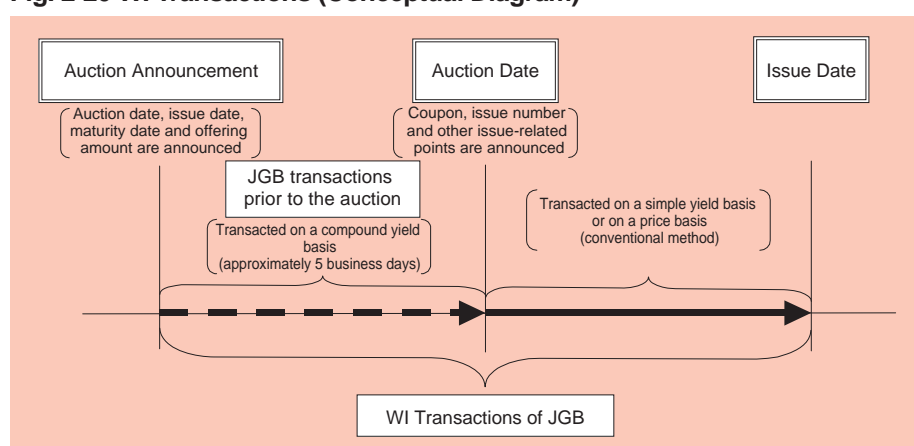


## (4) WI Transaction

A WI (When-Issued) transaction is a transaction made during a period between an auction announcement (in principle, a week before an auction date) and the previous day of its issuance. Besides a WI transaction during a period between an auction and the day of its issuance, one has become available prior to an auction date since February 2004.

A price of WI transactions functions as a predicted value of a bid price to be accepted because it reflects trends in the demand for a new issue prior to its auction. For the issuer, active WI transactions are considered to contribute to the efficiency of fundraising activities since they strengthen the linkage between the primary and secondary markets and reduce the uncertainty inherent in the auction process.

Fig. 2-20 WI Transactions (Conceptual Diagram)



## (5) Bond Gensaki and Bond-Lending Transactions

### A. Bond Gensaki Transaction

Bond *Gensaki* Transactions are bond sales transactions in which the traded bonds are traded back in the opposite direction on a date and at a price specified in an agreement concluded in advance between the parties to the transaction.

Bond *Gensaki* Transactions were a principal fundraising means for financial institutions holding securities soon after the end of World War II. While new short-term financial products such as certificates of deposit (CDs), commercial paper (CP), and large-lot time deposits were widely accepted by investors later, however, Bond *Gensaki* Transactions have been replaced by Bond-Lending Transactions and other means because Bond *Gensaki* Transactions are subject to the securities transaction tax because they are classified as trading. Bond *Gensaki* Transactions were thus limited to those trading mainly in Treasury Bills and Financing Bills (today's Treasury Discount Bills) free from the securities transaction tax.

Following a recommendation from the "Sub-Council on the Internationalization of the Yen" under the Committee on Foreign Exchange and Other Transactions that Japan's repurchase market promote transaction formats consistent with global standards (①) and the abolition of the securities transaction tax in March 1999, a new Bond *Gensaki* Transaction format was introduced in April 2001 that incorporated risk management methods such as the use of a package settlement provision (②), margin call feature (③), and substitution (④).

Based on discussions at the Working Group on Shortening of JGB Settlement Cycle established in September 2009 (⑤), T+1 was implemented as the standard settlement cycle

① "The internationalization of the yen for the 21st century—Japan's Response to Changes in Global Economic and Financial Environments," as replied to by the Council on Foreign Exchange and Other Transactions on April 20, 1999.

② A provision whereby if one of the two counterparties to the transaction defaults on payment, all the debts and credits under the basic agreement between them are replaced by one single monetary debt and credit (each of which is obtained by terminating all individual transactions and then offsetting the resulting loss or profit against the total collateral).

③ If, while transactions are being conducted, any difference arises as between the market value of the bond in bondlending and the value of the collateral provided because of fluctuations in bond prices, this feature permits a counterparty to claim a collateral shortage at any time.

④ A feature whereby, during the transaction period, another bond of equal or higher market value can be used to substitute for the bond being sold or purchased, subject to the agreement of both parties and following a notification given by one counterparty to the other of such an intention to substitute.

⑤ Ref: Chapter 1 3(3) C "Shortening of settlement periods" (P74)

for JGB transactions on May 1, 2018. On this occasion, the settlement cycle for GC (General Collateral) repurchase transactions using unspecified bonds as collateral was shortened from T+1 to T+0, with new *Gensaki* transactions used for developing GC repos under the Subsequent Collateral Allocation Method, leading new *Gensaki* transactions to replace Bond-Lending Transactions.

Since November 2002, the BOJ has introduced JGB *Gensaki* operations using new *Gensaki* transactions in place of operations using the traditional Bond-Lending Transactions.

B. Bond-Lending Transaction

Bond-Lending Transactions are Loan Transactions that one party (a lender) lends bonds to a second party (a borrower), and after a specified period, the borrower returns bonds of the same kind and in the same amount to the lender, thereby settling the lending transaction.

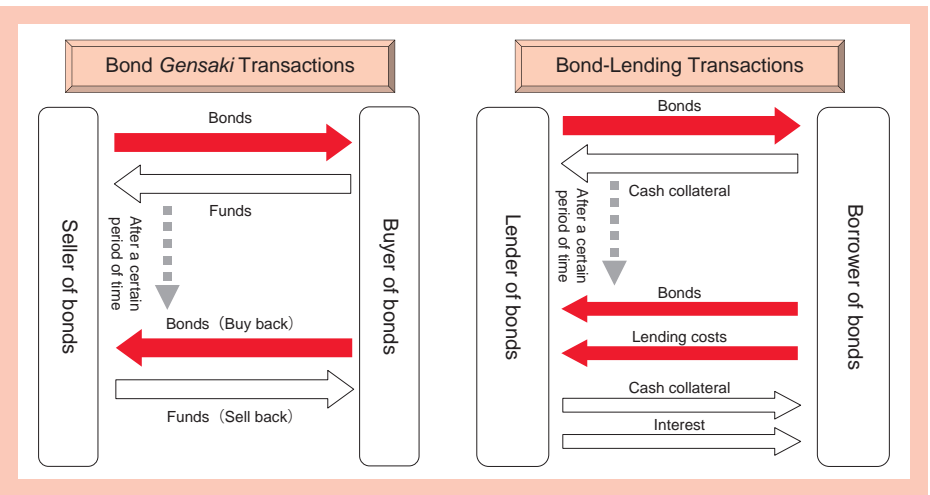
Bond-Lending Transactions were introduced in 1989 concurrent with the deregulation of the short-selling of bonds to promote the development of the secondary bond market. Bond-Lending Transactions were for the most part fully uncollateralized initially because regulations were imposed on interest on cash collateral to prevent competition with the Bond *Gensaki* Transactions and because collateralized Bond-Lending Transactions using non-cash collateral such as substitute securities were shunned by market participants due to complicated clerical work.

The collapse of the Barings Bank in February 1995 served as a fresh reminder of the risk associated with unsecured dealings. In order to mitigate credit risk, Bond-Lending Transactions underwent a review towards collateralization, modeled after the U.S. repurchase transactions. Risk management was reinforced by putting into place a package settlement provision and margin call features, and with the change to rolling settlement (①) of JGB transactions, the minimum limit for cash collateral was abolished along with the limit on interest. Beginning in April 1996, cash-secured Bond-Lending Transactions were initiated (②). Cash-secured Bond-Lending Transactions have actively been made for GC transactions and SC (Special Collateral) transactions to procure cash bonds required for unwinding short positions on bonds. In November 1997, they were included in the operations of the BOJ. Moreover, the JGBCC in May 2005 started settlement services including repo transaction settlements (such as obligation assumption and netting) and risk management, contributing to expanding repo transactions.

① Rolling settlement is a method to settle transactions sequentially, when it passed by the scheduled days. Before the change, settlements were concentrated on a specific day every month.

② Cash-secured Bond-Lending Transactions are called “Japanese Repurchase (Repo) Transactions.” While global standard repo transactions are buying and selling transactions, Japan’s repo transactions center on borrowing and lending transactions (particularly for cash-secured Bond-Lending Transactions) and are called Japanese Repo Transactions discriminated from global-standard repo transactions. They are also called “cash-secured repos” or “bond-lending repos.”

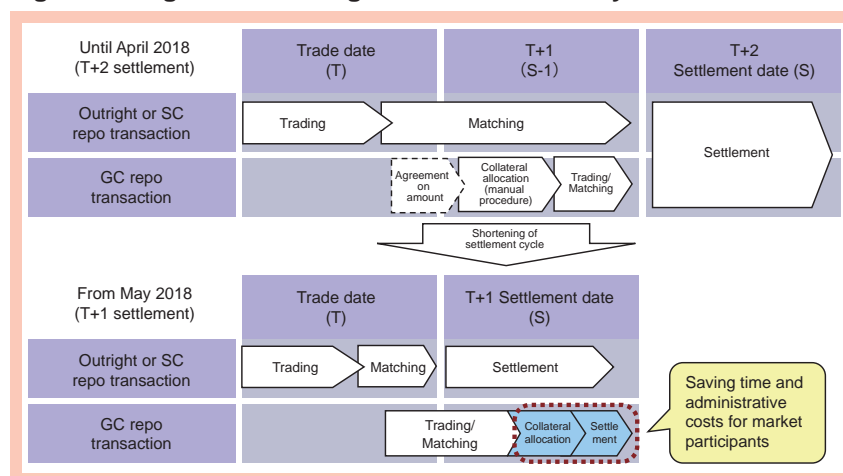
Fig. 2-21 Bond *Gensaki* and Bond-Lending Transactions (images)



### C. GC Repos under Subsequent Collateral Allocation Method

When the standard JGB settlement cycle was shortened to T+1 on May 1, 2018, the settlement cycle for ordinary JGB transactions (hereinafter referred to as outright transactions) and SC repurchase transactions was shortened from T+2 to T+1. At the same time, JSCC introduced GC Repos under Subsequent Collateral Allocation Method (Subsequent Collateral Allocation Repos), making GC repo transactions available for the T+0 settlement cycle.

Fig. 2-22 Image of Shortening of JGB Settlement Cycle

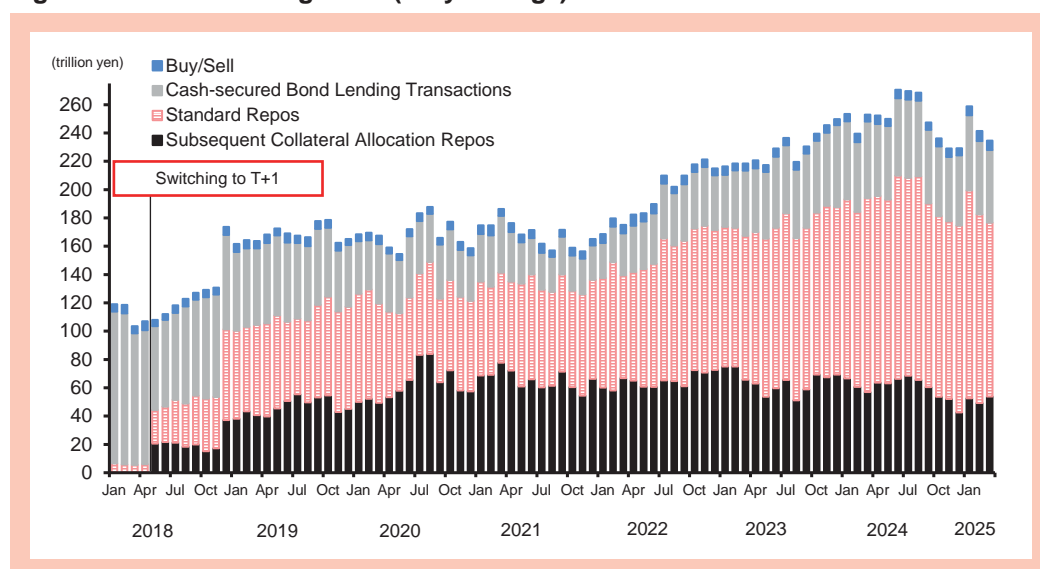


(Source) Prepared by the MOF based on the "Grand Design for Shortening of JGB Settlement Cycle (T+1)" published on November 26, 2014, by the Working Group on Shortening of JGB Settlement Cycle

GC repo transactions are frequently conducted by securities companies to raise funds to cover shortages after outright or SC repo transactions. GC repo transactions thus accompany outright or SC repo transactions. When the T+1 standard settlement cycle took effect for outright and SC repo transactions, therefore, how to accelerate post-trade procedures for GC repo transactions became a challenge. Then, the Subsequent Collateral Allocation Repos through new *Gensaki* transactions were introduced, based on precedent European and U.S. cases. Parties to a Subsequent Collateral Allocation Repo transaction designate the amount of funds to be delivered and a JGB basket (e.g., conditions for specifying the scope of JGBs for collateral allocation such as "Treasury Discount Bills" and "JGBs with maturity of less than 10 years or Treasury Discount Bills") before contracting, leaving JSCC to allocate the specific issue of JGBs for the transaction just before the settlement. In this way, market participants' administrative costs including the selection of JGB issues have been reduced, allowing the time for post-trade procedures to be shortened.

Transition from lending transactions (cash-secured repos) to the global standard of new *Gensaki* transactions (*Gensaki* repos including Subsequent Collateral Allocation Repos), as recommended upon the T+1 settlement cycle introduction, has made due progress. In the future, the globalization and vitalization of Japan's repo market, including the expansion of nonresidents' participation in the market, are expected to further improve the convenience of overall market participants.

Fig. 2-23 JSCC's Clearing Value (daily average)



Note: On a clearing value basis. *Gensaki* and cash-secured repos include both starts and ends.  
(Source) JSCC

(6) STRIPS

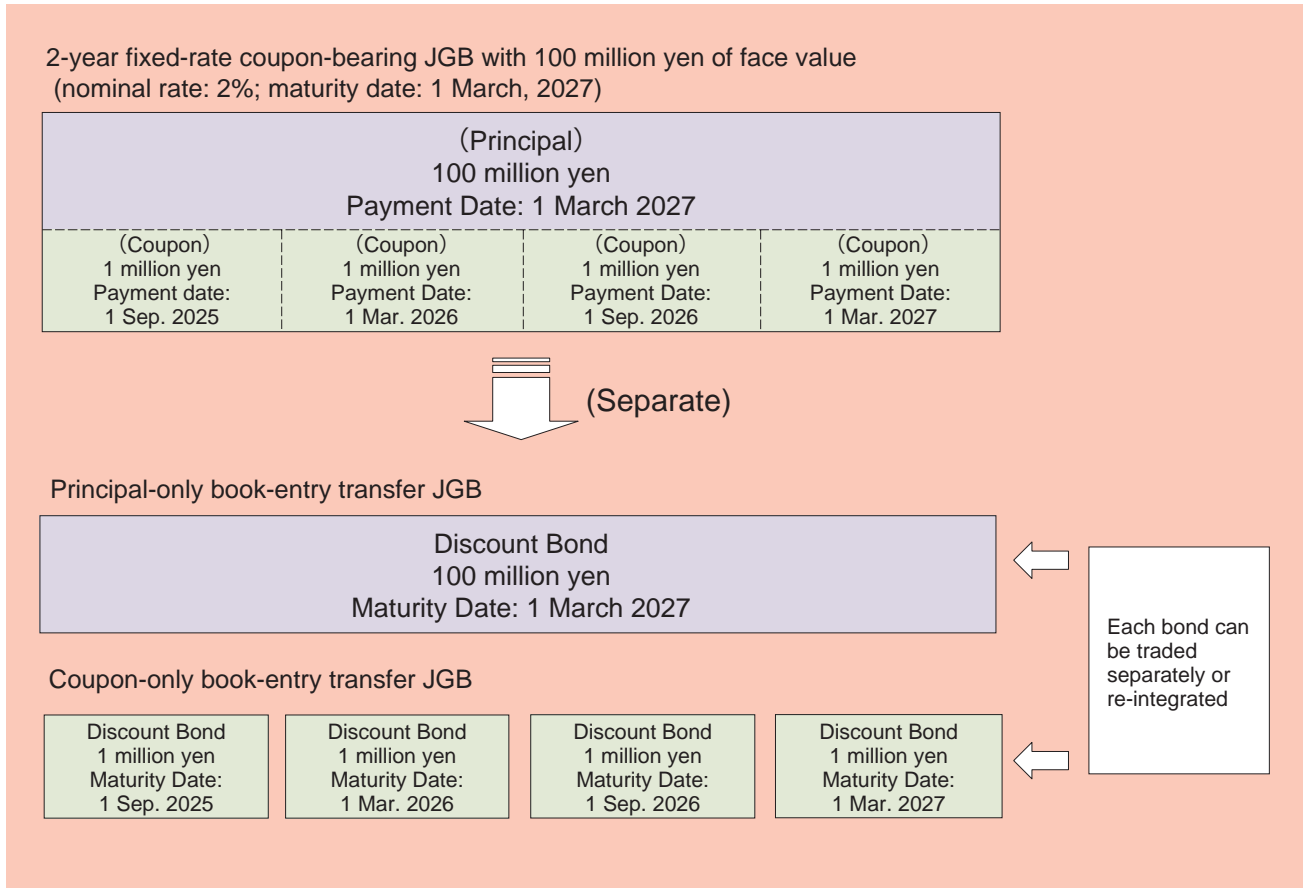
STRIPS (Separate Trading of Registered Interest and Principal of Securities) refers to a coupon-bearing bonds where the principal part and the interest (coupon) parts for each interest payment date are separated. These are respectively traded independently as principal-only book-entry transfer JGBs and coupon-only book-entry transfer JGBs. It is also possible to recombine the previously separated principal and interest parts to restore the original coupon-bearing bonds.

Since January 2003, it has been possible to strip JGBs (👉). The introduction of STRIPS is expected to make it possible to meet the needs of investors who want the separation of principal and interest components, and at the same time, to enhance arbitrage (interest rate adjustment) functions between discount bonds and coupon-bearing bonds, thus improving the efficiency of the JGB market.

The state of stripping of STRIPS is published at the MOF’s web site on a regular basis.

👉 All coupon-bearing bonds issued in January 2003 and thereafter except for JGBs for Retail Investors, and 10-Year Inflation-Indexed Bonds are the “Strippable Book-entry Transfer Securities. (Bonds issued as the same issue as the bonds which were issued by March 31, 2003 and were designated by the Minister of Finance as being subject to the provisions of “Act on Book-Entry Transfer of Corporate Bonds and Shares” are excluded.)” While no restrictions exist on holders of stripped JGBs, only the JGB Market Special Participants are allowed to apply for the separation and reconstruction of STRIPS.

Fig. 2-24 STRIPS - Conceptual Diagram



## (7) JGB Futures Trading

Futures trading means trading in a commodity or a financial asset at a price set at present on a particular future date.

JGB futures are used for hedging risks associated with JGB trading (☞) and serve as a bond market trend indicator, playing a key role in leading the primary and secondary JGB markets to work smoothly.

### A. Outline of JGB futures trading

JGB futures trading is outlined in three parts here. The first part outlines JGB futures. While there are four types of JGB futures – 5-year, 10-year, mini 20-year and mini 10-year (Cash-Settled) (Fig. 2-26) – listed on the Osaka Exchange, 10-year JGB futures account for most of JGB futures trading volume. The 10-year JGB futures are listed on the Singapore Exchange as well as the Osaka Exchange.

The second part outlines the JGB futures system. For JGB futures trading, trading instruments, contract size, the last trading day (☞①), the delivery settlement date (☞②) and other trading terms and conditions are standardized on the premise that many unspecified market participants trade in JGB futures on securities exchanges. Particularly, trading instruments are not actually issued JGBs, but notional JGBs called “standardized instruments” (☞③).

Any party can implement a massive futures transaction by paying margin money that is far less than the full transaction value. This is a feature of futures trading. Therefore, some investors proactively use JGB futures trading to leverage their investment positions.

The third part deals with how to settle JGB futures transactions. For settling a futures transaction, a party may at any time before the last trading day make an offsetting trade (long liquidation or short covering) for net settlement, or pay/receive the trading price and receive/deliver actual JGBs on the delivery settlement date. Offsetting trades are used for most futures trading.

For delivery settlement, actual JGBs designated as delivery-qualified issues (☞④) will be delivered in place of notional JGBs. As a standardized instrument and a delivery-qualified issue have different coupon rates and remaining maturities, a separately computed rate is used for adjusting a delivery price. This rate is called “conversion factor.” Specifically, a delivery price is computed by multiplying a futures price and a conversion factor for a delivery-qualified issue together (☞⑤).

While there are multiple delivery-qualified issues, the delivering party (or the futures seller) has the right to select an issue for delivery. An issue costing the delivering party least is called the cheapest issue. As the delivering party can minimize losses or maximize profits by selecting the cheapest issue for delivery, the cheapest issue is usually selected for delivery. Therefore, futures prices tend to be closely linked to prices of the cheapest issues.

Under the current market environment where a coupon on actual JGBs is lower than a 6% coupon on 10-year JGB futures, the cheapest among delivery-qualified issues is, in most cases, the one which has the shortest remaining maturity, at 7 years.

### B. Investors in JGB futures

Various investors use JGB futures. For instance, primary dealers that play a central role in the primary and secondary JGB markets use futures to hedge interest rate risks for JGBs that they purchase in the markets. Given that futures trading is almost free from counterparty risks

☞ For instance, a dealer who bought cash long-term JGBs and sold futures can offset losses or gains on those JGBs because futures prices correlate with cash JGB prices. Investors including banks use highly liquid futures to hedge interest rate risks linked to bond investment portfolios.

☞① The “last trading day” is set to come five trading days before the delivery settlement date (Fig. 2-26).

☞② The “delivery settlement date” is the 20th of March, June, September and December (Fig. 2-26).

☞③ “Standardized instruments” mean notional JGBs for which the stock exchange standardizes interest rates, redemption dates, and some other factors. For 10-year JGB futures trading, the standardized instrument is a notional JGB issue that carries a coupon rate of 6% and is set to mature in 10 years.

☞④ “Delivery-qualified issues” mean 10-Year Coupon-bearing JGBs with a remaining maturity of not less than 7 years but less than 11 years at the delivery settlement date in the case of 10-year JGB futures trading.

☞⑤ If the futures price is 150 yen and the conversion factor for the delivery-qualified issue is 0.72, the delivery price comes to 108 yen (150 yen x 0.72).



because trading counterparties are creditworthy exchanges and clearing institutions and that investment positions can be leveraged, JGB futures are a convenient tool for investors seeking to earn trading gains through short-term JGB buying and selling. In recent years, pension funds and other investors known for a long-term bond investment have proactively used JGB futures to leverage their investment positions.

Among investors conducting short-term buying and selling, commodity trading advisors (CTAs) feature an especially great presence in the futures market. The CTA had originally meant a registered qualification required to provide advice about futures trading to clients in the United States. At present, however, the CTA refers to hedge funds investing mainly in futures or investment strategy of these funds. According to Trading by Type of Investors from the Japan Exchange Group, foreign investors account for more than 70% of the JGB futures trading volume. The data does not provide a breakdown of foreign investors, but CTAs are believed to have accounted for a large part of them.

It is known that CTAs adopt an investment approach called “trend following”. The approach represents an investment strategy that follows an uptrend or downtrend of asset prices. If CTAs identify an uptrend in Japan’s bond market based on their standards or algorithms, for instance, they may buy long-term JGB futures. They may continue buying as far as the uptrend is sustained. When the uptrend was identified as ending, they would sell their holdings to lock in profits.

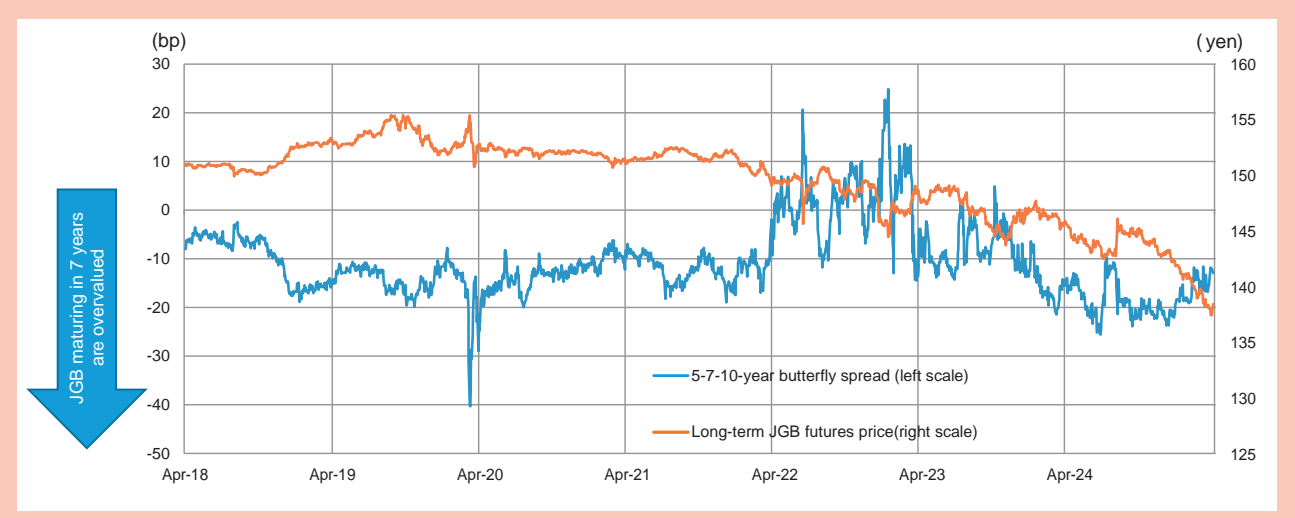
In this way, CTAs base their investment not on absolute yield levels but on a bond price fluctuation trend. Even under the BOJ's Quantitative and Qualitative Monetary Easing with Yield Curve Control, which manages short-term interest rates at -0.1% and long-term interest rates around 0%, there have been instances where active trading was conducted without considering yield levels once a trend is identified.

When CTAs and other investors intensify trading in JGB futures irrespective of absolute yield levels, JGBs maturing in seven years that are subject to arbitrage adjustment with futures may be undervalued or overvalued against other JGBs. The butterfly spread (①), which indicates whether a yield on an issue with a certain maturity is relatively higher or lower on the yield curve, shows that JGBs maturing in seven years became undervalued (with the yield rising) summer 2022 and early 2023 and overvalued (with the yield falling) in late 2023. In these periods, CTAs and other investors might have activated their investment (②). Since 2022, there has been an increase in the concentrated selling of futures, mainly by CTAs and other investors.

① The 5-, 7- and 10-year butterfly spread is generally expressed as 7-year yield × 2 - (5-year yield + 10-year yield).

② The great volatility seen in March 2020 might have been attributable to a market liquidity decline accompanying the spread of COVID-19.

Fig. 2-25 5-7-10-Year Butterfly Spread and Long-term JGB Futures



Note: 5-7-10-year butterfly spread:  $2 \times 7\text{-year yield} - (5\text{-year yield} + 10\text{-year yield})$   
(Source) Bloomberg



Fig. 2-26 Overview of JGB Futures Trading

	5-year JGB Futures	10-year JGB Futures	mini 20-year JGB Futures	mini 10-year JGB Futures (Cash-Settled)	
Opening Date	Feb. 16, 1996	Oct. 19, 1985	Apr. 7, 2014	Mar. 23, 2009	
Contract	Standardized 3%, 5-year JGB	Standardized 6%, 10-year JGB	Standardized 3%, 20-year JGB	Price of standardized 6%, 10-year JGB	
Deliverable Grade	Interest-bearing 5-year JGBs with 4 years or more but less than 5.25 years.	Interest-bearing 10-year JGBs with 7 years or more but less than 11 years.	Interest-bearing 20-year JGBs with 19 years 3 months or more but less than 21 years.	—	
Trading Hours	<div>&lt;Morning session&gt; Opening: 8:45 Regular session: 8:45-11:00 Closing: 11:02</div> <div>&lt;Afternoon session&gt; Opening: 12:30 Regular session: 12:30-15:00 Closing: 15:02</div> <div>&lt;Night session&gt; Opening: 15:30 Regular session: 15:30-5:55 (next day) Closing: 6:00 (next day)</div> <div>*1: If no trade is made at the opening, a shift to the regular session will be made. *2: If no trade is made at the closing, trade will not be executed.</div>				
Contract Month	3 months in the March quarterly cycle (March, June, September and December)				
Last Trading Day	5th business day prior to each delivery date (20th day of each contract month, move-down the date when it is not a business day). Trading for the new contract month begins on the business day following the last trading day.			*6th business day prior to each delivery date of the 10-year JGB Futures for the same contract month. Trading for the new contract month begins on the business day following the last trading day of 10-year JGB Futures. *Final settlement day is the 2nd business day following the last trading day.	
Contract Unit	100 million yen face value		10 million yen face value	Multiply 100 thousand yen by the price of 10-year JGB Futures	
Tick Size	0.01 yen per 100-yen face value			0.005 yen	
Price Limits	(1) The price limit range shall be the following:				
		5-year JGB Futures	10-year JGB Futures	mini 20-year JGB Futures	mini 10-year JGB Futures (Cash-Settled)
	Normal	± 2.00 yen		± 4.00 yen	± 2.00 yen
	Expansion	± 3.00 yen		± 6.00 yen	± 3.00 yen
	* The price limits will be expanded to the expansion of price limits (Only price limits in one direction, up or down, will be expanded.)				
	(2) Immediately Executable Price Range (DCB): LTP or BBO mid price ± following prices (Note 1)				
		5-year JGB Futures	10-year JGB Futures	mini 20-year JGB Futures	mini 10-year JGB Futures (Cash-Settled)
	Opening Auction	± 0.30 yen		± 0.90 yen	± 0.30 yen
Normal	± 0.10 yen		± 0.10 yen		
Closing Auction	± 0.10 yen	± 0.15 yen	± 0.15 yen		
Circuit Breaker Rule (SCB)	In the case where there was a trade, etc. in the central contract month at the upper or lower price limit range, trading in all contract months will be suspended for at least 10 minutes.			Trading is suspended while 10-year JGB Futures is in SCB state.	
Strategy Trades	The calendar spread trading is available. (Note 2)				
J-NET Trading (Note 3)	Available (Tick size: 0.0001 yen, Minimum trading unit: 1 unit)				
Final Settlement Method	Delivery of JGBs			Cash Settlement based on Final Settlement Price	
Delivery of Bonds	The delivery of issues is at the discretion of the seller of the futures contract.			—	
Margin	Calculated by VaR Method (Note 4)				
Give-up (Note 5)	Available				
Position Transfer (Note 6)	Available				
Reporting of Large Positions	Contract month: The nearest contract month of JGB Futures Target: Proprietaries and any customers whose amount of net position are no less than the following volume			Nothing	
		5-year JGB Futures	10-year JGB Futures		mini 20-year JGB Futures
	Reporting level	500 contracts	1,000 contracts		5,000 contracts
	Measurement date: Every Friday (In the case that it is from the beginning of March, June, September and December to the last trading day of the contract, reporting has to be made every trading day.				

Note 1: From the viewpoint of preventing sudden price fluctuations, such as those caused by erroneous orders, trading is temporarily halted when an order bringing an execution outside of a set price range based on the last reference price is placed. This is called the Immediately Executable Price Range Rule.

Note 2: Calendar spread trading means a form of trading conducted by placing bids/offers based on the price difference (spread) between two different contract months (specifically, a nearer contract month and a farther contract month; for example, March and June) to establish opposite positions by making one sale and one purchase at the same time for the two contract months.

Note 3: J-NET Derivatives Trading refers to off-auction futures and options trading in the J-NET market which is independent of the auction market on the Osaka Exchange.

Note 4: VaR method calculates required Margin statistically using big volumes of data.

Note 5: A give-up system enables a customer to entrust order-execution to a transaction participant and to entrust its settlement-related operations (payment/receipt of the difference at the time of settlement for futures trading, payment/receipt of options premium and margins, etc.) to other transaction participants.

Note 6: A Position Transfer System allows a transferring clearing participant (a transaction clearing participant who transfers unsettled positions) to transfer unsettled Futures/Options positions to a transferee clearing participant (a transaction clearing participant who takes over unsettled positions from the transferring clearing participant), with prior JSCC approval.

(Sources) Japan Exchange Group, JSCC