CHAPTER VI

The Secondary Markets for Bonds

1. Trading of Bonds

Bonds are traded in two different ways: (1) trading on a market operated by a financial instruments exchange, and (2) negotiated transaction between an investor and a securities company or other market intermediary. The former is referred to as an exchange transaction and the latter as an over the-counter (OTC) transaction. OTC transactions account for the majority of transactions on the secondary bond market.

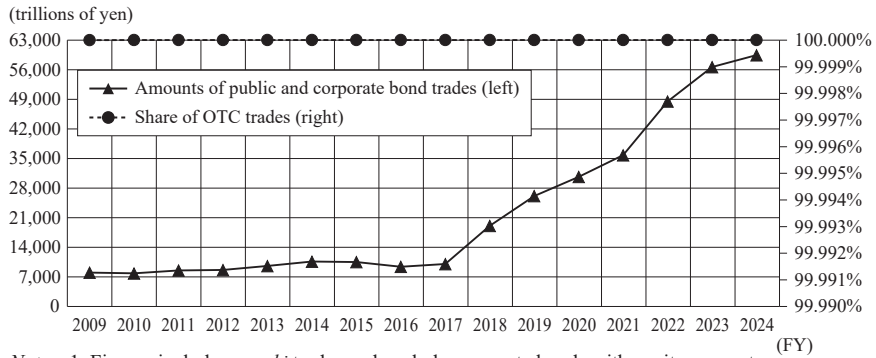
The trading volume of public and corporate bonds in the secondary market (including JGB basket trades from May 2018; the same applies here in Section 1 below) was only ¥58 trillion in fiscal 1975, but continued to grow thereafter, hitting ¥10 quadrillion in fiscal 2007. Although trading volume decreased to ¥7.7 quadrillion in fiscal 2010 due to the impact of the Lehman Crisis and other factors, it has recently increased significantly due to the shift from general collateral repos to repurchase repo transactions, and was just under ¥60 quadrillion in fiscal 2024.

Looking at bond trading volume by bond type, trading of JGBs accounts for over 99% of all trading. The government has continuously been issuing massive amounts of JGBs, resulting in a large increase in the outstanding balance in the market and driving the expansion of the secondary bond market.

This trend has continued in recent years. Between fiscal 2010 and 2024, the overall trading volume of public and corporate bonds increased by ¥42.124 quadrillion, while the trading volume of JGBs increased by ¥42.176 quadrillion. As such, government securities far outweigh other categories of bonds in overall fixed income trading volume. The dominance of government debt stems from the difference in liquidity, which in turn is mainly because government debt is considered risk free in Japan and attracts funds for various investment needs.

For the future development of secondary markets for bonds in Japan, it is important that bonds other than JGBs are traded actively. Recognizing the need to revitalize the corporate bond market, which plays an important role in corporate finance, the Japan Securities Dealers Association (JSDA) issued

Chart VI-1. Annual Amount of Purchasing and Selling of Bonds (Face Value Basis) and Share of OTC Trades



Notes: 1. Figures include *gensaki* trades and exclude corporate bonds with equity warrants.
2. The purchase price is, in principle, based on original face value, but government bond basket transactions from May 2018 onwards are based on execution price.

Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type) and the Japan Exchange Group website (transaction volume and value)

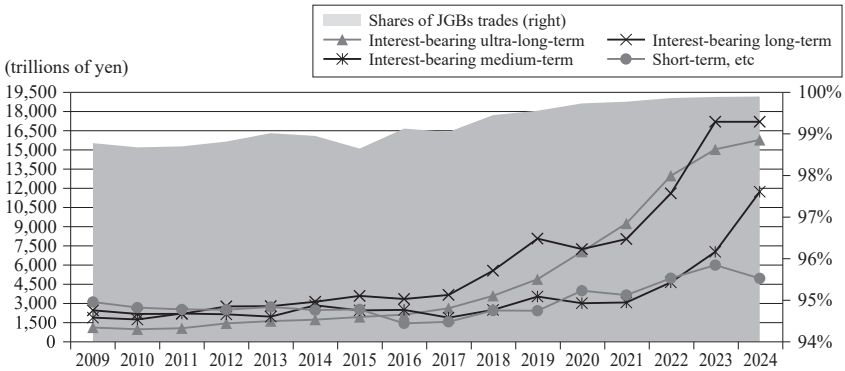
a report in 2010, "Toward Vitalization of the Corporate Bond Market" that identified the issues faced by the country's corporate bond market and also proposed specific measures to create a more efficient corporate bond market with higher transparency and liquidity. The report went on to state that revitalization of the Japanese corporate bond market would be an important factor in Japan's new economic growth strategy and that the public and private sectors should actively cooperate in advancing the measures.

Some of the specific initiatives taken by the JSDA in response to this report are described later in this Chapter.

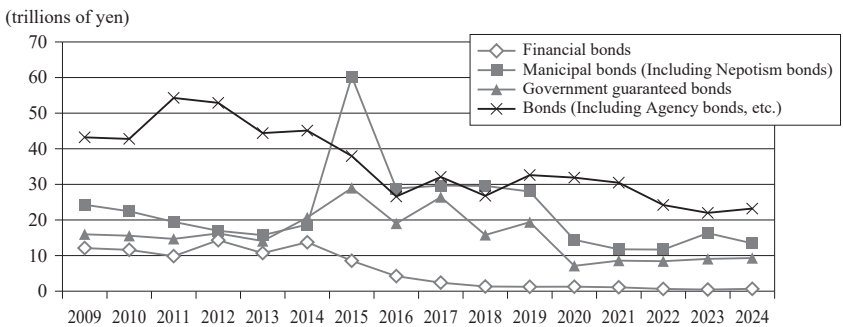
2. Participants in the Secondary Bond Market

Looking at the OTC bond market by type of investor or transaction party, trading is dominated by bond dealers, such as securities companies. OTC trading of public and corporate bonds requires dealers to promptly cope with a broad range of trading requirements from investors. However, the large number of bonds and the wide variety of available transaction formats make it difficult to quickly find a matching counterparty for certain transactions. Therefore, in most bond transactions, securities companies or dealer banks act as the counterparty, buying or selling as principal against clients' needs to facilitate smooth transactions. Furthermore, securities companies, etc. trade

Chart VI-2. Bond Trading volume by Bond Type



Note: Figures include *gensaki* trades (excluding JGB basket transactions from May 2018) and exclude corporate bonds with equity warrants.
Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type)



Note: Figures include *gensaki* trades and exclude corporate bonds with equity warrants.
Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type)

bonds on a proprietary basis, which adds to overall dealer trading volumes. The next largest category is "non-residents," aggressively trading short-term government bonds such as Treasury Bills, as well as long-term and super-long-term bonds. Their purpose of investing in the Japanese bond market is more as a means to invest in the yen rather than in bonds. The "Other" category includes the Bank of Japan, which functions as the underwriting agent for JGBs and also buys and sells a range of debt securities as part of its open market operations. In addition, with the difficult investment environment recently, city banks, in pursuit of profit, are vigorously engaging in proprietary

Table VI-1. Trends in Bond Transactions by Investor Type

(Figure on the top line is the total of buy and sell; figure on the lower line is the net of buy and sell and negative figure denotes selling on balance)

(¥10 billion)

	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
City (commercial) banks	12,709	6,085	10,231	9,135	10,077	12,401	17,232	16,090	12,491	11,055
	(－973)	(1,064)	(2,209)	(352)	(158)	(3,259)	(2,179)	(1,143)	(160)	(363)
Regional banks	3,480	2,525	1,640	1,560	1,476	1,604	1,809	2,073	1,815	2,215
	(51)	(－80)	(－60)	(16)	(304)	(517)	(278)	(－36)	(374)	(587)
Trust banks	10,861	10,000	10,074	10,581	12,231	13,788	15,544	17,520	18,172	16,961
	(561)	(299)	(516)	(422)	(881)	(1,964)	(3,290)	(2,142)	(3,848)	(3,520)
Agriculture-related banking institutions	1,000	975	980	1,026	1,040	1,245	1,346	1,596	1,160	1,318
	(232)	(240)	(325)	(230)	(288)	(408)	(178)	(121)	(191)	(－74)
Other banking institutions	2,128	1,631	733	613	545	706	1,108	697	698	776
	(806)	(578)	(155)	(109)	(140)	(244)	(530)	(55)	(137)	(300)
Life and property casualty insurance companies	1,956	1,555	1,507	1,701	1,880	2,256	2,418	2,886	2,222	3,171
	(507)	(404)	(371)	(406)	(564)	(728)	(653)	(581)	(428)	(500)
Investment Trusts	3,961	2,139	2,159	2,499	2,915	3,639	3,943	5,003	5,071	5,706
	(2,284)	(416)	(240)	(381)	(519)	(733)	(945)	(1,000)	(690)	(1,094)
Public employees mutual aid associations	115	84	86	82	65	109	73	76	99	88
	(15)	(5)	(7)	(3)	(5)	(－32)	(11)	(－5)	(－2)	(2)
Corporations	320	81	98	144	180	160	135	145	189	305
	(256)	(40)	(75)	(94)	(109)	(120)	(80)	(115)	(127)	(253)
Entities not domiciled in Japan	37,609	36,466	34,992	40,444	45,439	54,653	56,933	75,656	86,575	84,623
	(21,575)	(21,814)	(21,208)	(24,486)	(23,939)	(27,909)	(27,534)	(29,633)	(29,485)	(24,491)
Others	61,742	56,869	48,849	46,837	44,085	70,883	56,716	59,952	56,050	49,702
	(－24,673)	(－22,866)	(－24,303)	(－26,216)	(－26,874)	(－37,612)	(－36,974)	(－34,956)	(－37,243)	(－33,539)
Bond dealers	142,679	116,243	117,185	111,706	111,984	101,576	100,652	109,423	105,626	125,500
	(－446)	(－465)	(28)	(34)	(7)	(－135)	(－274)	(－22)	(69)	(53)
Total (including other investors)	281,281	236,550	230,135	228,532	233,708	265,029	259,940	293,128	292,223	303,841
	(557)	(1,490)	(881)	(474)	(340)	(－799)	(－520)	(305)	(－958)	(－1,292)

Note: Excludes trades of corporate bonds with equity warrants, other than *gensaki* bonds.
Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type)

bond trading and also reselling municipal and other bonds underwritten by themselves. It should also be noted that trust banks have traditionally allocated large shares of assets under management or administration, including pension assets, to bonds.

As measured in terms of difference between selling and buying transactions, almost all business categories were net buyers of bonds in fiscal 2018 and 2019, except "Others". The reason why "Others" is constantly and sig-

nificantly oversold is that primary JGBs issued by auction are settled via the Bank of Japan and reported as sales by the central bank. In fiscal 2020, government bond issuance increased significantly due to two supplementary budgets in response to the pandemic. This drove a sharp rise in the net sale amount in the "Others" category but also a large increase in the net value in many categories, including city banks and non-residents. JGB issuance has remained at historically high levels since fiscal 2021. Although the JGB issuance plan for fiscal 2025 calls for a lower issuance amount than in the previous fiscal year, the planned volume remains extremely high. Therefore, categories other than "Others" are expected to continue to be net buyers.

3. Over-the-Counter Bond Transactions

Depending on where transactions take place, the trading of bonds may be broadly divided into exchange transactions and over-the-counter (OTC) transactions.

The overwhelming majority of bond transactions take place over the counter rather than on exchanges. This is due to the following reasons: (1) there are so many issues of bonds that it is practically impossible to list all of them on exchanges; (2) due to the wide variety of bond transaction formats and other specifications that different buyers and sellers require, it is difficult to instantly locate a matching counterparty for a particular transaction; (3) corporate investors, who account for the bulk of the bond trading volume, tend to trade in large lots and often carry out complex transactions involving more than one issue; and (4) tax on bond interest varies according to the tax profiles of bondholders. For these reasons, bond transactions, in general, do not lend themselves to trading on exchanges, where the terms of transactions need to be standardized. Bonds are more efficiently traded over the counter, where trades are executed based on the terms individually negotiated between buyers and sellers.

Unlike exchange markets, where all orders for a particular instrument are concentrated in a single marketplace, OTC trading, in essence, is a decentralized, free transaction process based on one-to-one negotiation between the parties that is conducted over the counter at individual securities companies and other institutions. In that sense, it may be said that the counter of each securities company is a market in itself and that there are as many OTC markets as there are securities companies.

A wide variety of transactions may be executed over the counter once an investor and a securities company agree on their terms. Private placement bonds as well as publicly offered bonds may be traded, with the delivery and settlement procedures agreed upon between the buyer and the seller. The

Table VI-2. Bond Trading by Market

(¥10 billion)

		Government securities	Corporate bonds with subscription rights/ warrants	Others
FY2015	Stock Exchanges	0	30	0
	Over the counter	1,025,087	20	14,432
FY2016	Stock Exchanges	0	18	0
	Over the counter	921,027	31	7,335
FY2017	Stock Exchanges	0	6	0
	Over the counter	983,609	13	8,717
FY2018	Stock Exchanges	0	4	0
	Over the counter	1,889,240	11	8,141
FY2019	Stock Exchanges	0	3	0
	Over the counter	2,596,658	8	7,979
FY2020	Stock Exchanges	0	4	0
	Over the counter	3,052,768	7	5,090
FY2021	Stock Exchanges	0	1	0
	Over the counter	3,566,258	1	5,426
FY2022	Stock Exchanges	0	1	0
	Over the counter	4,840,739	1	4,506
FY2023	Stock Exchanges	0	0	0
	Over the counter	5,655,966	0	5,025
FY2024	Stock Exchanges	0	0	0
	Over the counter	5,937,665	0	5,021

Notes: 1. The figures for exchange trading volume are double those actually reported by exchanges to account for both buy and sell sides of transactions.
2. OTC trading volume includes *gensaki* trades (including JGB basket transactions (execution amount basis) from May 2018)

Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type) and the Japan Exchange Group website (transaction volume and value)

transaction price can also be decided between the two parties, often in reference to the prices of other relevant financial instruments.

In OTC trading, a securities company, etc. first buys bonds that a client offers to sell and then resells them to another client afterward. When a client wants to buy bonds, it sells them out of its own inventory or looks to acquire them from other brokers. These types of transactions, in which a securities

Table VI-3. Breakdown of Major Bond Categories, by Outstanding Balance and Number of Issues

(¥1 trillion, No. of issues)

		Government securities	Municipal bonds (public offering)	Government-guaranteed bonds; FILP agency bonds	Straight bonds	Corporate bonds with subscription rights/ warrants	Bank debentures (interest bearing and discount)
FY2015	No. of Issues	497	3,008	2,151	2,828	24	526
	Outstanding balance	901	59	69	57	0	11
FY2016	No. of Issues	506	3,059	2,244	2,961	26	428
	Outstanding balance	927	60	68	60	0	10
FY2017	No. of Issues	512	3,100	2,370	3,070	23	366
	Outstanding balance	948	60	68	60	0	9
FY2018	No. of Issues	516	3,152	2,505	3,269	17	364
	Outstanding balance	966	61	68	62	0	8
FY2019	No. of Issues	520	3,193	2,475	3,556	25	235
	Outstanding balance	978	62	67	70	0	7
FY2020	No. of Issues	536	3,261	2,624	3,769	23	223
	Outstanding balance	1,065	62	68	76	0	6
FY2021	No. of Issues	538	3,375	2,657	3,993	18	215
	Outstanding balance	1,096	64	65	82	0	5
FY2022	No. of Issues	539	3,462	2,670	4,161	16	206
	Outstanding balance	1,127	64	63	86	0	5
FY2023	No. of Issues	551	3,551	2,856	4,175	12	197
	Outstanding balance	1,147	64	60	91	0	5
FY2024	No. of Issues	556	3,644	2,898	4,291	12	197
	Outstanding balance	1,170	63	58	95	0	4

Note: Outstanding balance figures are in trillions of yen. The aggregation method has been partially changed since April 2019.

Source: Compiled from statistics on the Japan Securities Dealers Association website (issuance and redemption amount of public and corporate bonds)

company takes part in a transaction as the client's counterparty, are generally referred to as "principal transactions" and make up a significant proportion of trades in the bond market.

4. Reference Statistical Prices (Yields) for OTC Bond Transactions (1)

As OTC bond trading is a negotiated process between a securities company, etc. and a client, it is difficult for a third party to discover the price at which a transaction is completed. Disclosure of prices and other information concerning OTC bond transactions not only helps efficient and orderly trading of bonds but is also of critical importance from the standpoint of investor protection by promoting the formation of fair prices and facilitating investors' access to trading at the best possible price. Publication of bond prices is thus indispensable for the development of bond markets.

With a view to providing investors, securities companies, and others with reference information, the JSDA instituted the System for Dissemination of Reference Statistical Prices (Yields) for OTC Bond Transactions, which publishes (mid-price between buy and sell quotes) quotes for publicly offered bonds that meet certain criteria. The system was originally instituted in August 1965 by the Bond Underwriters Association of Japan for publishing OTC Quotes for Industrial Debentures and was succeeded by the Tokyo Securities Dealers Association, the predecessor of the JSDA, which began the system for dissemination of OTC quotations of bonds in March 1966. The initiatives were implemented against the backdrop of social necessity to promote the formation of fair prices and efficient and orderly trading for JGBs, issuance of which had been resumed after the war with a view to contributing to public interest and investor protection. The system has since undergone

Table VI-4. The System for Dissemination of Reference Statistical Prices (Yields) for OTC Bond Transactions

1. Outline

(1) Purpose

To publish quotations reported by member companies appointed by the Japan Securities Dealers Association to be used as reference by member companies of the association and their clients in trading bonds over the counter between them.

Note: In August 1965, the Bond Underwriters Association started publishing quotations on OTC industrial bonds. Subsequently, the Tokyo Securities Dealers Association started publishing OTC bond quotations in March 1966, and improvements have been made on several occasions thereafter.

(2) Calculation of Reference Statistical Prices (Yields) for OTC Bond Transactions

The JSDA receives reports from its member companies affiliated with the system (12 securities companies as of December 31, 2023) on quotations of trades with a face value of approximately ¥500 million as of 3:00 p.m. each trading day. The JSDA computes the reference prices (yields) of a given issue on the basis of an arithmetic average of quotations on issues with respect to which it has received reports from five or more member companies.

Table VI-5. History of System for Dissemination of Reference Statistical Prices (Yields) for OTC Bond Transactions

	Kinds of selectable issues	No. of selected issues
March 1966 Over-the-counter quotes announced · Date of announcement (Thursday of each week)	Government securities, municipal bonds, government-guaranteed bonds, coupon bank debentures, corporate bonds, telegraph and telephone (TT) coupon bonds subscribed to by subscribers, discount TT bonds, and such other bonds as may be recognized by the Japan Securities Dealers Association (JSDA)	No. of issues announced: 280 (as of May 12, 1966)
January 1977 · Announcement of bench-mark and standard quotes (Benchmark quotes are announced every day except Saturday. Standard quotes are announced once a week on Thursday.)	(1) Benchmark quotes (for institutional investors) are selected from such bonds whose volume of trading correctly reflects the movement of the market. (2) Standard quotes (for small-lot investors) are selected from one of government securities, municipal bonds, special debts, bank debentures, corporate bonds, and yen-denominated foreign bonds, other than those listed in (1) above in terms of maturities and interest rates.	(1) Benchmark quotes: Issues announced: 14 (as of January 31, 1977) (2) Standard quotes: Issues announced: 77 (as of January 27, 1977)
August 1978 · Announcement of bench-mark and standard quotes (bid and ask quotations are announced). (Benchmark quotes are announced every day except Saturday. Standard quotes are announced once a week on Thursday.)	The same as above.	(1) Benchmark quotes: Issues announced: 19 (as of August 31, 1978) (2) Standard quotes: Issues announced: 137 (as of August 31, 1978)
January 1992 · Standard quotes on OTC bonds are announced daily.	One of the government securities, municipal bonds, government-guaranteed bonds, bank debentures, corporate bonds, and yen-denominated foreign bonds that are not listed is selected in terms of kinds, maturities, and interest rates.	Issues announced: 298 (as of January 31, 1992)
April 1997 · No. of selectable issues was sharply increased (the new system started operating.)	Publicly offered but unlisted bonds (with a remaining life of one year or longer) that maintain a fixed interest rate throughout their life and redeem their principal in a lump sum were selected.	Issues announced: 1,746 (as of May 1, 1997)
December 1998 · The duty to concentrate its trading on the exchange market was abolished.	Publicly offered bonds (with paid-in principal, interest, and redemption money all paid in yen) are selected.	Issues announced: 2,867 (as of December 1, 1998)
August 2002 · Name of system changed to "Reference Statistical Prices (Yields) for OTC Bond Transactions." In addition to average values, highs, lows and medians are announced.	The same as above.	Issued announced: 4,198 (as of August 1, 2002)
December 2013 · Decision made to revise the calculation method for corporate and other bonds and announce quotes earlier.	The same as above.	Issued announced: 7,931 (as of December 2, 2013)
November 2015 · Start of operation of revised system	The same as above.	Issued announced: 8,257 (as of November 2, 2015)
May 2018 · Change of last announcement date due to the shortened settlement period (T+1) of JGBs.	The same as above.	No. of issues announced: 9,345 (as of May 1, 2018)
July 2020 · Change of last announcement date due to the shortened settlement period (T+2) of non-JGB bonds.	The same as above.	No. of issues announced: 10,423 (as of July 13, 2020)

Note: Selected issues reported on and after August 5, 2002, were transferred to the System for Dissemination of Reference Statistical Prices (Yields) for OTC Bond Transactions.

many changes and improvements in response to the changing environment surrounding the bond market. During that period, the number of published issues has ballooned from about 300 when the system was introduced to approximately 12,200. In August 2002, the JSDA changed the name of the data from Standard Quotes on OTC Bonds to Reference Statistical Prices (Yields) for OTC Bond Transactions to clearly indicate that the data is offered as a reference for OTC bond transactions. At the same time, the system was enhanced by publishing high, low, and median values of quotes in addition to the average, which had previously been the only data available.

Since the system started publishing bond quotes 60 years ago, its use has evolved from the original purpose of providing price references for OTC bond trading in Japan. In addition to that role, it has become widely used for mark to market valuation for financial reporting and tax accounting purposes and the valuation of collateral for different types of transactions. The expansion of usage required an even greater degree of confidence in the system. As a result, in 2013 a review was conducted of the quotation system primarily with regard to publishing reference statistical prices (yields) for corporate straight bonds. The new system arising from that review began operation in November 2015.

5. Reference Statistical Prices (Yields) for OTC Bond Transactions (2)

To provide reference information on bond prices, the JSDA publishes Reference Statistical Prices (Yields) for OTC Bond Transactions each business day based on the values of quotations for trades with a face value of roughly ¥500 million reported as of 3:00 p.m. by members designated by the JSDA (hereinafter referred to as "Designated-Reporting Members"). With calls made to further increase the reliability and stability of this publication system, however, the JSDA made some revisions to the system, primarily to the matters relating to corporate bonds. The new system was implemented in November 2015.

Major enhanced elements in the new system are as follows.

(1) Stricter designation standards for Designated-Reporting Members: Recognizing the need to appoint members with the capability to report appropriate quotations that reflect movements of the corporate bond market as Designated-Reporting Members in order to increase reliability of Reference Statistical Prices (Yields) for OTC Bond Transactions, stricter designation standards, such as the member's trading volume of corporate bonds, etc. must be within the top 20, were added.

(2) Enhancement and reinforcement of guidance and management structure at the JSDA: To ensure that proper reporting is made by Designated-Re-

Chart VI-3. Illustrated Flow of Procedure up to the Publication of Reference Statistical Prices (Yields) for OTC Bond Transactions

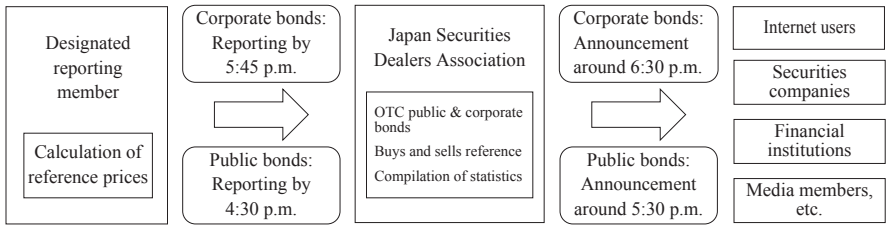


Table VI-6. Designation of Designated-Reporting Members

The Japan Securities Dealers Association screens members intending to become Designated-Reporting Members based on the following designation standards to specify Designated-Reporting Members.
(1) The member understands the purport of the System for Dissemination of Reference Statistical Prices (Yields) for OTC Bond Transactions and intends to become a Designated-Reporting Member.
(2) The member is well versed in the operations for OTC bond trades.
(3) The member has in place an organizational structure and staffing required for properly executing the operation for reporting quotations.
(4) Other matters set forth by the JSDA.
*For further details on screening standards, please see the website of the JSDA.

porting Members, the JSDA performs checks to detect (i) any inappropriate quotations for each business day and (ii) any problems with the reporting framework of each Designated-Reporting Member.

(3) Revised calculation method for Reference Statistical Prices (Yields) for OTC Bond Transactions: When the reported corporate bond quotations are relatively dispersed and there is major price volatility in the market, quotations that deviate significantly from the average quote may actually be more appropriate, and because abnormal values are eliminated in the checking performed in (2), it was decided that truncating the highest and lowest values of reported quotations, which was previously done mechanically, would no longer be performed.

(4) Pushing back the reporting deadline and the time of announcement: In consideration of feedback from non-reporting members raising the need to push back the reporting deadline for bond quotations in order to make reports, the deadlines for trade reporting and for announcement were pushed back by 75 minutes and 60 minutes respectively.

(5) Promoting better understanding of Reference Statistical Prices (Yields) for OTC Bond Transactions: It was decided that more easy-to-understand explanations of the characteristics of the Reference Statistical Prices (Yields)

Table VI-7. Revisions to Reference Statistical Prices (Yields) for OTC Bond Transactions

Revision measures	Outline	Revisions to bonds applicable to reporting
(1) Stricter designation standards for Designated-Reporting Members	Added the following specific standards in acknowledging that the member is "well versed in the operations for OTC bond trades." · A Designated-Reporting Member that reports quotations on corporate bonds, etc. shall be ranked within the top 20 in terms of the bond trading volume. · However, reporting may be made for bond trades for which the member serves as the lead managing underwriter.	Corporate bonds, TMK bonds, yen-denominated foreign bonds
(2) Enhancement and reinforcement of guidance and management structure at the JSDA	· Adoption of a process to check the reported quotations (including warnings issued to Designated-Reporting Members) every business day · Adoption of a process to check the reporting systems of Designated-Reporting Members · Setting self-regulatory regulation of prohibiting information exchange, etc. relating to quotation standards between Designated-Reporting Members	All debt securities
(3) Revisions to the method of calculating reference statistical prices for OTC bond transactions	· Removal of the step to cut off the highest and lowest quotations reported	Corporate bonds, TMK bonds, yen-denominated foreign bonds
(4) Pushing back the time of reporting deadline and the time of announcement	· Pushed back the time of reporting deadline by 1 hour and 15 minutes to 5:45 p.m. · Pushed back the time of announcement by about 1 hour to 6:30 p.m.	Corporate bonds, TMK bonds, yen-denominated foreign bonds
(5) Promoting better understanding of reference statistical prices (yields) for OTC bond transactions	· Easier-to-understand explanations on the nature, etc. of reference statistical prices (yields) for OTC bond transactions, such as the possible deviation from actual trade prices, on the JSDA website, etc.	All debt securities

for OTC Bond Transactions should be posted on the JSDA website, etc., such as the fact that the Reference Statistical Prices (Yields) for OTC Bond Transactions referred to the mid-price of bid and ask, and therefore may differ from actual transaction prices.

6. Reporting & Announcement System of Corporate Bond Trading

Recognizing the importance of increasing transparency of information on corporate bond prices and securing reliability through providing bond trading data in an aim to vitalize the corporate bond market, the JSDA decided to disclose actual trading prices of corporate bond trades on the OTC market from November 2015.

This system is composed of the JSDA's system to receive reporting on transaction prices, etc. from member securities companies and the system to disclose the reported transaction prices, etc.

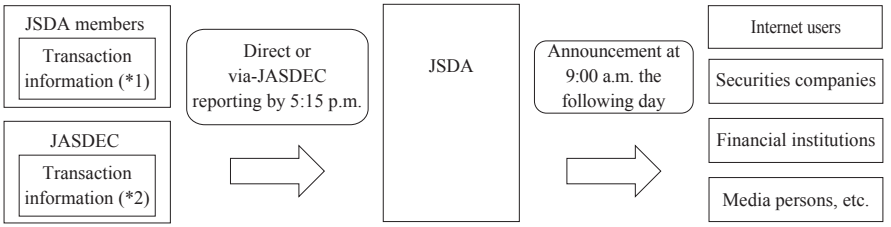
(1) System of reporting corporate bond transactions: JSDA's Self-Regulatory Rules set out reporting requirements on securities companies (JSDA members) that participate in a bond transaction. Reporting is required for bonds that meet the following criteria: (i) publicly offered or sold in Japan, (ii) issued in Japan, (iii) principal, interest, and redemption proceeds are yen-denominated (excluding short-term corporate bonds and corporate bonds with subscription rights/warrants). Transactions subject to reporting include the following: (i) transactions that are reported every business day (trades with a face value of ¥100 million or above) and (ii) transactions that may be reported on a monthly basis if notified to the JSDA (trades with a face value of less than ¥100 million; provided, however, that transactions with a face value of less than ¥10 million may be omitted from reporting).

(2) System of disclosing corporate bond transactions: The JSDA announces information on bond trades on its website on the business day following the day on which reports on trades are received from securities companies. Disclosed items are: (i) contract date, (ii) issue code, (iii) name of issue, (iv) due date, (v) coupon rate, (vi) trading value (whether the face value is ¥500 million or more), and (vii) unit price (traded price per face value of ¥100 yen), and (viii) buy or sell (whether the counterparty of securities company is a buyer or seller). In addition, eligible corporate bonds are those with an issue rating equivalent to AA or higher, or an issue rating equivalent to A and an issue size of ¥30 billion or more (excluding subordinated bonds and bonds with a remaining maturity of 20 years or more).

In addition, when certain conditions apply, such as abnormal fluctuations in the Reference Statistical Prices (Yields) for OTC Bond Transactions, the announcement of such corporate bond transactions is suspended.

(3) Periodical verification: The JSDA has decided to periodically review the impact, etc. of the implementation of the system of disclosing corporate bond transaction information on the liquidity of corporate bonds and to consider revising the system if needed.

Chart VI-4. Illustrated Flow of Reporting & Announcement of Corporate Bond Trading



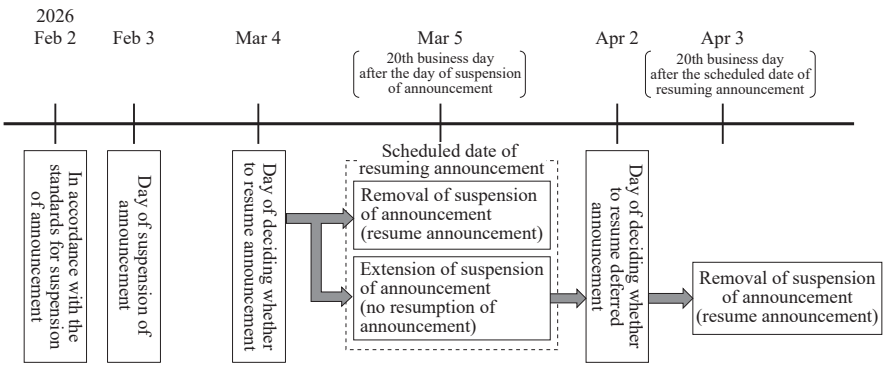
(*1) Transactions processed (or approved) by the system between 3:00 p.m. on the previous business day and 3:00 p.m. on the day.
(*2) Trade reporting data transmitted to the settlement reconciliation system between 4:45 p.m. on the previous business day and 4:45 p.m. on the day.

Chart VI-5. Information announced

○Announced on December 1, 2021
Trade contract date: November 30, 2021

Issue code	Issue name	Redemption date	Coupon rate	Trading type	Transaction volume (face value basis) of ¥500 million or above	Transaction volume (face value basis) of less than ¥500 million	Contracted unit price (¥)	[Reference] Reference Statistical Prices (Yields) for OTC Bond Transactions (Average Prices)
000039023	XX Industries 3	2027/09/20	1.9	Sell	*		102.△△	102.09
000039023	XX Industries 3	2027/09/20	1.9	Buy		*	102.××	102.09
000039023	XX Industries 3	2027/09/20	1.9	Sell		*	102.●●	102.09

Chart VI-6. Example of suspension of announcement and removal of suspension of announcement



7. Book-Entry Transfer System for Bonds

In the past, investors held bonds in various forms—more specifically, as physical certificates issued by the issuers; in registered form, where bondholders are registered on the registry at the registrar designated for the issue; and as book-entry JGBs, where physical certificates are deposited with the BOJ so that trades can be settled by book-entry transfers (within the system established in 1980) via the accounts of brokers and other system participants (account management institutions).

However, with the increasing bond trading volume, it was evident that the existing management measures of bondholders' ownership by means of certificates, which needed to be physically delivered, or registered bonds, whose transfer required amendment in records of bond-specific registries, would encounter a capacity bottleneck in terms of settlement procedures, and that the book-entry transfer system for JGBs had several shortcomings. The situation indicated that the settlement procedures for bonds were in need of review. There was a growing perception that Japan urgently needed to update its existing system to create a safer and more efficient infrastructure that would

Chart VI-7. Structure of Book-Entry Transfer System for Bonds

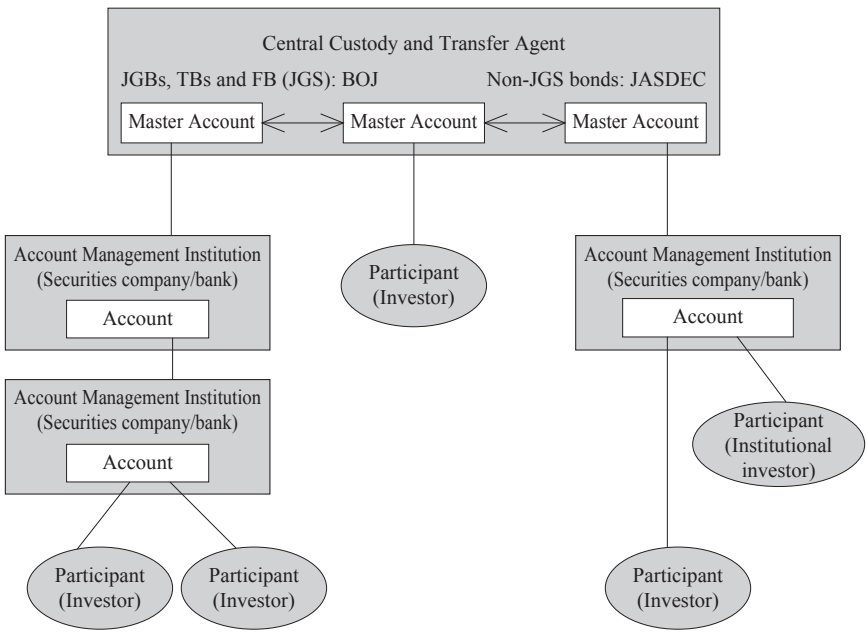


Table VI-8. Bonds under Custody and Book-Entry Transfer Volume

(No. of transactions, millions of yen)

		Increase: Underwriting new issues	Decrease: Redemptions and retirement by purchase	Transfer	Number of participating issues (at fiscal year-end) Account balance
FY2015	No.	25,722	30,604	524,130	53,825
	Amount	31,146,061	32,462,918	204,529,981	250,462,702
FY2016	No.	27,401	28,040	349,226	58,288
	Amount	41,737,175	35,052,475	131,163,539	257,147,401
FY2017	No.	28,345	27,238	287,072	63,087
	Amount	34,276,788	34,479,534	140,831,156	256,944,654
FY2018	No.	28,885	26,163	289,272	68,826
	Amount	36,439,329	31,520,591	145,921,506	261,863,392
FY2019	No.	26,765	26,564	318,896	74,569
	Amount	37,743,822	31,844,372	146,798,435	267,762,842
FY2020	No.	21,821	25,775	300,113	77,900
	Amount	41,438,860	31,240,061	127,984,617	277,961,641
FY2021	No.	21,625	26,606	279,406	79,698
	Amount	34,443,264	30,376,651	135,203,174	282,028,255
FY2022	No.	19,853	27,238	278,021	79,759
	Amount	29,526,381	30,182,012	120,348,438	281,372,624
FY2023	No.	18,705	29,391	258,430	76,935
	Amount	31,747,907	33,520,994	119,361,277	279,599,537
FY2024	No.	17,068	29,556	270,417	72,040
	Amount	31,341,335	31,952,888	125,538,256	278,987,983

Note: The JGB book-entry system began on January 10, 2006.
Source: Compiled from Japan Securities Depositary Center website (Book-Entry Transfer System for Corporate Bonds)

make the country's securities markets globally competitive. Against this background, the Securities Settlement System Reform Law was enacted in June 2002, and, pursuant to its provisions, the existing legislation for book-entry transfer was later amended and renamed the Act on Book Entry of Corporate Bonds and Shares with objectives including the complete dematerialization of securities ("going paperless"), the shortening of settlement cycles, and the reduction in settlement risk. The amended law provided for the legal framework of new book-entry transfer systems for corporate and government

Table VI-9. Reforms of Bond Delivery and Settlement System

Month/Year	Changes implemented
April 1994	Delivery versus payment (DVP) of government bonds through the Bank of Japan network starts.
April 1977	System of T+3 government bond rolling settlement starts.
October 1999	System of T+3 general bond rolling settlement starts.
January 2000	Real-time gross settlement (RTGS) of government bonds starts.
January 2003	Act on Book Entry of Corporate Bonds and Shares (stipulating paperless trading in bonds, etc.) is enforced. Paperless trading in government bonds starts.
May 2004	DVP trading in bonds other than government bonds starts.
May 2005	Trading in government bonds through a settlement organization starts.
January 2006	Paperless issuance of and paperless trading in bonds other than government bonds starts.
April 2012	Shortening of settlement of JGBs starts. (T+2)
May 2018	Shortening of settlement of JGBs starts. (T+1)
July 2020	Shortening of settlement of retail JGBs and general bond transactions starts. (T+2)

securities. On the basis of that framework, the BOJ renovated the existing JGB book-entry system in January 2003, and the Japan Securities Depository Center (JASDEC) started operating a new central custody and book-entry transfer system for securities, including non-government bonds in January 2006.

The book-entry transfer system has a multi-tier, tree-like structure. At the top tier of the system are the Book-entry Transfer Institutions—the Bank of Japan for government bonds and JASDEC for other eligible securities. The second tier consists of Account Management Institutions (such as securities companies and other institutions that maintain accounts with a Book-entry Transfer Institution). Beneath each Account Management Institution are other securities companies and investors that maintain accounts with that institution. Ownership of bonds is recorded through entries in the Transfer Account Books maintained by the Book-entry Transfer Institutions and the Account Management Institutions. In principle, all bonds in the book-entry transfer system are incorporated into the system at the time of issuance. With the entire issue being dematerialized, none of those book-entry bonds may be withdrawn over their life in the form of either physical certificates or registered bonds.

The Securities Settlement System Reform Law also provided measures to abolish the Corporate Bond Registration Law following the setup of the book-entry transfer system.

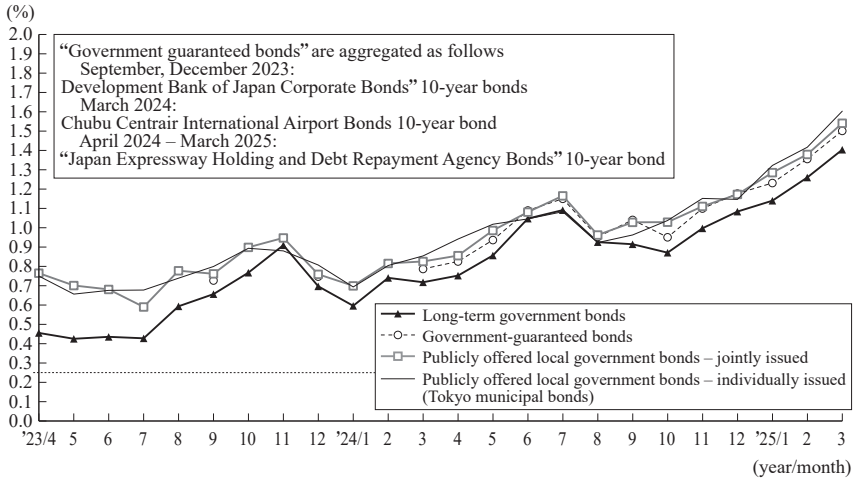
8. Bond Yields and Terms of Issuance

Those who raise funds (fund-raising party) by issuing bonds look for the lowest possible cost. On the other hand, investors who buy bonds choose issues that offer the highest possible return within the range of tolerable risk. In theory, the terms of issuance of a new bond (subscriber's yield) are determined at a certain level where opportunities for arbitraging its subscriber's yield to maturity and the secondary market yield (yield to maturity) of outstanding issues of a nature similar to that of the bond are balanced. When such a balance is achieved, it is said that "the terms of issuance that adequately reflect the secondary market conditions have been established." Important conditions for efficient arbitrage to occur include the following: the outstanding balance and trading volume of comparable bonds are sufficiently large, new bonds are issued regularly, and the secondary market yields of comparable bonds are available for reference at the time of pricing new issues. It can be said that in the Japanese bond market, yields of newly issued bonds have come into line with yields of comparable bonds as new issues of bonds and secondary trading volumes of such bonds have increased.

More specifically, while JGBs had been issued through the underwriting syndicate program for smooth and stable financing, the proportion of bond issuance through competitive bidding that more closely reflect market conditions has steadily increased under a market-oriented national debt management policy, replacing the previous emphasis on non-competitive, syndicated underwriting, where issue terms were based on the official discount rate or other benchmarks. Currently, in principle, all government bonds (excluding those for retail investors) are issued through auctions (the syndicated underwriting program for JGBs was discontinued in March 2006).

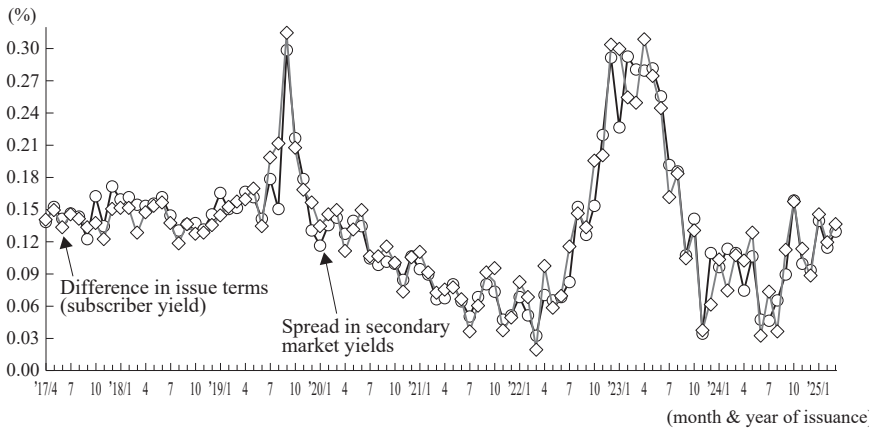
The market-oriented transition of bond issuance has also been clear in pricing spreads among bonds with different credit qualities. For example, yields at the issue of government-guaranteed bonds and local bonds are determined in reference to the yield at issue of 10-year JGBs issued earlier in the month. From time to time in the past, the spreads of issues among the three classes of bonds deviated from market spreads. In recent years, however, as investors started to focus more on differences in credit quality, the spreads of issues among the three classes have increasingly tended to move more in line with credit spreads prevailing in the market. Another case in point that demonstrates the increased market orientation in bond issuance is that a growing portion of government-guaranteed bonds is now issued through a competitive bidding process (as individual issues). Investors are also showing an increasing tendency to differentiate corporate bonds based on credit ratings by rating agencies, ESG initiatives and other factors. In re-

Chart VI-8. Changes in Issue Terms (Yields) of Bonds



Source: Compiled from statistics on the Ministry of Finance website (JGB auction results) and the Japan Securities Dealers Association website (list of Bond Issues).

Chart VI-9. Changes in the Difference in Issue Terms and Secondary Market Yields between Publicly Offered, Jointly Issued Municipal Bonds and Government-Guaranteed Bonds



Notes: 1. Spread in secondary market yields is the difference in reference prices of OTC traded public and corporate bonds (average value: simple interest) on the day prior to the term determination date of jointly issued local government bonds and of government guaranteed bonds (10-year long-term).
2. Difference in issue terms (subscriber yield) is jointly issued local government bonds minus government guaranteed bonds (each 10-year bonds).

Source: Compiled from statistics on the Japan Securities Dealers Association website (Issuing, Redemption and Outstanding Amounts of Bond, Reference Statistical Prices (Yields) for OTC Bond Transactions)

sponse to this, many issuers go through a premarketing process to identify and estimate investors' demand and determine the terms of issuance accordingly.

9. *Gensaki* Market for Bonds (1)

A repurchase agreement (*gensaki* transaction) (a conditional purchase or sale) is a form of trading between a seller and a buyer of bonds whereby the seller (or the buyer) agrees to repurchase (or resell) the securities at an agreed-upon price at a stated time. When the holder of bonds sells them to a buyer under an agreement to buy them back (a *gensaki* sell transaction), the holder can raise funds on a temporary basis. When the counterparty buys bonds from a seller under a repurchase agreement to sell them back to the seller (a *gensaki* buy transaction), the buyer can earn a certain amount of interest by investing funds for a short period. When a securities company, etc. acts as an intermediary and arranges a *gensaki* transaction by introducing a buyer who wants to invest idle cash in bonds to a seller which wants to raise funds by selling bond holdings, such a deal is called a brokered repurchase agreement. When a securities company, etc. that is in need of short-term cash sells bonds out of its inventory to an investor under a repurchase agreement, it is called a proprietary repurchase agreement. As the repurchase (or resale) price includes an amount equivalent to a return on investment or financing charge based on an agreement by the buyer and seller, the price does not usually correspond to the market price of the bond prevailing at the time of its repurchase (or resale).

Despite some annual fluctuations, *gensaki* transactions have maintained a significant level of trading volume because they conveniently meet short-term funding and cash management requirements. The outstanding balance of *gensaki* transactions reached almost ¥50 trillion at the end of fiscal 2007, compared with ¥7 trillion in the latter 1980s. Although there have been some dips in the balance since then due primarily to the effects of the global financial crisis, the trend has been upward since 2010. After the settlement period for government bond transactions was compressed (to T+1) in May 2018, the trading volumes and outstanding balance of *gensaki* transactions have increased sharply in line with the shift from general collateral repos to repurchase repo transactions. The trading volume in fiscal 2024 exceeded ¥56 quadrillion, and the outstanding balance as of the end of fiscal 2024 was approximately ¥300 trillion.

Previously, the overwhelming majority of *gensaki* transactions were for short-term government securities (Treasury Bills (TBs) and Financing Bills (FBs)), supported by the increasing trading activity of TBs and FBs, which

Chart VI-10. Working Mechanism of Bond Lending (secured with cash deposit)

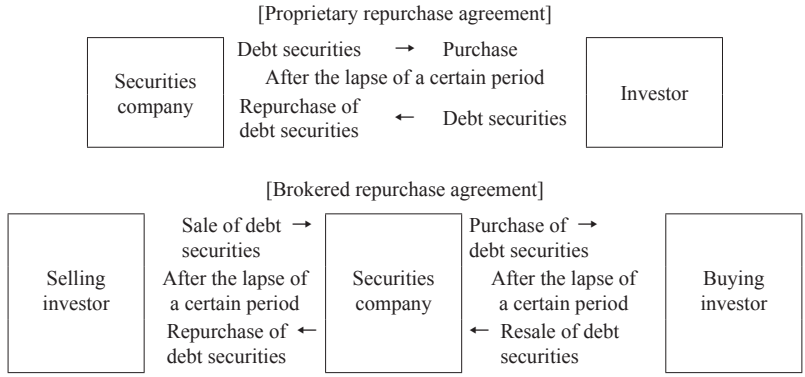


Table VI-10. Turnover and Balance of Bond Repurchase Agreements (*Gensaki*)

(¥10 billion, %)

FY	Turnover of bonds (A)	Turnover of repurchase agreements (B)	B/A	Balance of repurchase agreements
2015	1,039,539	758,277	72.9	3,053
2016	928,393	691,841	74.5	3,344
2017	992,339	762,223	76.8	4,024
2018	1,897,392	1,668,849	88.0	11,642
2019	2,604,641	2,370,929	91.0	15,635
2020	3,057,865	2,792,828	91.3	14,841
2021	3,571,685	3,311,744	92.7	17,846
2022	4,845,247	4,552,117	94.0	21,462
2023	5,660,991	5,368,769	94.8	26,667
2024	5,942,686	5,638,845	94.9	29,991

Notes: 1. Figures include government bond basket transaction from May 2018.
2. Fiscal year-end balance (March 31st)

Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume of public and corporate bonds; OTC trading volume by bond type; monthly outstanding amounts of conditional sale and purchase of bonds (*gensaki* transactions) by investor type)

Table VI-11. Balance of Bond Repurchase Agreements, by Major Investor Group

(¥10 billion)

	FY2015		FY2016		FY2017		FY2018		FY2019		FY2020		FY2021		FY2022		FY2023		FY2024	
	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance	Selling balance	Buying balance
Trust banks	0	0	0	0	0	0	1,715	1,396	1,895	1,537	1,638	1,386	1,943	1,658	2,263	1,785	2,728	2,114	2,818	2,101
Other banking institutions	0	0	5	0	0	0	1,843	776	2,179	1,136	2,423	1,035	3,596	851	4,688	616	4,744	1,265	5,516	1,673
Investment Trusts	0	0	0	0	0	0	0	27	0	14	0	26	0	21	0	21	0	128	0	169
Corporations	0	4	0	3	0	3	0	2	0	2	0	1	0	1	0	1	0	1	0	2
Entities not domiciled in Japan	754	2,228	572	2,373	882	2,988	1,175	2,995	1,818	4,254	1,329	3,888	1,271	4,952	1,271	5,948	2,469	6,730	2,716	7,989
Others	66	46	384	55	151	119	820	1,392	1,731	1,844	1,731	2,256	1,952	2,336	2,515	3,225	4,087	4,209	4,551	4,342
Bond dealers	2,233	774	2,383	914	2,991	913	6,088	5,054	8,012	6,846	7,719	6,250	9,084	8,027	10,726	9,867	12,638	12,220	14,390	13,716
Total	3,053	3,053	3,344	3,344	4,024	4,024	11,642	11,642	15,635	15,635	14,841	14,841	17,846	17,846	21,462	21,462	26,667	26,667	29,991	29,991

Source: Compiled from statistics on the Japan Securities Dealers Association website (OTC trading volume by bond type; monthly outstanding amounts of conditional sale and purchase of bonds (*gensaki* transactions) by investor type)

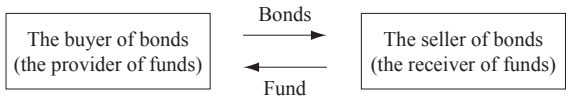
have maturities and credit quality more suitable for *gensaki* transactions compared to other instruments in the secondary market. More specifically, these short-term government securities dominated the market because in 1986, (1) the government introduced public auctions for TBs on the basis of the principle that the government securities must be absorbed by private-sector market participants, and (2) the method by which the BOJ sold FBs acquired at issuance to the market was changed to the *gensaki* format, and in 1999 (3) the government introduced public auctions for FBs on the basis of the same principle. Subsequently, the issuance of both TBs and FBs has been regular and of large volume. Although the *gensaki* market developed primarily against the backdrop of this expansion of the short-term government securities market, interest-bearing JGBs have taken center stage in recent years, partially because of the massive overall issuance of government bonds.

10. *Gensaki* Market for Bonds (2)

In an effort to modernize and strengthen the international competitiveness of Japan's money market, the *gensaki* was reformed to improve its functions as a repo market to meet the need for both short-term financing and bond borrowing, and thus what came to be called new *gensaki* transactions started in April 2001. Up to that point, *gensaki* transactions were bought and sold much

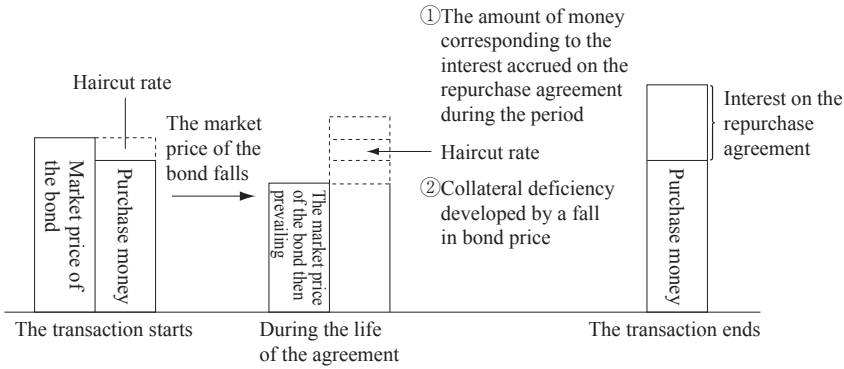
Chart VI-11. Working Mechanism of the New *Gensaki* Transaction System

1. Start of transaction



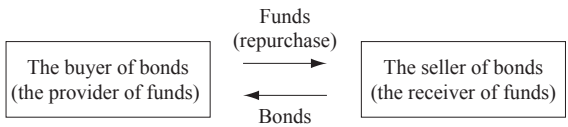
- Purchase money for bonds
  The market price of the bonds prevailing at the time a deal is struck ÷ (1 + haircut rate) × number of bonds traded

2. Control of credit risk during the life of the agreement



- Credit given to the seller of the bonds by the buyer of the bonds (the provider of funds) = ① + ②
- In the case referred to above, the buyer of the bonds can demand collateral (cash and/or bonds) of the seller, the value of which is equal to the credit given him (margin call).

3. End of transaction



- Money to repurchase the bonds is necessary for the seller at the time the transaction is consummated.
- The money of the buyer is needed to purchase the bonds at the time the transaction started + interest accrued on the repurchase agreement.

like the transactions commonly known as repo trades in the U.S. and Europe but had various shortcomings that cried out for reform. In particular, the *gensaki* market did not have functional risk management facilities or standard rules for dealing with counterparty default. Therefore, measures were taken to establish new *gensaki* transactions, on the basis of the existing system, in

accordance with global standards through the development and expansion of various mechanisms including risk management.

The new provisions for risk management and other purposes (clauses in the repurchase agreement) are as follows:

(1) Risk control clause:
The amount of collateral (bonds) is adjusted flexibly so as not to cause a shortage of collateral on account of a fall in the price of bonds submitted as collateral.
(i) Application of the ratio for computing the purchase/sale value of bonds (the haircut clause): A mechanism is established to ensure that the unit price used in the repurchase agreement is lower by a certain rate than the market price of the bonds at the time of execution, so that there is no shortfall in collateral even if the market value of the bonds declines during the trading period.
(ii) Application of a margin call clause (collateral management, etc.): A mechanism is established to ensure that the amount of credit extended is maintained by adjusting collateral so that the market value of the bonds is consistent with the amount of collateral (i.e. the buyer has the right to require the seller to put up collateral if the market value of the bonds declines).
(iii) Application of repricing: If the market price of the underlying bonds falls sharply from the price at the time of the repurchase agreement, the parties to the agreement agree to cancel the agreement and renegotiate a new agreement on the basis of the price then prevailing, on terms and conditions identical to those of the agreement thus canceled.

(2) Substitution of underlying bonds:
Under this clause, the seller of bonds can replace the underlying bonds with other bonds with the consent of the buyer, allowing the seller to use the underlying bonds if necessary.

(3) Institution of a netting-out system:
If the other party goes into default for any reason, such as bankruptcy, the value of all transactions covered by the agreement will be reassessed based on market prices, and the difference between claims and obligations will be settled.

11. Bond Lending

When investors have shorted bonds (or sold bonds that they do not own) and failed to buy them back before the settlement date, they enter into bond lending transactions to borrow bonds to deliver. When cash is used as collateral

Chart VI-12. Trading Mechanism of Repurchase Agreements

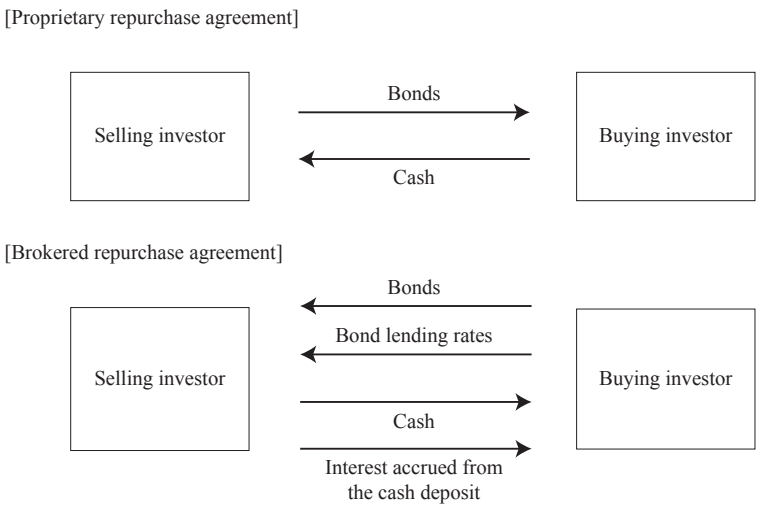


Table VI-12. The Balance of Bond Lending Transactions, by Type of Collateral (on the basis of delivery and face values)

(¥10 billion)

End of	Bonds lent				Bonds borrowed			
	Secured transactions	Secured by cash deposit	Unsecured transactions	Total	Secured transactions	Secured by cash deposit	Unsecured transactions	Total
2015	9,680	9,454	450	10,130	9,680	9,454	450	10,130
2016	12,316	12,178	428	12,744	12,316	12,178	428	12,744
2017	13,093	12,903	806	13,899	13,093	12,903	806	13,899
2018	5,536	5,370	846	6,382	5,536	5,370	846	6,382
2019	5,589	5,419	1,160	6,749	5,589	5,419	1,160	6,749
2020	5,232	5,041	1,040	6,273	5,232	5,041	1,040	6,273
2021	5,645	5,413	919	6,564	5,645	5,413	919	6,564
2022	7,347	7,101	760	8,108	7,347	7,101	760	8,108
2023	6,926	6,702	883	7,808	6,926	6,702	883	7,808
2024	8,013	7,733	965	8,978	8,013	7,733	965	8,978

Note: Breakdowns of bond lending transactions have been published since January 1997. A partial revision was made to the calculation method in January 2009.

Source: Compiled from statistics on the Japan Securities Dealers Association website (bond borrowing and lending transactions - list)

for bond lending transactions, some of these transactions are conducted for short-term funding or investment, similar to *gensaki* transactions. Bond lending services enable investors to execute sell orders even if they do not own bonds (short sell), which is expected to lead to improvement of bond market liquidity.

Bond lending was instituted by the lifting of the practical ban on bond short selling in 1989. Traditionally, market participants had refrained from short selling bonds because of concerns over potential repercussions on brokers' and financial dealers' financial soundness and the potential impact on bond pricing. This ban, however, was lifted to help encourage active market making in cash bonds, and arbitrage between cash bonds and futures. Bond lending was introduced as a means to locate bonds for delivery. Initially, cash collateral bond borrowing and lending was restricted in light of potential conflicts with the *gensaki* market and other considerations, and, subsequently, most transactions were uncollateralized. However, with credit fears rising, the bond lending market remained stagnant and cash collateral bond borrowing and lending transactions were effectively deregulated in 1996 in order to invigorate the market.

When viewed from a legal standpoint, a bond lending transaction is deemed to be a contract for a loan for consumption. A borrower borrows bonds for the purpose of consumption and, when due, the borrower has only to return bonds identical in kind and quantity with those originally borrowed. Bond lending transactions may be broadly classified into "secured transactions" and "unsecured transactions" depending on whether they are collateralized or not. Secured bond lending transactions may be further divided into "cash-collateralized transactions" and "securities-collateralized transactions" by the type of collateral being pledged. Cash-collateralized transactions used to borrow specific bond issues are called SC *torihiki* (specified collateral trades), while those without such specifications that mainly aim for financing and cash management are termed GC *torihiki* (general collateral trades). The size of the bond lending transactions market (in terms of the balance of outstanding loans) has generally been on the rise since cash-collateralized transactions were deregulated in 1996. The market has grown from approximately ¥34 trillion at the end of fiscal 1996 (including approximately ¥17 trillion in cash-collateralized transactions) to ¥139 trillion at the end of fiscal 2017 (including approximately ¥129 trillion in cash-collateralized transactions). At the end of fiscal 2024, the market had fallen to around ¥90 trillion (including approximately ¥77 trillion in cash-collateralized transactions), reflecting the recent trend toward increased usage of *gensaki* transactions.