

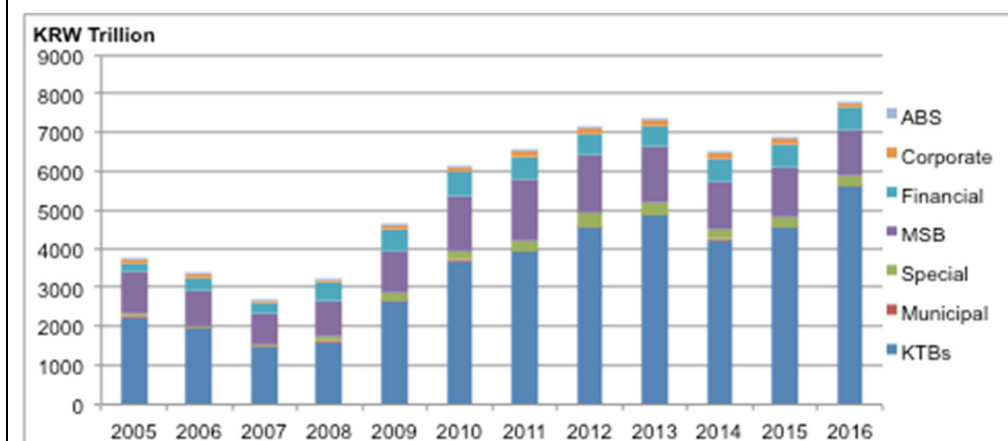
Bond and Note Transactions and Trading Market Infrastructure

A. Trading of Bonds and Notes

The Republic of Korea has a well-functioning secondary bond market. Bonds and notes are actively traded not only on the OTC market but also on the exchange market. Unlike the bond markets in other countries, the proportion of exchange trading in the Republic of Korea is relatively high, accounting for about 55% of all bond market trading.

In the exchange market, only listed bonds that are publicly offered can be traded. There is no restriction in the OTC market on the issuance method. Nevertheless, almost all bonds traded in the OTC market, especially on the K-Bond platform, are also publicly offered bonds.

Figure 4.1: Trading Volumes by Bond Type



ABS = asset-backed securities, KRW = Korean won, KTBs = Korea Treasury Bonds, MSBs = Monetary Stabilization Bonds.

Notes: Data as of end-December for each calendar year. Financial refers to bonds issued by banks and financial institutions.

Source: Korea Financial Investment Association. <http://www.kofibond.or.kr/>; Korea Exchange. <http://www.krx.co.kr/>

In the past, especially before the 1997/98 Asian financial crisis, the trading of corporate bonds dominated the secondary bond market in the Republic of Korea. More recently, public bonds, especially KTBs and MSBs, dominate trading activities in the market. The proportion of the different types of traded bonds has also changed over the years. The proportion of government bonds has grown steadily, accounting for approximately 70% of the total trading volume at the end of 2016, with KTBs the dominant bond type (Figure 4.1).

Aside from KTBs, the other primary drivers of the Korean bond market have been transactions in government and public bonds, which include MSBs, municipal bonds,

and special bonds. These bonds collectively make up the largest share of the market's trading volume. The proportion of financial bond and corporate bond transactions (including ABS) has remained steady at around 10% since 2005, recording 9.7% in 2016.

Almost all participants in the Korean bond market are institutional investors such as pension funds, asset management companies, financial investment companies, commercial banks, and insurance companies. Secondary market trading among bond investors is made through investment brokers in both the OTC market and the exchange market.

B. Market Segments and Trading Platforms

In a typical bond market, bonds and notes tend to be traded in the OTC market. In the Korean bond market, however, trading on the exchange platform represents a sizable portion of the overall market trading volume. The OTC trading volume is calculated as the sum of the buy and the sell amounts reported separately by the securities firms (the so-called double-counting). Meanwhile, the exchange trading volume is calculated as the executed amount of the trade (the so-called single-counting). The OTC trading volume is, hence, usually shown as double the amount traded in the OTC market.

The individual markets and their trading platforms are explained in greater detail in this section.

1. Over-the-Counter Market

The traditional OTC market itself is less a trading platform and instead an organized market. Trades in bonds and notes are concluded directly between institutional counterparties via phone or using the services of a voice broker or inter-dealer broker. Individual dealers may also use Bloomberg or similar global trading system providers, and/or an in-house trading system to carry out bond and note trading activities. Trading in the OTC market in the Republic of Korea is divided into this traditional OTC market and the K-Bond system operated by KOFIA, with the majority of OTC transactions executed on K-Bond.

Historically, OTC bond trading had accounted for a high proportion of the entire Korean bond market, about 98%–99% of all bond trading, before the Government of the Republic of Korea made it mandatory in October 2002 for Primary Dealers to deal on the exchange market for the purpose of supporting the development of the KTB market. After adopting the measure, Primary Dealers increased bond dealings on the exchange market, bringing the ratio for OTC to exchange market trading to 60:40.

The main participants in the OTC bond market are institutional investors, including banks, asset management companies, pension funds, and insurance companies. Institutional investors trade bonds through financial investment firms that serve as brokers.

Each institutional investor presents a bid–ask price to the financial investment firm they trade with, while the investment firm matches bid–ask prices to complete the transaction, and can exchange bid–ask prices with other firms to facilitate trading when necessary.

2. K-Bond

The OTC bond market in the Republic of Korea had traditionally used telephone-based voice trading for negotiated transactions.

Based on the Plan for Improving the Secondary Bond Market, which was issued by the FSC in October 2009 to, among others, establish a specialized bond trading system, KOFIA launched FreeBond, an online bond trading system, in April 2010. FreeBond enhanced efficiency in OTC trades by putting together individually scattered OTC trading functions into a single trading platform with messenger and chat room features.

FreeBond was upgraded to K-Bond in August 2017. As of the end of Mar 2018, 312 institutions and 6,622 individuals were registered with K-Bond, of which 226 institutions and 3,199 individuals were active users, based on the daily average trading volume.

K-Bond enables financial investment firms and market participants to discover quotes, and supports trade negotiations. Participants refer to bond trading brokers, dealers, managers, and traders approved by KOFIA, pursuant to its regulations on the registration of financial investment companies, as the SRO for the OTC market in the Republic of Korea.

K-Bond comprises two main components: an instant messenger system and the Trading Board (T-Board). The messenger function provides functions specialized for bond trading negotiations, including chat rooms, which allow participants to discuss 1 to N participants and conclude transactions in private; it also offers the automatic storage of chatting records. T-Board offers various types of bond market data, such as market quote information, 15-minute information, and book-building related information for market analysis.

All financial investment companies engaged in OTC bond trading are required to subscribe to K-bond. Most of the institutional investors that trade bonds in the Republic of Korea—such as pension funds, insurers, credit unions, and banks—are members of K-Bond. K-Bond also distributes bond trading details to the market within 15 minutes (see also section C).

Delivery of the bonds and settlement for OTC trades are carried out simultaneously at KSD, with the settlement date ranging from T+1 to T+30, although most settlements occur on T+1. When foreign investors trade Korean bonds, time differences result in T+3 and T+4 settlements being commonplace. Repo bonds, municipal bonds, and retail bond transactions may all be settled on the same day (T+0).

In December 2007, KOFIA introduced the OTC Bond Quotation System (BQS) in order to boost transparency in the market. The system collects and reports bid–ask prices of all bonds in the OTC market with a par value over KRW5 billion. The collected bid–ask prices are then disclosed to all market participants through the BQS, as well as through information terminals of the CHECK and INFOMAX systems (see section E).²⁴

3. Trading on Korea Exchange

On KRX, the bond market and other regular trading markets are grouped under the KOSPI market, which takes its name from the acronym for the Korea Composite Stock Price Index, the representative index from the original stock market on KRX. According to provisions in the FSCMA, the KOSPI market was established for the trading of securities such as equity securities, debt securities, beneficiary securities, investment contract securities, derivative-combined securities, and depositary receipts.

Bond trading on KRX is conducted on an electronic trading platform. Users can access the trading platform through the members-only network and the internet. KRX KTB, in

²⁴ See www.bqs.or.kr

particular, is a web-based platform; dealers can participate by installing a trading program offered by KRX on their computers.

KRX introduced the Electronic Request for Quote (e-RFQ) concept through screens in March 2016, in addition to the Central Limit Order Book (CLOB), to meet the needs of the market and improve market participants' convenience.

KRX also launched the electronic trading infrastructure Exture+ in March 2014. The Exture+ system is web-compatible as well as being compatible with KRX's Direct Market Access network; therefore, all KRX markets are accessible for global investors, regardless of their domicile and time zone, at no additional charge.

As of February 2018, the KRX bond market comprised four segmented markets: KRX KTB; KRX BondsAll, in which all bonds listed on KRX are traded; KRX LPB; and KRX Repo, which specializes in trading specified bonds.²⁵ Competitive auction is the basic trading method used on the platforms in KRX bond market segments. Trading hours for all market segments are from 9 a.m. to 3:30 p.m. Table 4.1 displays this and other market segment features in a practical overview.

Table 4.1: Overview of Korea Exchange Bond Market Segments

	KRX KTB	KRX Repo	KRX BondsAll	KRX LPB
Participants	Banks and Securities Companies		Securities Companies	Securities Companies (common account)
Bonds eligible for trading	KTB, MSB, DIFB	KTB, MSB, AAA-rated corporate bond	All bonds listed on the KRX including option embedded bonds	Type I NHB, Subway Bond, Community Development Bond
Trading hours	9 a.m.–3:30 p.m.			
Trading execution method	Continuous auction (individual auction with multiple price)		<ul style="list-style-type: none"> - At the market opening: individual auction with single price - During the session: individual auction with multiple price 	<ul style="list-style-type: none"> - At the market opening: individual auction with single price - During the session: individual auction with multiple price - At the market closing: single price auction with the reported market price
Settlement method	T+1	T+0	DVP: Payment through Commercial Bank and securities delivery through KSD	
	DVP: payment through BOK-Wire and securities delivery through KSD		<ul style="list-style-type: none"> -Clearing conducted by KRX -Collective multilateral netting settlement by KSD 	

BOK = Bank of Korea, DIFB = Deposit Insurance Fund Bond, DVP = delivery versus payment, KRX = Korea Exchange, KSD = Korea Securities Depository, KTB = Korea Treasury Bond, LPB = Licensed and Permit Bonds, MSB = Monetary Stabilization Bond, NHB = National Housing Board Bond, T = trading day.

Note: AAA denotes a credit rating.

Source: Korea Exchange.

²⁵ In February 2018, KRX officially renamed the English designations for its bond market segments.

a. KRX KTB

KRX KTB facilitates the inter-dealer market for KTBs and other government bonds. The 1997/98 Asian financial crisis had prompted the Government of the Republic of Korea to announce its Measures to Improve Government Bond Policies and Vitalize the Bond Market. As part of the process to facilitate development of the government bond market, Primary Dealers were introduced in 1999 and KRX KTB was placed on KRX.

On KRX KTB, details of the bid and ask orders presented by each dealer are collected and disclosed, and transactions are carried out between dealers. The tick size varies by remaining time to maturity but stands at KRW1 in case of 10-year benchmark KTB and 10-year inflation-linked bonds. Quotations are based on limit orders.

Eligible market participants are limited to financial investment firms and banks holding licenses for investment dealing of Treasury bonds. Such market participants are classified into two categories: Primary Dealers and preliminary Primary Dealers, who take priority for Treasury bond underwriting in the primary market but have to perform duties as market makers in the secondary market; and Ordinary Dealers, who may participate in the secondary market but not in the primary market. As of October 2017, 17 Primary Dealers, 4 preliminary Primary Dealers, and 41 Ordinary Dealers were participating in KRX KTB.

Tradable bonds are KTBs, MSBs, and Korea Deposit Insurance Corporation Fund Bonds. The trading unit is an integer multiple of a par value of KRW1 billion. Transactions are concluded through individual competitive bidding using multiple prices, based on a principle, which gives priority to the bid–ask quotation with the best price and time. The settlement day was set on T+1 in June 2003 from the original practice of T+0.

b. KRX BondsAll

KRX BondsAll was established in March 1956. All listed bonds—including government bonds, municipal bonds, corporate bonds, and equity-based corporate bonds—are eligible for trading in the market. Convertible bonds should be traded in KRX BondsAll only, not in the OTC market, for the purpose of formation of fair prices and liquidity enhancement. Actual transactions generally involve retail bonds, small-cap government and public bonds, and equity-linked corporate bonds.

In principle, all market participants can trade in KRX BondsAll and non-KRX members can participate in the market indirectly, with ordinary investors being the main participants, by opening entrustment accounts at financial investment firms which hold KRX membership. The trading unit is KRW1,000 and the settlement day is T+0. Transactions are concluded through individual competitive bidding, which are based on the four principles of price, time, brokerage, and quantity.

The market-maker program has been adopted in KRX BondsAll to encourage investors to trade bonds and enhance liquidity. A KRX member that wants to perform as a market maker should submit an application to KRX. Then, on a semiannual basis, the exchange reviews applicant members' financial status, operational personnel, and other details, and determines eligible market makers. The members designated as market makers should fulfill the market-making obligations that KRX imposes. When such members are found to have failed to meet these obligations after KRX has carried out a regular evaluation of

their performance, the designation may be revoked. Moreover, trade commission is not charged on market-making quotations, and financial incentives are given to market makers depending on their quarterly market making performance.

c. KRX LPB

When Koreans acquire some license or permits—or purchase houses, real estate, or automobiles—they are required to purchase License and Permit Bonds (LPBs). In the past, certified judicial scriveners or car salespersons often purchased and sold such bonds at low prices on behalf of consumers. KRX established the KRX LPB in October 1995 to promote the trading of LPBs, and such bonds should be traded only on KRX LPB.

A bond purchaser can sell the bonds to a bank (a sales agent). The bank that has purchased the bonds places an ask order in KRX LPB through a financial investment firm with which the bank has signed an agent contract. KRX has established the LPB Membership to process bid orders of the bonds. Members of the system have to submit a certain volume of bid orders on KRX LPB and the reported prices after market closing every day. KRX gathers the reported prices and calculates a new reported market price that serves as a base price for trading or purchase by the banks on the following day.

d. KRX Repo

KRX Repo opened in February 2002 and was designed with market regulations based on the Global Master Repurchase Agreement. The market has adopted the classic repo trading method, which connects the ask (bid) contract on the trading day and the bid (ask) contract on the repurchasing day into one contract.

At the time of compilation of this Bond Market Guide, KRX featured 12,979 listed bonds, of which 159 were traded on a regular basis during the most recent full year. KRX bond trading volume accounted for about 55% of the total bond trading volume in the Korean market; specifically, KTB trading volume in the KRX bond market took up about 70% of the total bond trading volume in the Korean market.

Cash settlement for KRX trades generally takes place via BOK-Wire+, while the bonds are transferred through escrow accounts at KSD. As such, it is similar to and yet slightly different from the OTC market delivery-versus-payment settlement method.

C. Mandatory Trade Reporting

Trading in the OTC market in the Republic of Korea is subject to the regulations set by KOFIA, as an SRO and the administrator of the market. All trades executed in the OTC market—including transactions in the QIB Market as a segment of the OTC market—have to observe the so-called “15-minute rule,” which refers to the requirement that trading information must be reported to KOFIA through an intermediary trading counterparty or a securities broker within 15 minutes after execution, without exception. The rule was established in 2000.

On KRX, trades are quoted, concluded, and executed in the respective electronic trading platforms of the individual bond market segments (see also section B). Quotes and executed trades and their prices are displayed in real time on the screens of trading members and market segment participants. As such, trading members, participants, and KRX are automatically aware of all executed trades and their details, without the need for a separate reporting practice.

D. Market Monitoring and Surveillance in the Secondary Market

Efforts for the monitoring and surveillance of activities in the secondary market and resulting actions depend on the bond market segment in which these activities occur.

Because market monitoring and surveillance in the secondary market is regarded as part of policy implementation for market stability and investor protection by maintaining fairness and securing transparency based by the Act on the Establishment, etc. of the Financial Services Commission, the final responsibility is thought to lie with the FSC. Under the guidance of the FSC, the FSS is responsible for the inspection and supervision of financial institutions.

1. For Trading Activities on Korea Exchange

Based on the Article 403 of the FSCMA, KRX can take necessary actions and measures for market surveillance, investigations into abnormal trading activities, member inspection, inter-market surveillance, and the disciplinary actions taken against members and their officers and employees, as well as preventative activities toward unfair trading, according to Article 1 of the KRX Market Oversight Regulation.

The KRX Market Oversight Commission carries out market surveillance by detecting issues and following up on suspicions of abnormal trading through investigations. The objectives are to identify trades that are likely to violate the regulations governing the business of the exchange, to conduct inspections and, when there is a possibility of abnormal trading, identifying the securities with abnormally soaring prices to prevent any unfair trades.

If there is an unfair or suspicious transaction in the bond market, the KRX Market Oversight Committee will examine that transaction and surveil related market participants. Under the Market Oversight Regulation, the KRX stipulates matters necessary for such market surveillance and investigation into abnormal trading activities, as well as member inspection. Details about the Market Oversight Committee can be found in Chapter II.D of the regulation.

Detection of issues, such as suspicious or abnormal trading activities, takes into consideration the trading type, price fluctuations, and trading volume of securities, the degree of participation in price formation and trading, as well as details of rumors, among other subjects.

2. For Trading Activities in the Over-the-Counter Market

KOFIA monitors the book-building process, the underwriting activities in the primary market including that of the management companies, as well as transaction details in the secondary market and the reporting of price quotes.

When a KOFIA member company violates regulations, KOFIA can impose restrictions through the Self-Regulation Committee and impose a penalty on the member company itself, its executives, or employees. Credit rating and bond assessment working groups under KOFIA also regularly monitor the track record of CRAs in their rating assessments, as well as the bond valuation prices provided by bond pricing agencies. KOFIA officially announces those results or reports them to the FSC.

The Self-Regulation Committee consists of seven members, including the committee chairman, three financial experts, one legal expert, one accounting or finance expert, and the chief executive officer of a regular member company. The working groups mentioned above also consist of seven members including experts from related fields.

E. Publication of Real-Time and Reference Data for Over-the-Counter Bond Trading

One of the focal tasks of KOFIA under its mandate as the SRO and administrator for the OTC market is to ensure market transparency and the distribution of relevant information to all market participants under that goal. This section details some of the reference data that are being collected and distributed by KOFIA through its systems.

1. Publication of OTC Trade Execution Details

After a brokerage house sells a bond in the OTC market, it must report to KOFIA details of the transaction within 15 minutes. KOFIA then publishes this information.

The publication mandate was introduced in 2000 to enhance market transparency and boost the credibility of prices, while the 15-minute rule aimed to improve the accuracy of reporting information on OTC bond transactions. In the same context, KOFIA created the Bond-Trade Report and Information Service (B-TRIS) in 2001, which enables real-time management of data between KOFIA and financial investment companies. B-TRIS is the OTC bond market disclosure system to collect and disclose OTC bond trading information.

Bonds subject to the reporting requirements include government bonds, MSBs, special bonds, and structured securities, among others. The real-time quote information collected through K-Bond, along with execution information provided through B-TRIS, are used as source information for building the bond index and bond ETFs. KOFIA also discloses bond quotes, trading yields, and bond assessment company yields on its website every day. KOFIA also receives trading records on a wide-range of other debt securities such as certificates of deposit, commercial paper, repo, and electronic short-term bonds.

As of March 2015, an average of 3,000–5,000 daily transactions were reported under the 15-minute rule. This rule has not only enhanced market transparency, but also reduced the cost of seeking out price-related information. Furthermore, it expedited the speed of information distribution as information on issues, trading volume, yields, and investor categorization codes is provided in real-time.

2. Publication of OTC Quotation Information

Alongside the 15-minute rule, which promotes post-trade transparency, it was also necessary to introduce a service for enhancing pre-trade transparency. In an effort to improve liquidity and market transparency in general, KOFIA introduced the BQS in 2007.

KOFIA requires financial investment firms, banks, and merchant banks, as well as inter-dealer brokers to report, in real-time, all information on quotes and exercise prices of all bonds traded in the OTC market through K-Bond. This ensures that all OTC quotes can be published, enhancing the price discovery function and increasing transparency as well as liquidity in the OTC market.

3. Publication of OTC Final Quotation Yields

When the market closes, KOFIA posts the final quotation yield for each bond that is represented on the Korean bond market on the BQS website.²⁶ The information can be used as indicators for economic policies, asset management by financial institutions,

²⁶ See www.kofiabond.co.kr

and the appraisal of investment performance. Information is collected at 11:30 a.m. and 3 p.m. each working day, and disclosed at 12 noon and 3:30 p.m. the same day.

KOFIA also discloses base yields that are used for daily closings and derives the final settlement price for 3-year, 5-year, and 10-year interest rate futures, and market-making quotation yields for bond-specialized dealers. Furthermore, KOFIA discloses details on commercial paper for transaction information management, yields and indices, certificate of deposit yields and transaction status, customer repo transaction status, and intermediary repo transactions among institutions.

KOFIA has been providing real-time bond indices (see also section G), enabling a real-time assessment of the bond market and the development of new index-linked bond products, including ETFs. The first Korean KTB ETF was listed on KRX in July 2009.

F. Bond Information Services

Investors in the Korean bond market—both professional and ordinary investors—have many opportunities to obtain information on bonds and notes issued. The information itself and the method of delivery of the information may depend on the bond market segment, type of instrument sought, and the market institution providing the service. In principle, most information is available online, but might also be available on a commercial basis from market intermediaries and information vendors. A list of publicly issued bonds and notes (and related information) is also available on the official disclosure website of the FSS.²⁷ If the publicly issued bond is listed, then information can be found on the KRX website.

1. Information on Government Bond Program

MOSF provides general information on KTBs and KTB investment—including issuance schedule, auction results, and other statistics—on a Korea Treasury Bonds website (Figure 4.2). Real-time information on KTB trading in the secondary market is also available on the KRX website as well as the KOFIA website.

²⁷ See <http://dart.fss.or.kr>

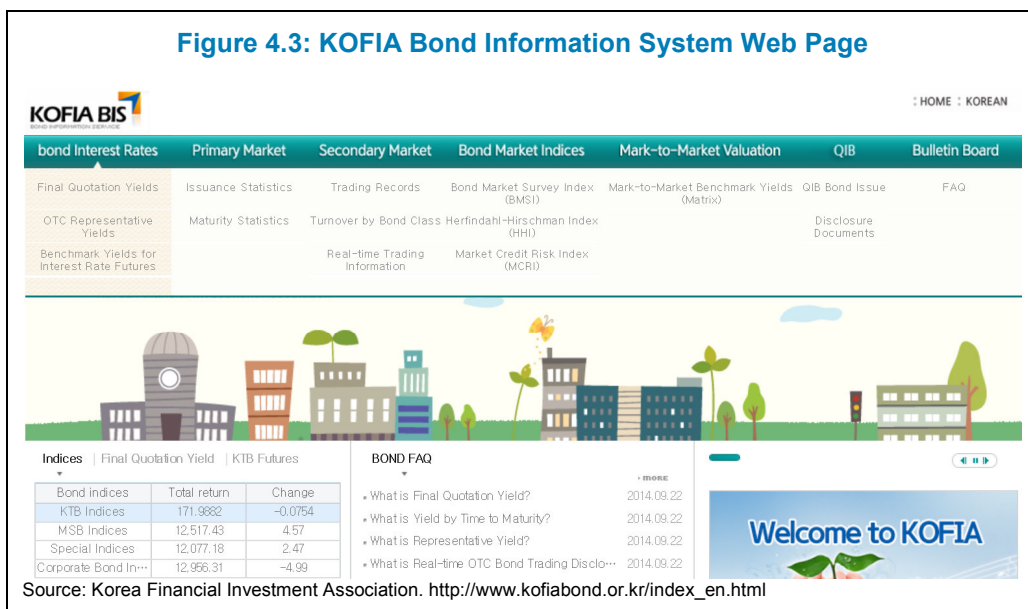
Figure 4.2: Korea Treasury Bond Information Web Page



2. KOFIA Bond Information System

KOFIA provides information to the public on bonds and notes registered or traded in the OTC market. The KOFIA Bond Information System offers quotation yields, issuance and trading data, real-time transaction information, and real-time bond market indices, among other information (Figure 4.3); the information is available in English as well.²⁸

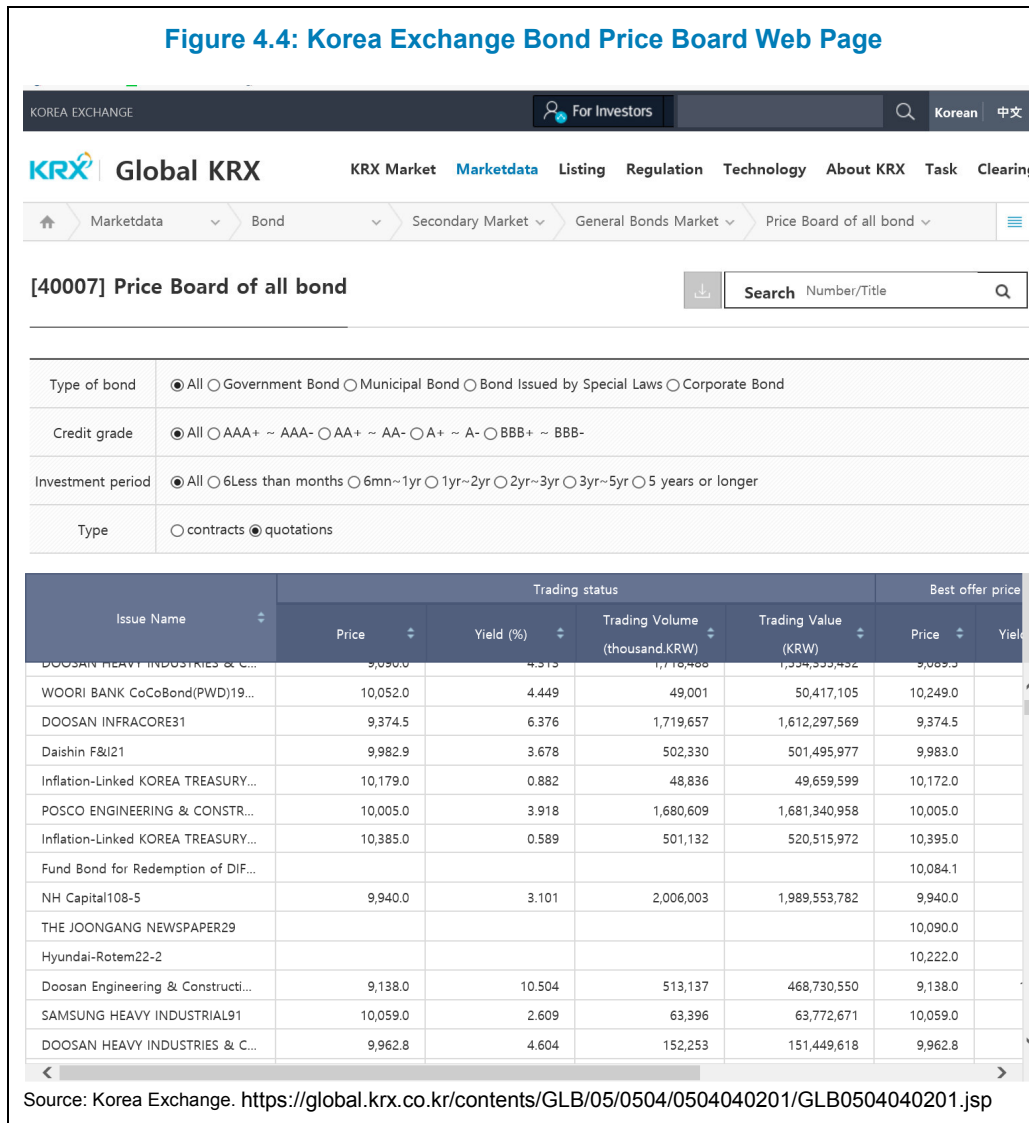
Figure 4.3: KOFIA Bond Information System Web Page



²⁸ See www.kofiabond.or.kr

3. Information from Korea Exchange

KRX provides prices of all bonds and notes listed on its markets as well as general data on those bonds and notes in real-time via its website (Figure 4.4). The same information will also be made available to global information vendors, including Bloomberg and Thomson Reuters, or may be subscribed to directly from KOSCOM, a subsidiary of KRX.



In addition, KRX is the appointed Korean institution to issue International Securities Identification Numbers; every listed bond has its own identification number, which is available at a dedicated KRX web page (Figure 4.5).²⁹

²⁹ See www.isin.krx.co.kr

Figure 4.5: Korea Exchange ISIN System Web Page

KRX KOREA EXCHANGE **ISIN System** The KRX is the only numbering agency to allocate ISINs in Korea. KOREA

International Securities Identification Number by KRX

ISIN Search

*ISIN	<input type="text"/>		
Company	Issuer's Name	<input type="text"/>	Contains <input type="text"/> But Not <input type="text"/>
	Issuer's Code	<input type="text"/>	
Type	<input type="checkbox"/> All <input type="checkbox"/> Stock <input type="checkbox"/> Bond <input type="checkbox"/> ELS/DLS/ELB/DLB <input type="checkbox"/> ELW <input type="checkbox"/> ETN <input type="checkbox"/> Right/Warrant <input type="checkbox"/> DR <input type="checkbox"/> Strips <input type="checkbox"/> Index <input type="checkbox"/> Future & Options <input type="checkbox"/> Miscellaneous (CP, Unit Trust, CD)		
Date	Issuing date	Between <input type="text"/> and <input type="text"/>	
	Listed date	Between <input type="text"/> and <input type="text"/>	
	ISIN Allocated date	Between <input type="text"/> and <input type="text"/>	

ISIN = International Securities Identification Number.
 Source: Korea Exchange. http://isin.krx.co.kr/main/eng.do?method=eng_main

4. Securities Information Service of Korea Securities Depository

KSD provides a comprehensive securities information service for its participants and their clients. KSD collects and manages all information related to deposit-eligible securities—issuance information, deposit information, lost and stolen securities, and corporate action information—and makes it available through its Securities Information Portal (SEIBro).

SEIBro is an information portal providing securities information held by KSD to both individual and financial institutions through web and mobile service. SEIBro offers a wide range of securities related information available in the Republic of Korea, with equity and bond information on as many as 3,700 issuers. It also provides comprehensive securities issuance information for equity, bonds, investment funds, derivatives securities and short-term securities, as well as information on OTC transactions including securities lending and repo.

G. Secondary Market Yields, Yield Curves, and Bond Indices

1. Yields and Yield Curves

Not every bond is traded on a daily basis. The number of the on-the-run issues that are actively traded in the secondary market is limited, and thus, the yields of most off-the-run-issues may not always be representative. In this case, the bond pricing agencies play key roles in pricing bonds which are not actively traded. In the Republic of Korea, four agencies provide bond yield or price information through the KOFIA website (Figure 4.6). The agencies are KAP, KIS Pricing, NICE P&I, and Fn Pricing (see also the section on Bond and Note Pricing in Chapter III).

Figure 4.6: KOFIA Mark-to-Market Valuation Matrix

HOME>Mark-to-Market Valuation >Mark-to-Market Benchmark Yields (Matrix)

By Date By Period

Date: 2017-11-10 Institution: 4 Agency Avg Search

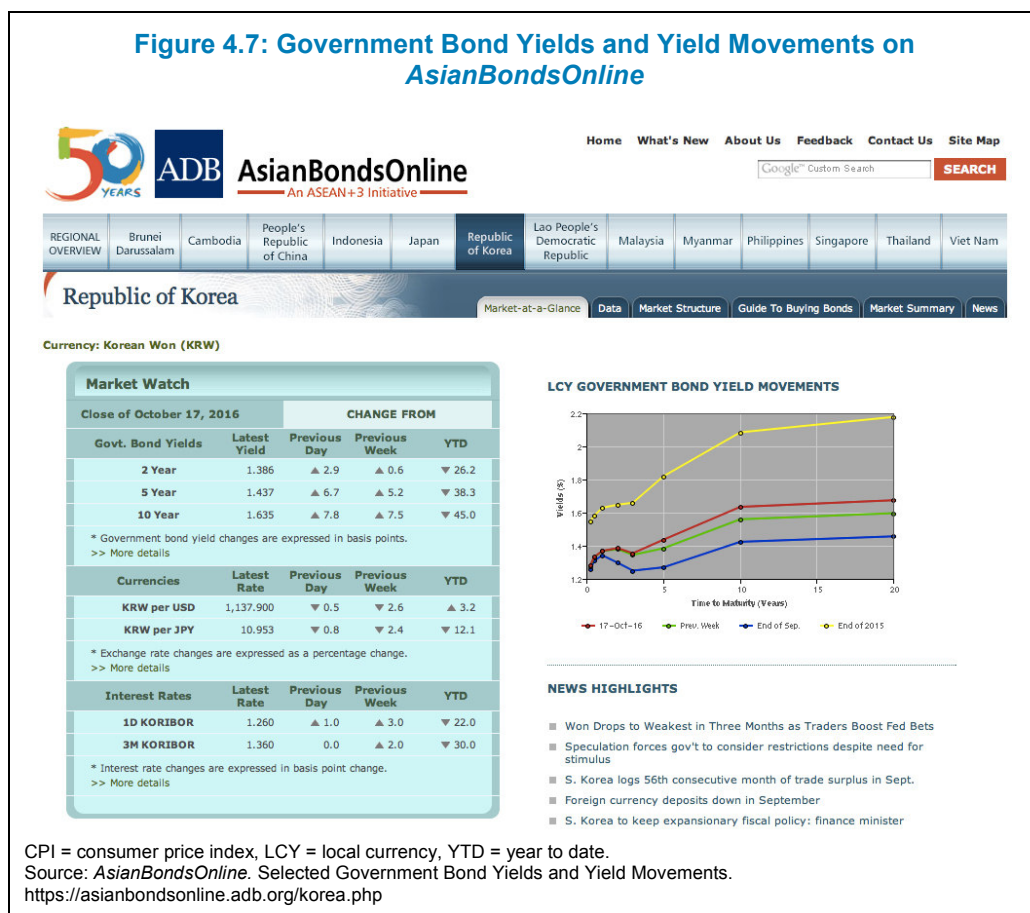
(Unit: %)

Class	Instrument	Credit Rating	3m	6m	9m	1y	1y6m	2y	2y6m	3y	4y	5y	7y	10y	20y	30y	50y
Gover...	KTB	Grain, Fx &...	1.395	1.533	1.661	1.774	1.999	2.076	2.110	2.157	2.312	2.362	2.504	2.570	2.506	2.505	2.505
	NHB2	-	1.198	1.328	1.470	1.588	1.757	1.880	1.893	2.045	2.174	2.313	2.456	2.596	-	-	-
	NHB1	Other Gove...	1.453	1.589	1.732	1.847	2.019	2.137	2.146	2.264	2.380	2.521	-	-	-	-	-
Munic...	Seoul Rail...	-	1.486	1.618	1.764	1.883	2.051	2.179	2.192	2.315	2.428	2.572	2.635	-	-	-	-
	Regional D...	Other Muni...	1.486	1.618	1.764	1.883	2.051	2.179	2.192	2.315	2.428	2.572	-	-	-	-	-
Special	State-owne...		1.572	1.731	1.833	1.951	2.108	2.245	2.254	2.348	2.469	2.555	2.594	2.613	2.611	-	-
		AAA	1.594	1.757	1.858	1.981	2.140	2.270	2.282	2.366	2.480	2.579	2.628	2.656	2.656	2.681	-
		AA+	1.624	1.793	1.894	2.015	2.186	2.322	2.332	2.417	2.538	2.679	2.762	2.839	2.898	-	-
		AA	1.679	1.848	1.950	2.085	2.256	2.398	2.416	2.504	2.630	2.789	2.870	2.944	3.030	-	-
		MBS	1.595	1.759	1.858	1.980	2.140	2.272	2.285	2.370	2.479	2.580	2.629	2.656	2.658	-	-
MSB	-	-	1.429	1.580	1.711	1.810	2.007	2.122	-	-	-	-	-	-	-	-	-
Finan...	Non-guara...	AAA (KDB)	1.581	1.751	1.873	1.958	2.149	2.277	2.287	2.363	2.471	2.572	2.636	2.676	-	-	-
		AAA (SME)	1.581	1.751	1.873	1.958	2.149	2.277	2.297	2.372	2.488	2.587	2.662	2.711	-	-	-
		AAA	1.605	1.774	1.905	2.001	2.186	2.311	2.336	2.411	2.503	2.599	2.699	2.769	-	-	-
		AA	1.797	1.990	2.107	2.241	2.445	2.593	2.655	2.734	2.822	2.962	3.064	3.152	-	-	-
		A+	2.049	2.307	2.444	2.598	2.808	2.958	3.011	3.103	3.197	3.328	3.465	3.640	-	-	-
**Fina...	Non-guara...	AA+	1.751	1.933	2.094	2.177	2.357	2.543	2.574	2.614	2.714	2.857	2.962	3.233	-	-	-
		AA0	1.789	1.951	2.108	2.205	2.393	2.612	2.670	2.741	2.854	3.045	3.147	3.452	-	-	-
		AA-	1.809	1.970	2.144	2.232	2.460	2.675	2.762	2.913	3.033	3.215	3.328	3.695	-	-	-

Source: Korea Financial Investment Association. http://www.kofiabond.or.kr/index_en.html

Securities information and yield and price data, particularly on government bonds, is also available from the *AsianBondsOnline* website, under an initiative by ASEAN+3 (Figure 4.7).

Figure 4.7: Government Bond Yields and Yield Movements on AsianBondsOnline



In addition to yields for specific benchmark issues, an aggregate government bond yield curve for selected periods, as well as many more data points can also be accessed using the website.³⁰

2. Other Bond Yields—Corporate Bonds and Notes

The yield curve information provided by the bond pricing agencies via the KOFIA bond information website include not only the information on public sector bonds, such as government bonds and special bonds, but also private sector bonds, including corporate bonds with diverse credit ratings.

3. Daily and Real-Time Bond Indices

The calculation of real-time bond indices was made possible with the introduction of BQS (see also section E). Currently, seven types of real-time bond indices are provided, which are calculated using information sourced from BQS.

³⁰ See http://asianbondsonline.adb.org/singapore/data/marketwatch.php?code=government_bond_yields

Table 4.2: Status of Real-Time Bond Indices and Exchange-Traded Funds

Index	ETF	Update Interval	Source	Starting Index (Point)	Base Date
MKF KTB Index	KODEX TB	30 sec.	KOFIA BQS	100	16 Jun. 2004
KEBI KTB Index	N.A.	5 min.	KOFIA BQS	100	30 Jun. 2009
MK MSB Index	KOSEF MSB	1 min.	KOFIA BQS	10,000	2 Jan. 2010
MK MM Index	KOSEF Short-Term Money	1 min.	KOFIA BQS	10,000	1 Jun. 2010
KOBI Credit Index	Kstar High-Grade Corporate Bond	1 min.	KOFIA BQS	10,000	1 Sep. 2010
KRW Cash Index	KODEX Short-Term Bond	30 sec.	KOFIA BQS	100	2 Jan. 2006
KIS MSB 3M index	TIGER Money Market Fund	1 min.	KOFIA BQS	10,000	1 Jan. 2012
KAP Barbell Index	ARIRANG Barbell Bond	1 min.	KOFIA BQS	100	30 Jun. 2009
KAP MM Index	ARIRANG Short-Term Bond	1 min.	KOFIA BQS	100	31 Dec. 2011
KIS MSB Short-Term Index	KINDEX Short-Term Money	1 min.	KOFIA BQS	10,000	1 Jan. 2013
KIS MSB 5M Index	KStar Short-Term MSB	1 min.	KOFIA BQS	10,000	1 Jan. 2013
KRW Cash Plus Index	KODEX Short Term Bond Plus	1 min.	KOFIA BQS	100	31 Dec. 2007
KAP Bullet Index	N.A.	1 min.	KOFIA BQS	100	31 Dec. 2011
KAP Short Term Index	POWER Short-Term Bond	1 min.	KOFIA BQS	100	31 Dec. 2007
KOBI Half Credit Index	ARIRANG High-Grade Corporate Bond	1 min.	KOFIA BQS	10,000	1 Jan. 2016

BQS = Bond Quotation System, N.A. = not applicable.

Source: Korea Financial Investment Association (KOFIA).

Based on BQS indices, 12 real-time bond indices have been created. With the exception of the KEBI KTB index, 11 are used as benchmark indices for bond ETFs. As of 20 May 2015, 11 bond ETFs were listed on KRX, with a total market capitalization of KRW3.1 trillion.

KRX was calculating three indices for bonds as of October 2017. Among them, the KRX KTB Index, launched in June 2009, is utilized most and is calculated once every minute. The index is calculated based on the prices of three benchmark KTBs (two 3-year bonds and one 5-year bond), which also represent the underlying securities for the three-year KTB futures listed on the KRX derivatives market. As the constituent securities of KTB futures and bond indices are the same, the linked trade between the KTB and KTB futures markets is active. A variety of financial products that track the yield of the index have been developed; in particular, five ETFs tracking the index are listed and actively traded in the KRX ETF market.

In addition, KRX has been calculating the KRX Korea Treasury Bond Prime Index since May 2006, for Treasury bonds traded on the KRX secondary market. The constituent securities of the index are six 3-year, 5-year, and 10-year on-the-run issues, which are highly representative; the index is calculated every 5 minutes.

The KRX Bond Index, which is not a real-time index, was launched at the same time, more so to display the bond market status. This index is calculated as an end-of-day index for all bonds listed on the KRX market by bond type and maturity.

H. Repo Market

1. Repo Market Overview

The Korean repo market is divided into the exchange market launched by KRX in 2002 (now KRX Repo) and the OTC market where transactions are done directly between the counterparties or through an intermediary.

In addition to the KRX and OTC repo markets, other repo market segments consist of (i) the institutional repo market where repo trading occurs mainly for the purpose of financing and the raising of working capital between financial institutions; (ii) the customer repo market where financial institutions trade with nonfinancial corporations or individuals in terms of received deposits; and (iii) the BOK repo market, as a part of its open market operations, where BOK trades with its constituents to manage the money supply and interest rates.

Most financial institutions can participate in the OTC institutional repo market, whereas only financial institutions who are members of KRX bond market segments are able to trade in KRX Repo. Typically, almost 99% of repo transactions are traded in the OTC institutional market.³¹

2. Institutional Over-the-Counter Repo Market

The institutional OTC repo market is operated by KOFIA.

a. Eligible Securities

Securities that are allowed to be traded in the OTC institutional repo market are those prescribed in the FSCMA. Bonds, commercial paper, ETFs, and equities are eligible for the KSD's repo system as long as these securities are deposit-eligible, subject to regular price evaluation, and denominated in Korean won.

b. Participants

The Regulation for Financial Investment Businesses issued by KOFIA prescribes that financial institutions are eligible as participants in the OTC institutional repo market. Any participant who opens a securities account with KSD and receives approval from the KSD can participate in the KSD repo system. The KSD regulates that foreign participants must appoint a standing proxy for their repo transactions.

c. Major Features of the Korean OTC Institutional Repo Market

i. Direct Trade versus Brokered Trade

Repo trades in the OTC market are divided into direct trades and brokered trades. Under direct trades, participants themselves look for counterparties. If they encounter difficulties finding a counterparty, they

³¹ Adapted from Executives Meeting of East Asia–Pacific Central Banks. 2014. *EMEAP Repo Markets: State of Play—A Report by the EMEAP Working Group on Financial Markets*. http://www.emeap.org/emeapdb/upload%5CWGMeeting%5CEMEAP_Working_Group_on_FinancialMarkets_-_Report_on_EMEAP_Repo_Markets_....pdf

may request a brokerage company to find one for them. There are five brokerage companies in the OTC institutional repo market. As of 30 April 2016, the percentage of brokered trades was approximately 90% of the total trade volume in the OTC market.

ii. Triparty Repo Agent

A triparty repo agent is an independent third party that provides services, including settlement and collateral management services, after repo trades are executed. The KSD acts as a triparty repo agent that provides participants with the aforementioned services to facilitate repo trades in the OTC institutional repo market from initial execution to repurchase date.

iii. Types of Transactions

A participant normally designates a repurchase date at the time of concluding a repurchase agreement. This type of transaction is a fixed-term repo. On the other hand, an open-ended repo has no designated repurchase date. In the OTC institutional repo market, both types of transaction are used, and the repo term completely depends on the agreement between a repo seller and a repo buyer. The most common repo term is 1 day.

iv. Business Hours for Korea Securities Depository Repo System

KSD's triparty repo services are administrated from 9 a.m. to 5:00 p.m. KSD may change these business hours, in which case the KSD shall give its participants prior notice on the change in business hours.

d. Trade Capture and Matching

i. Submission of Details of Repo Trade

Upon the execution of repo transactions, repo sellers (for direct trades) or brokerage firms (for brokered trades) shall submit the details of the repo trade to KSD. Upon receiving the details of the repo trade, the KSD shall notify repo buyers (for direct trades) of the details of the repo trade or notify repo sellers and buyers (for brokered trades) of the details of the repo trade (Table 4.3).

Table 4.3: Details of Repo Trade Submitted by Repo Sellers or Brokerage Firms

Item	Content	Option
Basic Information	Counterparty, repo position (buy or sell), purchase price, purchased securities, repo rate	
Type of Transaction	Term: fixed maturity (enter transaction period) Open: no fixed maturity (no need to enter transaction period)	Term and Open
Transaction and Single Agreement	Transaction: to separate from existing trades with the same counterparty and enter into a transaction Single agreement: combine with other repo transactions entered into with the same counterparty to form a single agreement.	Transaction and Single
Settlement Agent	If the party wishes to settle through its settlement agent, the name of the settlement agent needs to be entered. (The details of the settlement agent shall be registered in advance.)	Account no. of securities ledger held with the settlement agent
Methods of Settlement	DVP: simultaneous settlement through the DVP system between BOK (central bank) and KSD FOP: separate settlement of securities and payment (the participant may choose the type of payment)	DVP and FOP
Base Currency	A range of currencies are available for purchase	KRW, USD, JPY, and EUR
Charges	The party subject to the service charges to the KSD	Both Parties, Seller, or Buyer
Interval of Repo Interest Payment	Enter the interval if it has been agreed that the repo interest shall be paid (received) on a regular basis.	Daily, 1-,2-,3-,4-,6-Month, Repurchase date
Daily Mark-to-Market	Whether to choose the KSD's daily mark-to-market process	Yes or No
Threshold	To specify the ratio or amount of exemption from the obligation to maintain the margin (threshold)	Margin Amount or Ratio
Margin Ratio	Enter the agreed margin ratio, if any. If a margin ratio is not specified, the margin ratio is calculated by dividing the purchased securities' market value on the start-leg settlement date by the purchase price and the ratio is automatically entered into the KSD's repo system.	
Fund Information	If the sellers or buyers or both parties are asset management companies, fund information is needed	

BOK = Bank of Korea, DVP = delivery versus payment, FOP = free of payment, KSD = Korea Securities Depository.

Source: KSD.

ii. Trade Matching

If there is no discrepancy between the details of the repo trade agreed by buyers and sellers, repo sellers or buyers who are notified of the details of the repo trade shall confirm the details of the repo trade. Upon completion of confirmation, KSD shall finalize the settlement statement by allocating a repo reference number to each transaction.

e. Settlement of Repo Trade

i. Start-Leg Settlement

Settlement of repo transactions is done by book-entry transfer from the seller's securities account to the buyer's securities account. Settlement of cash is done via KSD's the account with BOK or an account with a commercial bank.

Delivery-versus-payment occurs through a direct link between KSD's securities settlement system and BOK-Wire. This allows real time and simultaneous settlement on a gross, trade-by-trade basis for start-leg settlement. If the details of the repo trade are matched, the KSD repo system checks for sufficient holdings of securities in the seller's securities account. If securities are sufficient, KSD then locks the required securities amount to prevent it from being used for other purposes, and instructs the buyer to transfer the funds via BOK. Upon the buyer's payment, the settlement of the purchased securities is concluded.

If trade parties use the free-of-payment method, payment for the start-leg settlement should be made by agreed means, and the seller needs to notify KSD that payment has been made. Upon such notice by the seller, the settlement of the purchased securities is completed.

ii. Close-Leg Settlement

In cases where the repurchase date is designated at the time of concluding a repo trade, one party may, at any time, ask KSD for the termination of the repo transaction with the consent of the other party, even before the repurchase date. In cases where there is no designated repurchase date, and unless otherwise agreed upon by the parties of the repo transaction, both parties shall request for the termination of the repo transaction, provided that such request is made at least 3 business days, including setting the desired repurchase date, in advance.

In case of an event that causes the default of a contractual obligation of a seller or buyer, the repurchase date for the relevant repo transaction shall be deemed to have been prematurely arrived. KSD shall notify the relevant participants of such a fact and terminate the repo transaction. Either delivery-versus-payment or free-of-payment method can be used for the close-leg settlement.

f. Trade Management

i. Rollover

Counterparties may apply for a rollover of the repo trade on the termination date. In this case, the existing transactions are terminated on the day when such an adjustment is made, and the parties engage in a new transaction. The settlement may be completed by making payment of the repo interest. The original trade conditions, other than the termination date, would also apply to the new transaction.

ii. Substitution of Purchased Securities

The seller in a repo transaction may substitute the purchased securities, in whole or part, for other securities with the consent of the buyer. Meanwhile, in case the redemption of purchased securities is scheduled or in case depreciation of the purchased securities' market value is expected due to insolvency, bankruptcy, commencement of rehabilitation processing, or other reasons on the part of the issuer of the purchased securities, the buyer can request the exchange of purchased securities with other securities. The seller should comply with such a request.

iii. Change in Repo Trade Conditions

Counterparties may change part of the trading conditions, if necessary. In this case, the new conditions will apply only to the changed part and all other terms and conditions will remain intact.

g. Mark-to-Market

To minimize market risk, KSD carries out MTM valuations of securities under repo on a daily basis since the value of the purchased securities as collateral must be monitored on a daily basis to ensure that it does not drop below a certain range. To absorb typical small price fluctuations in the securities, a margin payment is agreed as part of the repo trade. MTM and margin payments allow sellers and buyers to minimize exposure to price fluctuations and enhance the stability of the repo trade. When the repo transaction is terminated, the KSD repo system returns any margin involved in the transaction to each paying party.

KSD shall conduct MTM on a daily basis in the following order:

- i. calculation of the required collateral value,
- ii. calculation of the transaction exposure,
- iii. calculation of the net margin, and
- iv. calculation of the amount of the net exposure.

After conducting daily MTM, KSD shall notify repo sellers and buyers of the result of the MTM no later than 10:30 a.m. The party incurring the net exposure shall pay a margin in cash or securities with the consent of the other party. The amount of margin equals to the amount of net exposure to the other party. The margin transfer must be fulfilled no later than 2:00 p.m. on the notified date.

h. Income Payment Management

Although legal title to the purchased securities passes to the buyer in a repo trade, economic costs and benefits of the purchased securities remain with the seller. Therefore, if a coupon is paid, it will be paid to the seller on the coupon value date. KSD assists the buyer's interest payment process to ensure convenience for repo sellers and buyers.

The method of interest payment varies depending on whether the purchased securities are held in the repo account of the buyer. If the buyer holds the purchased securities in its repo account, KSD's repo system will directly pay the interest to the seller on the relevant interest payment date.

On the other hand, if the buyer transferred the purchased securities from its repo account to a third party, the buyer should pay the interest to the seller on the interest payment date through the KSD.

3. Repo Market of Korea Exchange

Market participants in KRX Repo are financial investment firms and government bond dealers; at the time of compilation of this Bond Market Guide, 58 institutions were participating in KRX Repo, including 35 financial investment firms, 21 banks, KSFC, and BOK. To ensure a stable market, tradable issues are limited to KTBs, MSBs, Korea Deposit Insurance Fund Bonds, and blue-chip corporate bonds.

KRX Repo is different from the OTC repo market in that trading conditions in the market are standardized; the exchange, as a central counterparty, guarantees settlement and provides integrated services, covering quotation searching, trade execution, clearing and settlement, and trade reporting.

Trading and settlement rules and regulations of KRX Repo were designed to suit the CLOB in the exchange market, based on the Global Master Repurchase Agreement as the international standard.

a. Trading Regulations

KRX Repo allows the use of E-RFQ through connected screens, as well as trade reporting, on the basis of CLOB. This section explains trading regulations of CLOB while Section D will describe E-RFQ and trade reporting.

i. Market Participants and Trade Counterparties

Market participants of KRX Repo are the same as in KRX KTB. KRX keeps trade counterparties anonymous (referred to as no name give-up), so as to not expose the position risks of each trading party. These risks are managed by KRX.

Documentation for all trades are managed by each counterparty. When a settlement default occurs, KRX takes responsibility for the completion of settlement as a central counterparty to the seller and buyer.

ii. Eligible Bonds

Securities traded by repo can be bonds, stocks, commercial paper, certificates of deposit, and MSBs, but repo transactions in the KRX market are limited to certain bonds listed in Table 4.4. Eligible bonds are limited to those with low risk, ample liquidity, and a broad investor base.

Table 4.4: Bonds Eligible for Trading in KRX Repo

Classification	Bond	Requirements
Government bonds (GA)	Treasury bonds Foreign exchange fund bonds	Outstanding amount of more than KRW200 billion vanilla bond
MSB and KDIC (SA)	Monetary Stabilization Bonds KDIC fund bonds	
Others (CA)	Corporate bonds Special bonds	Requirements above plus an issuer of bonds and/or a guarantee agency with credit rating over AA–

KDIC = Korea Deposit Insurance Corporation.
Source: Korea Exchange.

iii. Trading Term and Repurchase Date

Most of the repo transactions have a term of less than 1 year. There are 10 standardized repo terms: overnight, 2 days, 3 days, 4 days, 7 days, 14 days, 21 days, 30 days, 60 days, and 90 days. The repurchase date is the 2nd day, 3rd day, 4th day, 5th day, 8th day, 15th day, 22nd day, 31st day, 61st day, and 91st day, respectively, counting from the day on which the purchase price is settled. (When the purchase date is a trading holiday, the repurchase is postponed to the next business day.)

iv. Quotation Receipt and Aggregation

In a KRX repo trade, bid quotations are allowed to be submitted regardless of the type of issue if the bonds that serve as collateral are deemed to have a certain level of comparability to other issues. KRX refers to these as “general quotations” (quotations for unspecified issues).

In KRX Repo, KRX captures quotations by repo type to generate bid quotations for unspecified issues. The repo type indicates a combination of the classification of bonds (eligible bonds with the same risk level) and trade period. Currently, there are 30 Same-Type-Quotation-Aggregation Tables, consisting of three classifications of bonds and ten trade periods (Table 4.5). This is based on the notion that same repo rates can be established within a Same-Type-Quotation-Aggregation Table if other conditions are the same.

Table 4.5: Quotation Aggregation by Bond Classification

Classification of bond	Eligible bond	Aggregation
Government bonds (GA)	Treasury bonds Foreign exchange fund bonds	10 types of GA (overnight–90 days)
MSB and KDIC (SA)	Monetary Stabilization Bonds KDIC fund bonds	10 types of SA (overnight–90 days)
Others (CA)	Corporate bonds Special bonds	10 types of CA (overnight–90 days)

KDIC = Korea Deposit Insurance Corporation.

Source: Korea Exchange.

Then, quotations are recorded in the table in the order of receipt by bid–ask and price (repo rate), and a trade is executed within the range of the table. Since quotations within the table compete with each other, ask quotations compete with bid quotations for unspecified issues if different bonds fall into the same category. Quotations should be submitted during regular trading hours from 9 a.m. to 3:30 p.m.

v. Unit of Quotation and Trading Quantity

KRX Repo has adopted the securities-based quotation rule, in which the amount of bonds to be traded is determined first and then the amount of payment is determined accordingly. The unit of quotation and trading is an integer multiple of the face value of the bond, at KRW1 billion. The tick size is indicated as a repo rate with two decimal places (1 basis point) per KRW10,000 trade value. The repo rate indicates the annual interest rate for the trade value, not the bond face value (Figure 4.6).

Table 4.6: Quotation and Trading Unit

Classification	Detail
Type of quotation	Securities-based quotation
Quotation quantity unit	Trading value of KRW10,000
Quotation price unit	Repo rate with two decimals
Trading quantity unit	Face value of KRW1 billion

Source: Korea Exchange.

vi. Execution of Trading Contract

The bid quotations for the specified issue in the Same-Type-Quotation-Aggregation Table compete with ask quotations for the same issue while bid quotations for an unspecified issue (general quotations) compete with ask quotations for all issues. The trade is executed in CLOB by the type in the Same-Type-Quotation-Aggregation Table (Figure 4.7).

Table 4.7: Central Limit Order Book

Principle	Detail
Price priority	A higher ask quotation price for a repo rate takes priority for trade execution over a lower one, while a lower bid quotation price for a repo rate takes priority over a higher one.
Time priority	A quotation received earlier for the same repo rate takes priority for trade execution over one received later.
Price determination	Trading is executed when the highest ask quotation price and the lowest bid quotation price are matched.

Source: Korea Exchange.

The trade value is calculated based on the formula below, with the result being an integer number

$$\text{Trading amount} = \text{traded bonds (total face value)} \times \text{market value} / 10,000 \div (1 + \text{haircut rate}).$$

The market value indicates the value of the bonds calculated on the basis of every KRW10,000 of the bond par value, and is set based on the price announced by a rating institution specializing in bond price evaluation. The repurchase amount that the seller pays to the buyer is calculated as follows:

$$\text{Repurchase amount} = \text{traded amount} \times (1 + \text{repo rate} \times \text{repo transaction period} / 365).$$

b. Termination of Repo Trade and Settlement

i. Termination of Repo Trade

A repo trade terminates on the repurchasing date stipulated in the contract. However, KRX may execute a repurchasing earlier than scheduled, for the stability of the repo trade, under certain circumstances (Table 4.8). If the cause for early repurchasing stems from the bonds of the contract, only the corresponding contract terminates. When the cause arises from a trade counterparty, all agreements of non-repurchasing associated with the counterparty terminate. In the case of an early repurchasing, the repurchase date is the day when the cause occurs.

Table 4.8: Cause for Termination of Repo Trade and Repurchasing

Cause for Termination	Repurchasing Way	Classification of Repurchasing
- Repurchase date is due	Repurchasing the individual contract	Scheduled repurchasing
- The seller does not agree on an exchange - De-listing of the bonds or early payment - A case where termination of a repo trade is deemed necessary	Repurchasing the individual contract	Early repurchasing
- Default of the seller (buyer) - A cause for a bond exchange occurs to the seller (buyer)	Repurchasing all contract as a single agreement	

Source: Korea Exchange.

ii. Settlement in the Repo Market

KRX guarantees the settlement of a repo trade as a clearing agency, pursuant to provisions in the FSCMA, thus assuming the role of a central counterparty to seller and buyer. As a triparty agent, KRX provides each counterparty with buy-back services for an agreement of non-repurchase until the original repo contract terminates. As a result, market participants may participate in the repo market without concerns about risks of default.

KRX has adopted settlement by netting, which combines settlement for daily trading, settlement for repurchasing, and additional margin and netting by market participant. KRX conducts settlement on a delivery-versus-payment basis.

c. E-RFQ and Trade Reporting

iii. E-RFQ in the Repo Market

Similar to KRX KTB and KRX BondsAll, a trade in KRX Repo can be conducted at a repo interest rate predetermined by consultation between a quotation requester and quotation proposer. The quotation requester may designate a maximum of five quotation proposers to request a quotation, and the quotation stays effective for 30 minutes. What is different from KRX KTB and BondsAll is that the trade period may be within 365 days (including trading holidays) and the trading unit is set at a trade value of KRW 100 million.

iv. Trading Report in the Repo Market

When market participants agree on a repo trade and report to KRX, it is deemed exchange-traded. Counterparties may determine trading unit, repo term, repo rate, and other conditions on a discretionary basis, and report to KRX. However, the trade period should be no more than 360 days.

I. Securities Lending and Borrowing

SLB is an active part of the Korean bond market. When involving debt securities, this transaction type is referred to as bond lending and borrowing.³²

1. Market Participants

Bond lending and borrowing market participants comprise lenders, borrowers, and intermediaries. Major lenders are pension funds, asset management companies, banks, insurance companies, and securities companies. The borrowers are those who are in need of borrowed securities for any number of reasons. Major borrowers are securities companies, hedge funds, and asset management companies.

Major intermediaries are KSD, investment brokerage companies, and KSFC.

2. Characteristics of Bond Lending and Borrowing in the Republic of Korea

a. Bond Lending and Borrowing a "Consumption Loan" under the Civil Code

In an SLB transaction, the lender lends bonds to the borrower, thereby transferring title of such bonds to the borrower. After a certain period of time, the borrower must return to the lender the same type and number of bonds as the loaned securities. As a result, SLB transactions have the characteristics of "consumption loans," as defined under the Civil Code.

b. Collateralization

The borrower must provide to the lender collateral that corresponds to the value of the loaned bonds. The loaning of the bonds and provision of collateral must occur simultaneously.

c. Transaction Term

The term for SLB transactions is negotiated between lender and borrower (excluding for settlement transactions which have a fixed term of 3 business days). In practice, most transactions have a term of 1 year from the date of execution of contract. However, any transaction may be unilaterally terminated by any party at any time without penalty.

3. Eligible Debt Securities

Eligible debt securities for bond lending and borrowing differ between intermediaries such as KSD, KSFC, and investment brokerage companies. Those eligible under KSD regulations are listed debt securities with the exception of option-embedded bonds.

³² This business is variously called securities lending and borrowing or securities borrowing and lending, depending on the use by individual institutions in the Korean market; both forms are used in international practice. For the Korea Bond Market Guide, the term securities lending and borrowing was adopted, as used by KSD, since its SLB platform is considered the most active.

J. Interest Rate and Fixed-Income Futures

1. Korea Treasury Bond Futures

A KTB futures contract is a forward contract to transfer a specific amount of KTBs (underlying asset) traded in an organized market (KRX) at a predetermined price at a specific time in the future (maturity).

a. Korea Treasury Bond Futures on KRX

The Government of the Republic of Korea introduced 3-year KTB futures in 1999 to establish means to hedge against risks arising from the expansion of its bond issuance. It subsequently introduced 5-year KTB futures (2003) and 10-year KTB futures (2008), which have since been traded on KRX.

b. Trading of Korea Treasury Bond Futures

It is difficult to standardize trading conditions of bond futures contracts compared to other futures contracts since trading conditions, such as the time to maturity, coupon rates, and interest payment methods, are diverse. Therefore, a standardized virtual bond is used as the underlying asset with a standardized face value, duration to maturity, and coupon rate.

i. 5-Year and 10-Year Korea Treasury Bond Futures

A 5-year KTB futures contract takes 5-year virtual Treasury bonds as an underlying asset, with a coupon rate of 5% and interest payments every 6 months. A 10-year KTB futures contract takes 10-year virtual Treasury bonds as an underlying asset, with the same conditions. 5-year KTB futures are almost the same as 3-year and 10-year KTB futures, except that the underlying asset is 5-year standardized bonds; the final settlement price is calculated based on the formula $\sum_{i=1}^{10} \frac{5/2}{(1+r/2)^i} + \frac{100}{(1+r/2)^{10}}$; and the price limit is base price \pm (base price \times 1.8%). 10-year KTB futures contracts take 10-year standardized bonds as an underlying asset, and the final settlement price is calculated according to the formula $\sum_{i=1}^{20} \frac{5/2}{(1+r/2)^i} + \frac{100}{(1+r/2)^{20}}$. The price limit is base price \pm (base price \times 2.7%).

ii. 3-Year Korea Treasury Bond Futures

A 3-year KTB futures contract has 3-year KTBs as the underlying asset. The KRX contract assumes a virtual Treasury bond with a coupon rate of 5%, a maturity of 3 years, and coupon payments every 6 months. Details on the 3-year KTB futures contract are shown in Table 4.9.

Table 4.9: Contract Details for 3-Year Korea Treasury Bond Futures

Classification	Details
Underlying asset	3-year KTB with 5% coupon rate and semiannual coupon payment
Contract size	KRW100 million
Contract months	The first 2 consecutive months in the quarterly cycle (March, June, September, and December)
Price indication	Indicated based on the face value of KRW100 (marking to the second figure after the decimal point, (e.g., 105.69, 105.85))
Tick size	0.01 point
Tick value	Value of 1 tick = face value KRW100 million x 0.01 x 1/100 = KRW10,000
Price limit	Base price \pm (base price x 1.5%) (e.g., When the base price of the day is 105.69, the upper limit is 104.10 and the lower limit is 107.28.)
Position limit (limit of open interest)	None. However, KRX may limit open interest when it deems necessary.
Trading hours	9 a.m.~3:45 p.m. (9 a.m.~11:30 a.m. on the last trading day)
Last trading day	Third Tuesday of the settlement month
Final settlement day	The following trading day after the last trading day
Final settlement method	Cash settlement
Futures basket	Treasury bonds with interest payments every 6 months, designated by KRX on the trading day immediately preceding the trade beginning date in the corresponding settlement month
Final settlement price	<p>The figure calculated according to the formula as follows (rounding the number to two decimal places):</p> <ul style="list-style-type: none"> - Final settlement price = $\sum_{i=1}^6 \frac{5/2}{(1+r/2)^i} + \frac{100}{(1+r/2)^6}$ - "r" is the yield of futures basket divided by 100 - The final settlement yield is the arithmetic mean of the mid-yield excluding the highest and the lowest yield among yields at 10:00 a.m., 10:30 a.m., and 11:00 a.m., and the yield at 11:30 a.m. on the last trading day. - The yield of each time point is the yield of futures basket announced by the Korea Financial Investment Association. <p>However, if there are multiple futures baskets, the yield is the figure calculated by averaging the yields of each futures basket and rounding to three decimal places.</p>

KRW = Korean won, KRX = Korea Exchange, KTB = Korea Treasury Bond.

Source: Korea Exchange.