

Bond and Note Transactions and Trading Market Infrastructure

A. Trading of Bonds and Notes

Due to the international nature of the Singapore bond market, most bonds and notes are traded over-the-counter (OTC). This is applicable to debt instruments aimed at both the domestic and the international market, respectively, and also to listed and unlisted instruments. At the same time, the trading volume of bonds and notes in the OTC market in Singapore is somewhat limited, since the high-quality rating of debt instruments issued by the government and the corporate sector tends to lead investors to hold these instruments to maturity. This market behavior is also responsible for a not quite active private repo market (see section H).

In addition to the OTC market, SGX offers the trading of SGS and corporate bonds on its securities market, including both types of bonds specifically aimed at retail investors. The trading of debt securities listed on SGX is subject to the Listing Rules and Trading Rules of the SGX Rulebooks. More information can be found in Chapters II and III and in the individual sections of this chapter.

More recently, SGX established the SGX Bond Pro or bond trading platform, which provides the OTC market with an execution platform for initially G3 currency bonds and market data to its participants and the bond market at large (see section C.2 for details).

B. Tendering Platform for Singapore Government Securities

MAS facilitates the tendering process for primary issuance of SGS via the SGS eApps platform. Participation in SGS eApps is limited to Primary Dealers only. Primary Dealers may also submit bids on behalf of Secondary Dealers and their customers through the platform (for a description of these dealer types, please see Chapter III.M). MAS would then conduct auctions of the SGS to be issued on the basis of all bids received through SGS eApps.

Access to SGS eApps is available for Primary Dealers through their proprietary access to the MAS infrastructure, known as MASNet, or via the SGS website.

C. Trading Platforms

In the Singapore market, bonds and notes are traded in the OTC market or on exchange.

1. Over-the-Counter Market

OTC trading between market participants represents the traditional market for bonds and notes issued or traded in Singapore. Trades are concluded directly between institutional counterparties via phone or using the services of a voice broker or interdealer broker.

Individual dealers may also use Bloomberg, Reuters, or similar global trading system providers, and/or in-house or proprietary trading systems.

Participants in the OTC market for debt securities must be holders of a CMS Licence (for institutions) issued by MAS, be a representative under the Representative Notification Framework (individual representatives) appointed by MAS, or exempt dealers such as banks and merchant banks (also see Chapter II.I).

While there is no common trading platform as such in the OTC market in Singapore, market participants may be drawn to the recently established SGX Bond Pro trading platform (SGX Bond Pro), a form of organized OTC market and market data service (see section 2 below) for their trading and decision making activities in the bond market.

2. Singapore Exchange Ltd. Bond Pro

SGX expanded its fixed income capabilities by introducing its institutional bond trading platform, SGX Bond Pro, on 10 December 2015, with the aim to become a top liquidity venue for trading Asian bonds.⁵⁸ Post-trade and settlement activities will be handled off-venue by trade counterparties. SGX Bond Pro, established under the SGX Bond Trading unit, is dedicated only to professional investors and is an OTC liquidity venue.

SGX Bond Trading and SGX Securities Trading are separate entities. SGX Bond Pro initially trades Asian corporate bonds in G3 currencies, with Asian local currencies expected to follow. Bonds or notes traded on SGX Bond Pro will not need to be listed on SGX.

SGX Bond Pro participants, who may be different from members of the exchange itself, fall into two categories, namely dealers and clients:

- Dealers are market-makers and provide liquidity to participants.
- Clients are price takers and comprise entities such as asset managers, bank treasuries, and private banks.

To trade on the SGX Bond Pro bond-trading platform, participants need to be Institutional Investors, meet eligibility criteria, and sign the Participation Agreement and onboarding activation kit.⁵⁹ UBS acts as general counterparty to ensure anonymity of the trading participants.

SGX Bond Pro's value propositions for the market and its participants include the following:

- (i) **Enhancing connectivity among market participants.** SGX Bond Pro has a matched principal functionality that allows participants who currently do not have trading relationships to transact through SGX's matched principal agent.

⁵⁸ For the official SGX announcement, please see <http://www.straitstimes.com/business/companies-markets/sgx-launches-otc-asian-bond-trading-platform>

⁵⁹ For more details, please refer to http://www.sgx.com/wps/portal/sgxweb/home/products/fixed_income/!ut/p/a1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOKNHB1NPAycDSz93S0MDDx9zAwCQ93dDNwNzIEKlpEVuLsbuh4hoaEuTiGeRm7epkRp98AB3A0IKQ_XD8KVQkWF6CZEWZgDITg7xQcHBZmGOHQDFWAxw0FuaERBpmeigBr9jpm/dl5/d5/L0IDU0IKSWdrbUEhIS9JRFJBQUlpQ2dBek15cXchLzRKQ2hEb01kdEJnY2huQVZHRUEhL1o3XzJBQTRIMEMwOTgWOTAwSUxFRFBIRIEwU0Q2LzA!/?WCM_PORTLET=PC_Z7_2AA4H0C0980900ILEDPHFQ0SD6017268_WCM&WCM_GLOBAL_CONTEXT=/wps/wcm/connect/sgx_en/home/products/fixed_income/institutional

- (ii) **Providing an open-access model.** SGX Bond Pro encourages as much integration as possible with third-party-ordered management systems and execution management systems and venues. SGX Bond Pro's trading protocols will be FIX-compliant in order to create a standardized integration process. This will increase ease and efficiency of trading.
- (iii) **Increasing adoption of electronic trading through usage of multiple trading protocols.** The objective of the different protocols is to address different participants' workflows and liquidity needs in order to maximize user adoption. For example, SGX Bond Pro conducts sector specific periodic auctions that allow liquidity providers to round up or down odd-lots. This will decrease the drags on liquidity provider balance sheets and increase liquidity provision.
- (iv) **Offering the use of market data.** SGX Bond Pro provides post- and pre-trade market data and publishes aggregated market transaction information on a daily basis in order to operate a transparent and orderly market and encourage participant trading.

SGX has signed a long-term contract with electronic trading solutions provider TradingScreen as the technology platform provider and will work with the industry to develop end-to-end automation to make trading in SGX Bond Pro instruments more efficient.

3. Bloomberg E-Bond for Singapore Government Securities

Bloomberg E-Bond is a global electronic OTC trading system for bonds and T-Bills. Specifically developed for the Singapore Primary Dealer community, Bloomberg E-Bond offers a unique multidealer Request for Quote and anonymous quotation bulletin board for SGS, along with straight-through-processing features and real-time market activity displays.

The real-time market activity monitor for SGS is accessible under "SGSM <GO>,". Participation to the feature is limited to users of Bloomberg's professional services, including Primary Dealers and MAS.

Bloomberg E-Bond has been the interbank dealing platform in Singapore since July 2005, with the initial launch of trading among Primary Dealers introducing real-time quote depth and trading information to domestic and foreign market participants. An integrated anonymous quotation bulletin board was added in 2006 and the subsequent incorporation of executable quotes further increased the quality of liquidity and transparency in the SGS market.⁶⁰

4. Trading on Exchange

SGX also offers trading of debt securities quoted or listed on its securities market, which include SGS and corporate bonds and preference shares. Trading of these debt securities is executed on the SGX-ST Platform and governed by the SGX-ST Trading Rules under the SGX Rulebook (see Chapter II.K).

SGX commenced the trading of SGS bonds on 8 July 2012, with 19 SGS issues with original maturities of at least 2 years. The trading of SGS bonds, as well as retail bonds listed on SGX and their features are geared more toward retail investors.

⁶⁰ Adapted by ADB Consultants for SF1 from <http://www.prnewswire.co.uk/news-releases/bloomberg-trading-platform-for-singapore-bonds-launched-153558465.html>

The trading board lot sizes for retail bonds are typically 1,000 units per lot to represent SGD1,000 in face value of the bonds. The trading board lot size for Singapore Government bonds are in 10 units per lot to represent SGD1,000 in face value of the bonds.

Direct access to the SGX-ST platform is available only to SGX Securities Trading Members. Investors (retail or institutional, including the Primary Dealers) access the SGX securities market through these SGX Securities Trading Members (their brokers). The choice of brokers lies in the discretion of the investors. SGS Primary Dealers also participate in the trading of bonds and notes on exchange, including the trading of listed SGS and corporate bonds, through their respective group entities with an SGX trading seat.

Retail investors can subscribe to new issuances or trade SGS and corporate bonds on SGX-ST via their appointed retail broker, or other channels, which include the submission of subscriptions for primary issuances via dedicated functions at ATMs of banks affiliated with these brokers. Trading hours for debt securities follow the normal trading hours of the SGX securities market, as shown in Table 4.1 below for easy reference. Debt securities traded on SGX are subject to the same trading, payment, and settlement rules as equities and are settled at CDP. For that purpose, individual investors must have a CDP account, in addition to their account with the broker.

SGX's securities trading engine, SGX Reach, introduced in phases since 2011, allows participants to execute bond transactions using the following distinct order types:

- limit orders;
- market orders;
- market-to-limit orders;
- session state orders; and
- price-triggered orders, including
 - stop orders, and
 - if-touched orders.

Trading on SGX is executed continuously throughout the day, Monday to Friday, between 9 a.m. and 5 p.m., with the addition of pre-open and pre-close sessions (Table 4.1). There is no trading on Singapore public holidays. When a holiday falls on Sunday, the following Monday will be a public holiday. Trading on the eves of Christmas, New Year's, and Chinese New Year is conducted from 9 a.m. to 12:30 p.m.

Table 4.1: Singapore Exchange Securities Trading Hours

Phase	Start Time	End Time
Pre-open	8:30 a.m.	8:58 a.m. – 8:59 a.m.*
Non-cancel	8:58 a.m. – 8:59 a.m.*	9 a.m.
Open	9 a.m.	5 p.m.
Pre-close	5 p.m.	5:04 p.m. – 5:05 p.m.**
Non-cancel	5:04 p.m. – 5:05 p.m.**	5:06 p.m.
Close	5:06 p.m.	

* The Pre-Open Phase ends randomly at any time from 8:58 a.m. – 8:59 a.m. and the Non-Cancel Phase will begin immediately after the Pre-Open Phase ends.

** The Pre-Close Phase ends randomly at any time from 5:04 p.m. – 5:05 p.m. and the Non-Cancel Phase will begin immediately after the Pre-Close Phase ends.

Source: Singapore Exchange Ltd. http://www.sgx.com/wps/portal/sgxweb/home/trading/securities/trading_hours_calendar

A trading session for the so-called Buying-In Market, which covers orders needed to regularize failed settlements, is conducted from 3 p.m. to 5 p.m. daily.

SGX introduced continuous all-day trading for the securities market in August 2011. Since then, market prices and data are also generated continuously throughout the day (including during the previous lunch-break period from 12:30 p.m. to 2 p.m.) and disseminated through existing data-feed channels where investors normally obtain such information.

Further information on the bond trading procedures, practices, and conventions is best accessed on the SGX website.⁶¹

D. Mandatory Trade Reporting

There is no specific function for mandatory trade reporting in the Singapore bond market, owing to its overall rather international nature, and no market institution is mandated to capture all bonds and notes trading activities.

Trades in debt securities on SG-ST, or SGX Bond Pro, are automatically recorded on the respective trading platform and made available to each market's participants through their trading platform access, and to the public through the SGX website (see also section C), as well as through information vendors.

Prices and quoted information on debt instruments traded in the OTC market may be available only on international trading platforms, such as Bloomberg or Reuters, or in proprietary systems of brokers or other intermediaries.

E. Market Monitoring and Surveillance in the Secondary Market

In Singapore, market monitoring and surveillance activities are carried out by SGX for the markets and segments under its purview only. At the same time, MAS both governs and monitors the market activities in SGS, since it also operates the SGS issuance and settlement platform. Owing to the largely international nature of the bond market in Singapore, there is no specific monitoring or surveillance of the OTC bond market.

1. Singapore Government Securities Market

MAS prescribes rules and regulations for the market in SGS and operational and risk management standards and processes for market participants. MAS monitors the market conduct of these participants and their activities and will issue enforcement actions in case of breaches of the law and pertinent rules and regulations. Any enforcement actions issued are available for viewing on the MAS website.⁶²

2. On the Singapore Exchange Ltd.

For debt securities traded on SGX, SGX conducts real-time surveillance of its markets to detect unusual trading activities and possible market misconduct. Trading irregularities that

⁶¹ Relevant details will be updated on the SGX (<http://www.sgx.com>) under the Trading tab.

⁶² See <http://www.mas.gov.sg/news%20and%20publications/enforcement%20actions.aspx>

may breach the provisions of the SFA are referred to MAS and the CAD for investigation and action.⁶³

SGX also monitors compliance of listed companies with the Listing Rules and the compliance of SGX members with the Trading and Clearing Rules. Any suspected breach is thoroughly investigated. Appropriate action is taken against offenders taking into account

- (i) severity of the breach,
- (ii) circumstances leading to the breach,
- (iii) compliance track record of the offenders, and
- (iv) mitigating factors.

Under the SGX Disciplinary Framework, severe offenses committed by members may be referred to the Disciplinary Committee to decide on appropriate sanctions.

In 2014, SGX enhanced its regulatory tools in line with international standards by refining its query process and adding new requirements in the following manner:

- (i) enhancing its public query process by
 - (a) providing further guidance and details in the public query; and
 - (b) requiring the company's board of directors to endorse the company's reply to SGX's query;
- (ii) introducing a "Trade with Caution" announcement when companies are unable to explain the trading activities which SGX is querying; and
- (iii) requiring companies to notify SGX of specific transactions and to maintain a list of privy persons; such information is useful in the detection and investigation of possible trading misconduct.

F. Bond Information Services in Singapore

1. Singapore Government Securities Website

MAS hosts and operates the SGS website, which provides comprehensive information on the types of SGS and their issuance, trading, and settlement processes (Figure 4.1). The site also provides information on SGS market activities, including the issuance calendar and auction results. Furthermore, the SGS website serves as a good information source on the legal and regulatory framework, market features, practices and participants, tax, and related incentives, not only for SGS but also for corporate bonds in Singapore. It gives additional information on the eligibility of institutional and individual investors and lists topics for their interest.

The SGS website also carries comprehensive statistics on SGS bonds and T-Bills, such as key information on past auctions, which are also available for download, and include

- (i) daily domestic interest rate,
- (ii) daily SGS prices,
- (iii) outstanding SGS,
- (iv) MAS holdings,
- (v) historical prices,

⁶³ For further details, please refer to http://www.sgx.com/wps/portal/sgxweb/home/regulation/market/market_supervision

Figure 4.1: Singapore Government Securities Homepage

Introduction to Singapore Government Securities

Singapore Government Securities (SGS) are debt instruments of the Government of Singapore. These debt instruments are backed by the full credit of the Singapore Government. The Government does not use debt to finance its expenditure. Instead, SGS bonds and Treasury bills (T-bills) are issued to meet banks' needs for a risk-free asset in their liquid-asset portfolios and as part of a broader strategy to grow Singapore into an international centre for debt capital management. The Government also issues Singapore Savings Bonds, which are non-marketable SGS, to individuals to provide them with a long-term savings instrument. The Monetary Authority of Singapore manages the issuance of SGS on behalf of the Government, in its capacity as the Government's fiscal agent.

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Singapore Savings Bonds

Singapore Savings Bonds are a new type of SGS designed to offer individuals a long-term, flexible savings option with safe returns. They are ten-year bonds that pay higher interest over time based on market SGS rates, and can be redeemed early on a monthly basis. Savings Bonds are issued monthly and can be purchased in units of \$500. Interested investors can refer to the [Savings Bonds website](#) for more information.

[Read more...](#)

Bonds VIEW ALL	Treasury Bills VIEW ALL	Savings Bonds VIEW ALL	Other News VIEW ALL
Auction of N513100T (2Y Reopen) 21 Mar 2016	Auction Result: BY15101S (1-Year T-Bill) 28 Oct 2015	Public notice: SSB issued on 01 Apr 2016 (SBAPR16 GX16040V) 01 Mar 2016	Website Maintenance 29th Nov 2015 26 Nov 2015
No Mini Auction 01 Mar 2016	Auction of BY15101S (1YR T-Bill) 21 Oct 2015	Results: SSB issued on 1 Mar 2016 (SBMAR16 GX16030T) 25 Feb 2016	Website Maintenance 18th October 2015 16 Oct 2015
Auction Results: NA16100H (30Y) 25 Feb 2016	Auction Result: BY15100Z (1-Year T-Bill) 28 Apr 2015	Public notice: SSB issued on 01 Mar 2016 (SBMAR16 GX16030T) 01 Feb 2016	Website Maintenance 22nd Aug 2015 to 23rd Aug 2015 17 Aug 2015
Auction of NA16100H (30Y) 18 Feb 2016	Auction of BY15100Z (1YR T-Bill) 21 Apr 2015	Results: SSB issued on 1 Feb 2016 (SBFEB16 GX16020F)	Website Maintenance 21st Mar 2015
Auction Results: NX11100X (5Y)			

Source: Singapore Government Securities. <http://www.sgs.gov.sg>

- (vi) historical turnover,
- (vii) auction data, and
- (viii) issuance data.

Among the publications accessible via the SGS website are market practice guides, as well as introductions to the bond market at large. One key publication has been the *Singapore Bond Market Guide* published by MAS in 2011, from which selected information has been reproduced in this ABMF bond market guide.

In addition, the Bloomberg E-Bond platform for SGS (see section C) contains live information on SGS traded in the Singapore market among MAS and Primary Dealers, for the information of domestic and international bond market participants.

2. Singapore Exchange Ltd. Bond Trading

This new service introduced in December, known as SGX Bond Pro and housed in SGX Bond Trading (generally referred to as SGX-BT), a licensed recognized market operator, serves as a trading platform for bonds and notes traded in the Singapore OTC market, but is hosted by SGX.

However, one of the key features of SGX Bond Pro will be the availability of bond market data, including general information and disclosure items on the bonds and notes traded, and real-time price and quote availability.

3. Singapore Dollar Corporate Bond Pricing Platforms

To improve price transparency in the SGD corporate bond market and provide reliable mark-to-market prices for the industry, MAS worked with Bloomberg to publish end-of-day indicative prices for SGD-denominated corporate bonds on Bloomberg's platform. The service was launched in 2012 and is available on the Bloomberg Professional service at FIQ and SGDC. Prices are based on last market rates quoted by major Primary Dealers before or at 5 p.m. Singapore time.

Daily end-of-day prices for SGD-denominated corporate bonds are also available on Markit's in-house bond pricing service, which uses multiple observable price sources. Data from this service are used in the pricing of the underlying bonds of Markit's iBoxx SGD Bond Indices, a bond index used to track the performance of SGD-denominated debt.

G. Yield Curves and Bond Indices

1. Government Bond Yield Curve

Daily SGS closing yields and historical data can be found on the SGS website.⁶⁴ The data, as shown in Figure 4.2, reflect bid rates that are quoted by Primary Dealers.

In addition to yields for specific benchmark issues, an aggregate SGS yield curve for selected periods, as well as many more data points can be accessed using the *AsianBondsOnline* website.⁶⁵ An example of the yield data and composite curve style of display is shown in Figure 4.3.

Yield data and curves are also readily available from a number of information vendors.

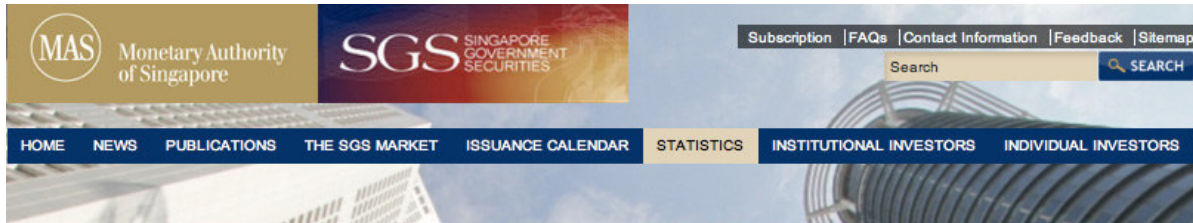
2. Other Bond Yield Curves

In addition to displaying government bond yield data and curves, *AsianBondsOnline* provides corporate bond yield information for the Singapore market. Such information is also readily available from a number of information vendors such as Bloomberg.

⁶⁴ See <https://secure.sgs.gov.sg/fdanet/SgsBenchmarkIssuePrices.aspx>

⁶⁵ See http://asianbondsonline.adb.org/singapore/data/marketwatch.php?code=government_bond_yields

Figure 4.2: Singapore Government Securities Prices Web Page Closing Yields



Daily SGS Prices

Other Daily Updates

▶ [Domestic Interbank Rates](#)

▶ [SGS Original Maturities](#)
 1-Year | [2-Year](#) | [5-Year](#) |
[7-Year](#) | [10-Year](#) | [15-Year](#) |
[20-Year](#) | [30-Year](#)

Historical Database

▶ [SGS Benchmarks](#)
 ▶ [SGS Bonds](#)
 ▶ [SGS Treasury Bills](#)

Singapore Government Securities - Benchmarks  

Closing Levels

ISSUE CODE COUPON RATE MATURITY DATE	TREASURY BILLS			BONDS									
	1-YEAR	2-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	30-YEAR						
	BY15101S	N215100F	NX11100X	NX15100Z	NZ10100F	NZ13100V	NA16100H						
	1.375%	2.250%	2.375%	2.875%	3.375%	2.750%							
	01 NOV 2016	01 OCT 2017	01 JUN 2021	01 JUN 2025	01 SEP 2030	01 SEP 2033	01 MAR 2046						
	YIELD	PRICE	YIELD	PRICE	YIELD	PRICE	YIELD	PRICE	YIELD	PRICE	YIELD		
16 Mar 2016	1.04	100.56	1.01	102.08	1.83	101.42	2.20	103.93	2.55	109.77	2.67	98.90	2.80
17 Mar 2016	1.00	100.69	0.92	102.75	1.70	102.85	2.03	105.56	2.42	111.76	2.54	100.99	2.70
18 Mar 2016	1.00	100.68	0.93	102.71	1.70	102.91	2.03	105.76	2.40	112.03	2.52	101.18	2.69
21 Mar 2016	1.01	100.66	0.94	102.51	1.74	102.56	2.07	105.32	2.44	111.52	2.55	100.58	2.72
22 Mar 2016	1.00	100.68	0.93	102.65	1.71	102.65	2.06	105.36	2.43	111.73	2.54	100.76	2.71
23 Mar 2016	1.00	100.68	0.92	102.65	1.71	102.62	2.06	105.29	2.44	111.76	2.54	100.75	2.71

- Data reflect bid rates quoted by SGS primary dealers.
- Yield is quoted as % p.a.
- Bond price is quoted in S\$ per S\$100 of principal amount, excluding any applicable accrued interest (i.e. on clean basis).

High / Low Levels

ISSUE CODE COUPON RATE MATURITY DATE	TREASURY BILLS			BONDS										
	1-YEAR	2-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	30-YEAR							
	BY15101S	N215100F	NX11100X	NX15100Z	NZ10100F	NZ13100V	NA16100H							
	1.375%	2.250%	2.375%	2.875%	3.375%	2.750%								
	01 NOV 2016	01 OCT 2017	01 JUN 2021	01 JUN 2025	01 SEP 2030	01 SEP 2033	01 MAR 2046							
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW		
16 Mar 2016	-	-	100.63	100.63	102.28	102.05	101.55	101.20	104.30	103.30	109.65	109.18	99.35	98.68
17 Mar 2016	-	-	100.77	100.71	102.80	102.38	102.70	102.10	105.70	104.70	111.80	110.90	100.40	99.50
18 Mar 2016	-	-	-	-	102.85	102.65	103.15	103.00	106.00	105.71	112.45	112.00	101.10	101.10
21 Mar 2016	-	-	100.74	100.71	102.63	102.50	102.70	102.70	105.40	105.40	111.60	111.60	100.80	100.70
22 Mar 2016	-	-	100.75	100.69	102.70	102.40	102.68	102.45	105.35	105.10	111.42	111.42	100.40	100.40
23 Mar 2016	-	-	100.73	100.73	102.65	102.53	102.55	102.55	105.55	105.15	111.90	111.40	-	-

- Data reflects the highest/lowest transacted price in the inter-dealer market for bonds. Treasury Bills are quoted in yield terms.
- Yield is quoted as % p.a.
- Bond price is quoted in S\$ per S\$100 of principal amount, excluding any applicable accrued interest (i.e. on clean basis).

Source: Singapore Government Securities. <http://www.sgs.gov.sg>

Figure 4.3: AsianBondsOnline Web Page of Singapore Government Securities Yield Curve for Selected Periods

ADB AsianBondsOnline
An ASEAN+3 Initiative

Home What's New About Us Feedback Contact Us Site Map

Google Custom Search SEARCH

REGIONAL OVERVIEW Brunei Darussalam Cambodia People's Republic of China Indonesia Japan Republic of Korea Lao People's Democratic Republic Malaysia Myanmar Philippines Singapore Thailand Viet Nam

Singapore

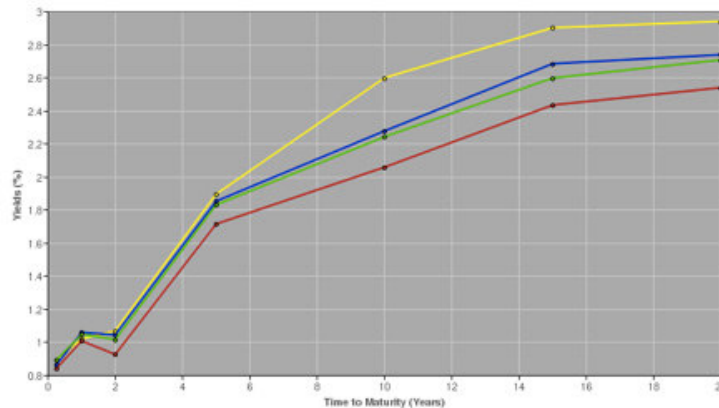
Market-at-a-Glance Data Market Structure ABMF Guide To Buying Bonds Market Summary News

Singapore >> Data

Government Bond Yield Curves for Selected Periods

SG - LCY Government Bonds	Latest Closing (22-Mar-2016)	YTD (bp)	MTD (bp)
3 Month	0.840	▼ 5.3	▼ 2.2
1 Year	1.007	▼ 1.2	▼ 5.1
2 Year	0.925	▼ 14.4	▼ 11.9
5 Year	1.714	▼ 18.1	▼ 13.8
10 Year	2.057	▼ 54.1	▼ 21.9
15 Year	2.433	▼ 46.7	▼ 25.0
20 Year	2.538	▼ 40.1	▼ 19.9
United States (T-Bond)	Latest Closing (22-Mar-2016)	YTD (bp)	MTD (bp)
1 Month	0.244	▲ 12.2	▲ 2.5
3 Month	0.295	▲ 13.2	▼ 2.0
6 Month	0.442	▼ 3.2	▼ 2.7
1 Year	0.611	▲ 1.4	▲ 1.4
2 Year	0.887	▼ 16.1	▲ 11.3
3 Year	1.070	▼ 23.7	▲ 17.7
5 Year	1.414	▼ 34.6	▲ 20.2
7 Year	1.733	▼ 35.8	▲ 21.6
10 Year	1.940	▼ 32.9	▲ 20.6
30 Year	2.722	▼ 29.3	▲ 10.7

Government Bond Yield Curves for Selected Periods



bp = basis point, LCY = local currency, MTD = month-to-date, SG = Singapore, YTD = year-to-date.
Source: AsianBondsOnline. Singapore > Data Government Bond Yield Curve for Selected Periods. http://asianbondsonline.adb.org/singapore/data/marketwatch.php?code=government_bond_yields

The recently launched SGX Bond Pro trading platform is expected to deliver additional market data, including yield information, on its traded bonds once sufficient information is available.

3. Bond Indices in Singapore

Domestic banks, such as United Overseas Bank, provide Singapore fund managers and other Institutional Investors with Singapore Government bond indices, which allow the market participants to track the performance of their portfolios.

In 2013, Markit and SGX, in conjunction with Thomson Reuters, introduced a suite of Singapore dollar bond indices designed to meet the needs of fund managers, asset owners, and custodians in benchmarking investment performances. These bond indices include government, statutory board, and corporate bond index series, which are representative of the Singapore dollar bond market.

The bonds under Markit's iBoxx SGD Bond Indices are predominantly priced via Markit's Pricing Service for SGD Corporate Bonds. Where required, the pricing data are complemented by prices derived from other observable data using Markit's valuation models. Unrated bonds are eligible for the index and are assigned an implied credit quality based on the yield spreads. The implied credit quality will be used to differentiate bonds into investment grade and high yield as well as to individual rating indices. The implied credit quality methodology is available on Markit's website.⁶⁶

On the other hand, the Thomson Reuters–SGX Singapore Fixed Income indices are based on bonds priced objectively and independently by the Thomson Reuters Evaluated Pricing Service, a time-specific assessment of the fair market value of each bond. These indices are ideal for the creation of index-based investment products such as exchange-traded funds, which seek to provide specific investment access to Singapore debt.

The Markit indices are available via the web, ftp format, and third-party vendors. The Thomson Reuters–SGX indices are available on Thomson Reuters' Eikon data distribution platform and also made available for free to Datastream customers; constituent information is being distributed via various industry standard feeds and ftp formats.

Markit and SGX are also able to create and maintain customized indices following individual customers' requirements. Customers can also access their calculation capabilities to construct and publish indices using proprietary index methodologies.

A number of international information vendors also calculate and publish bond indices for the Singapore market. One example is S&P Dow Jones Indices, a unit of McGraw Hill Financial. The company tracks the S&P Singapore Corporate Bond Index (ticker symbol: SPBSGCPT), which is a composite index across all corporate bonds issued in Singapore. Please see Figure 4.4 for an example.

In addition, S&P Dow Jones Indices also offers a breakdown of the index into a number of component indices, including the

- S&P Singapore Agency Bond Index and
- S&P Singapore Financials Bond Index.

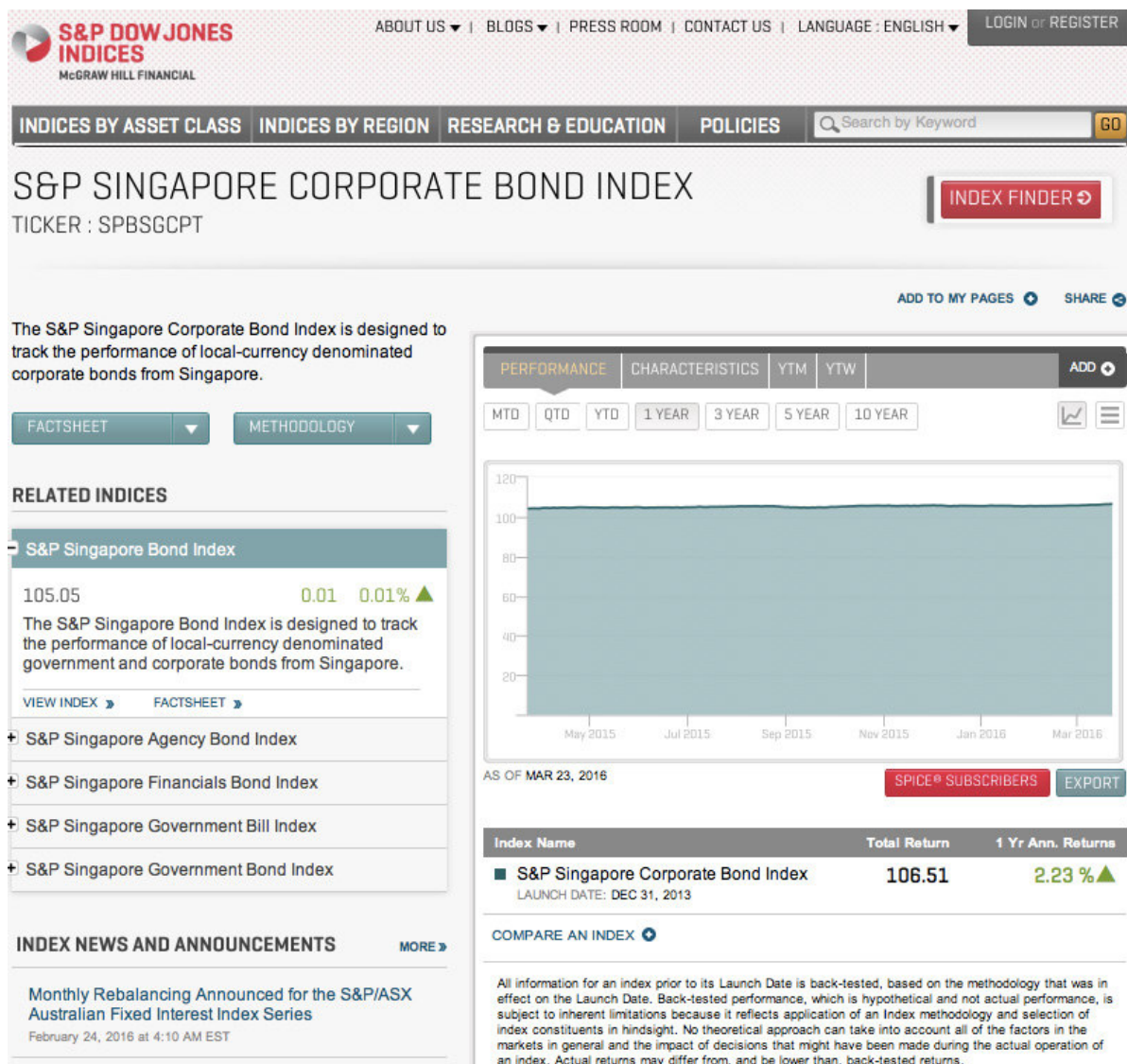
⁶⁶ See <http://www.markit.com/indices>

At the same time, a number of SGS indices are available from S&P Dow Jones, including the

- S&P Singapore Government Bill Index and
- S&P Singapore Government Bond Index.

S&P Singapore Bond Indices are available to registered S&P Dow Jones subscribers and via public domain websites.

Figure 4.4: Standard & Poor's Web Page of Singapore Corporate Bond Index



Source: Standard & Poor's. Singapore Corporate Bond Index. <http://au.spindices.com/indices/fixed-income/sp-singapore-corporate-bond-index>

4. Inclusion of Singapore Bonds in Other Indices

Singapore was the first Asian country outside of Japan to join the widely followed Citigroup World Government Bond Index in January 2005. SGS are also included in other leading bond indices such as the J.P. Morgan World Government Bond Index and the HSBC Asian Local Bond Index.

H. Repo Market

1. Repo Market Overview

The Singapore market sees two market segments for repurchase agreements (repo) transactions, an interbank or OTC market and bilateral repo transactions between MAS, the SGS Primary Dealers appointed by MAS, and other authorized financial institutions.⁶⁷ The bilateral repo market is also referred to as SGS repo market. Based on feedback from market participants, the majority of repo transactions in Singapore are bilateral SGS repos. The SGS repo market had an average daily turnover of SGD3.42 billion in 2014, SGD2.76 billion for June 2015, and about SGD3 billion for the whole year 2015.⁶⁸

MAS conducts bilateral repo transactions as part of its open market operations, to withdraw or provide liquidity to the banking system. To facilitate trading and market-making by Primary Dealers, MAS operates a repo facility that allows Primary Dealers to borrow SGS from MAS on an overnight basis when the SGS are not readily available from other sources.

There are two main types of SGS repo, corresponding to the two main uses of repo transactions. These are the general collateral repo and specific repo. A general collateral repo is a collateralized loan, with the underlying SGS—not specified in advance of the transaction—used as collateral for the cash received during the first leg of the repo transaction. A general collateral repo is typically used by market participants as a relatively cheaper means to finance their holdings of SGS, and by cash-rich institutions as a secured means of lending cash.

In a specific repo, one party of the transaction asks for a specific SGS and contracts with the other party holding the specific SGS to repo out the bond. A specific repo is typically used by market participants to cover a short position in SGS. In recent times, Primary Dealers have transacted these through the MAS repo facility. Through the eApps platform, Primary Dealers are also able to submit their closing prices and their MAS repo facility bids, streamlining the repo auction process.

MAS also provides to the market the Intraday Liquidity Facility and Standing Facility, which is open to all financial institutions that are participants in MEPS+, MAS' Real-Time Gross Settlement system. The facility allows eligible financial institutions that have signed the PSA-ISMA Global Master Repurchase Agreement (GMRA) with MAS to obtain SGD funds on an intraday and overnight basis, respectively, through repo transactions involving SGS and MAS

⁶⁷ Text includes information and statements adapted by ADB Consultants for SF1 from Executives' Meeting of East Asia and Pacific Central Banks (EMEAP). 2014. *Repo Markets: State of Play, A Report by the EMEAP Working Group on Financial Markets 2014*. http://www.emeap.org/wp-content/uploads/2015/04/Publications_EMEAP_Working_Group_on_FinancialMarkets_-_Report_on_EMEAP_Repo_Markets_.pdf

⁶⁸ Current and historical data available from <https://secure.sgs.gov.sg/fdanet/AverageDailyTurnoverVolume.aspx>

Bills, with appropriate haircuts applied. The Intraday Liquidity Facility is open from 9 a.m. to 5 p.m., with the automated reversal time set at 5:30 p.m. The Standing Facility is open between 2:30 p.m. and 3:30 p.m. and 6 p.m. to 6:25 p.m. depending on the type of collateral pledged. The intraday repo rate and transaction rates at the Standing Facility are based on prevailing market rates unless otherwise determined by MAS, and is broadcast on the MAS website.

On the other hand, funding via the repo market plays a smaller role in Singapore's banking sector. First, the banking sector typically has sufficient liquidity on a day-to-day basis. Second, domestic banks generally prefer to fund liquidity shortfalls via the deeper unsecured borrowing and foreign exchange swap markets. OTC or private repo is transacted between Primary Dealers and Secondary Dealers, or in the interbank market among financial institutions and their institutional clients.

Like other trades in SGS, repo transactions settle in MEPS+, through the accounts of the Primary Dealers and other financial institutions, respectively, on a DVP basis, for both bilateral and OTC repo. Typical settlement date is T+1, from 9 a.m. to 4:30 p.m. on Mondays to Fridays, and 9 a.m. to 12:30 p.m. on Saturdays if settled in MEPS+. OTC repos settle in MEPS+ if SGS are used as collateral, or CDP if the collateral involves high-quality bonds issued by corporates or a statutory board.

Beyond the SGS repo market, MAS has taken steps to develop the domestic corporate bond market. One initiative is the establishment of a Securities Repo Facility, which provides an avenue for key Primary Dealers to borrow SGD-denominated corporate bonds for the purpose of market-making. This facility provides greater assurance that market-makers will be able to deliver securities and reduces the risk of being squeezed in the event that they are unable to cover their short positions, enabling them to make prices more freely. The Securities Repo Facility has been in operation since May 2015.

2. Acceptance of Standards

All market participants are expected to abide by a code of market conduct, which stipulates guidelines on trading conventions and dispute resolutions. In particular, SGS repo transactions are subject to the GMRA to ensure certainty and confidence in transactions. Market participants who wish to access liquidity facilities administered by MAS are also required to agree to MAS' terms and conditions.

3. Specific Repo Practices

This section summarizes a number of relevant practices in the repo market in Singapore.⁶⁹

a. Type of Repo

In Singapore, repurchase transactions represent the "classic repo" type, which refers to outright sale and purchase.

From a legal perspective, securities are transferred to the lender so the lender can sell the securities in the market. In case of default, the lender could liquidate the bonds in the market to settle any obligations of the borrower.

⁶⁹ More details can be found at <http://www.sgs.gov.sg/Publications/Market-Practices.aspx>

b. Size, Tenor, and Cost

The standard market lot size for repo transactions is SGD25 million for tenors from overnight to 1 month. Parties who wish to transact a repo for a different amount or tenor should specify the amount and tenor when requesting for, or providing, quotes.

Unless otherwise agreed between the buyer and the seller, the purchase price shall include the accrued interest. The prevailing market prices shall be used as a guide when determining the purchase price of the securities, which will be known as the dirty price.

The cost of a repo is calculated on the basis of 365 days.

c. Eligible Debt Securities as Collateral

Eligible debt securities for repo transactions include SGS bonds and bills, as well as MAS bills. While market participants are allowed to use other types of collateral, these transactions are rare. Securities eligible for use as collateral are defined as part of the GMRA between counterparties. Under the GMRA, the substitution of collateral is allowed during the term of the repo if the seller requests and the buyer agrees to the substitution.

d. Margin

The variation margin over the tenor of the repo is typically determined in cash. If there is interest payable on the cash margin, such interest will be included in the calculation of the cash margin.

e. Accounting and Tax Treatment

In principle, under the definition of this type of repo transaction (classic repo), the securities are still booked in the borrower's balance sheet even if the securities are already transferred to the lender. Hence, the securities remain in the accounts of the borrower.

The income from the repo fee is considered interest and subject to the normal corporate income tax. Primary Dealers are exempt from tax on income derived from trading of SGS. There is no capital gains tax in Singapore. Foreign investors do not pay withholding tax on MAS or SGS repo transactions.

f. Market Participants

Bilateral repo is conducted between MAS and SGS Primary Dealers, or between MAS and financial institutions that are participants in MEPS+. Market participants in private repo transactions include dealers holding a CMS licence and exempt dealers (financial institutions regulated under the Banking Act).

There are no restrictions on the entrance of foreign investors or nondealer participants to the repo market.

I. Securities Borrowing and Lending

Securities borrowing and lending (SBL) transactions are actively conducted in Singapore, as part of the services provided by SGX–CDP or directly between market participants.

MAS regulates SBL transactions, and requirements for collateral and other conditions through its Regulations, Guidelines, and Notices to the market, typically for individual groups of market participants such as banks (e.g., Securities and Futures [Licensing and Conduct of Business] Regulations) and insurance companies (e.g., Notice 113).

1. Singapore Exchange Ltd. Securities Borrowing and Lending Programme

The SGX's SBL Programme started in 2001 with 200 eligible securities for borrowing and lending. At present, there are close to 600 securities for borrowing and lending, and 12,600 participating investors lending through SBL to 16 financial institutions. In effect, SGX lends securities to borrowers from a lending pool of eligible CDP holdings.

SBL transactions settle in CDP as a separate transaction type, free of payment.

At present, the SGX's SBL Programme does not include fixed income securities.

2. Direct Transactions

Securities lending and borrowing between market counterparties is conducted as direct transactions in the OTC market.

In a direct SBL transaction, counterparties can agree on the debt securities to be part of the transaction, the collateral to be posted and other such conditions directly between them in an OTC transaction. The transfer of the borrowed debt securities and the related collateral (if not cash) are typically instructed and settled as individual free of payment transactions at either MEPS+ or CDP, depending on the underlying debt securities. In addition, many SBL transactions between counterparties in Singapore involve international debt securities that are held and settled through Clearstream or Euroclear or in markets other than Singapore.

For this type of transactions, lenders and borrowers will have an SBL agreement in place, typically under GMRA, and have counterparty clearance and limit mechanisms in place. Acceptable collateral, permissible clearinghouses, or depositories will have been incorporated into this agreement at the outset.

3. Eligible Debt Securities

The eligible securities for the SGX's SBL Programme include about 600 identified securities safekept at CDP, via a lending pool made up of the holdings of Lending Participants in these securities. Fixed income securities are not yet included among these identified securities.

Eligible debt securities for direct transactions are determined via agreements between market counterparties and can include debt securities issued in Singapore or other markets.

4. Tax Treatment

Similar to the interest from a repo transaction, the lending fee from securities lending transactions is considered income and subject to corporate income tax for Singapore entities. Foreign investors do not pay withholding tax on the trading or transactions in SGS.

J. Interest Rate Futures

At present, no specific interest rate futures for the hedging of exposure to SGS or SGD-denominated corporate bonds are traded in the Singapore market.

However, SGX trades futures contracts and options on Japanese Government Bonds on its derivatives market, as well as Eurodollar and Euroyen interest rate futures based on the London Interbank Offered Rate and Tokyo Interbank Offered Rate, respectively.

For more information on these derivatives, readers are invited to visit the SGX website.⁷⁰

⁷⁰ See <http://www.sgx.com/wps/portal/sgxweb/home/products/derivatives>