Part 2

Country Reports

Contents

Brunei Darussalam (BN)

Bond Market Infrastructure

Overview of Bond Market

Brunei Darussalam's (Brunei) debt market consists of a selected number of *sukuk* adhering to Islamic or *shari'a* principles. *Sukuk Al-Ijarah* are Islamic bonds whose issuance is backed by the buying, selling, and leasing of tangible properties. The certificates are issued on existing assets on the balance sheet of the issuing entity. The assets can be equipment, parcels of land, or planned buildings.

As an initial step to develop its domestic capital markets, Brunei launched its first short-term government *sukuk* on 6 April 2006. The program included the offering of BND150 million (USD92 million) in 91-day commercial paper, which was the first of a series of planned offerings from the government. Following the initial issue of 3-month short-term *sukuk*, Brunei has subsequently extended the maturity from time-to-time depending on its suitability. *Sukuk* issuance has become a regular activity of the government. The Ministry of Finance (MOF) issues *sukuk* on behalf of the government to primary dealers. Eight banks operating in Brunei are the primary dealers. Autoriti Monetari Brunei Darussalam (AMBD) has acted as the agent for these issuances since 24 March 2011. MOF and AMBD are spearheading initiatives aimed at deepening Brunei's capital markets.

In regard to corporate *sukuk*, there are only a few companies issuing *sukuk* at present. Corporate *sukuk* have either 6- or 7-year maturities. Large companies still depend on banks for funding due to the lack of understanding of the benefits of *sukuk*, lack of technical knowledge on *sukuk* issuances, and perception of being able to obtain easy access bank loans. Brunei encourages institutions and business entities, especially corporates, to issue their own *sukuk* in order to reduce their dependency on banks as a source of financing.

There is no settlement system in Brunei. AMBD is currently working on the establishment of the National Payment and Settlement System.

Please refer to **Part 3 BN01 (Government Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF is responsible for the control and management of the public finances of Brunei. MOF is also responsible for the supervision, control, and direction of all matters relating to the financial affairs of Brunei such as the consolidated

fund, consolidated revenue account, consolidated loan account, and consolidated trust account, including the preparation of annual statements for all of these accounts.

Autoriti Monetari Brunei Darussalam (AMBD)
AMBD was established on 1 January 2011. It is a statutory body acting as the central bank of Brunei with several core functions, including the formulation and implementation of monetary policy, the regulation and supervision of financial institutions, and the management of the currency. Four divisions that were previously under the MOF merged to create AMBD: (i) Financial Institutions Division, (ii) Brunei Currency and Monetary Board, (iii) Brunei International Financial Center, and (iv) part of the Research and International Division.

Overview of Government Bond Market

The government bond market is limited to the issuance of *sukuk*. A secondary market has not developed yet.

Trading

Over-the-Counter Trading
There is no secondary market in Brunei.

Exchange Trading
There is no secondary market in Brunei. In addition, Brunei does not have an exchange.

Clearing and Central Counterparty
Brunei does not have clearing and central counterparty (CCP).

Bond Settlement
Brunei does not adopt delivery-versus-payment (DVP) settlement for government bonds. The clearing and settlement of *sukuk* generally fall under the facilitation of AMBD.

Cash Settlement
Cash settlement can generally be conducted through appointed settlement banks.

Overview of Corporate Bond Market

The corporate bond market is limited to the issuance of *sukuk*. A secondary market has not developed yet.

Trading

OTC Trading
There is no secondary market in Brunei.

Exchange Trading
There is no secondary market in Brunei. In addition, Brunei does not have an exchange.

CCP

Brunei does not have CCP.

Bond Settlement

Brunei does not adopt DVP settlement for corporate bonds. The clearing and settlement of *sukuk* generally falls under the facilitation of AMBD.

Cash Settlement

Cash settlement can generally be conducted through appointed settlement banks.

Profit Payment and Redemption

Profit Payment and Redemption of Government Bonds

Sukuk accrue profit in place of interest, in accordance with *shari'a*. Although the terms of government *sukuk* are 3 months or 1 year, the government pays profit to investors.

Profit Payment and Redemption of Corporate Bonds

There are several terms of *sukuk* in Brunei from depending on the issuer's suitability. In most cases, the profit is paid on a semi-annually basis.

Typical Business Flows

DVP Flow of Government Bond for Domestic Trade

Brunei does not adopt DVP settlement for government bonds.

Regarding current flow, please refer to **Part 3 BN02 (Government Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Corporate Bond for Domestic Trades

Brunei does not adopt DVP settlement for corporate bonds.

DVP Flow of Cross-Border Bond Transactions

There is no DVP flow for cross-border transactions in Brunei. Brunei sets no specific regulation on cross-border portfolio investments in the country. The import and export of Brunei dollars and foreign currencies are permitted without restrictions. Residents and non-residents can maintain both domestic and foreign currency accounts. There are no restrictions on domestic or foreign currency borrowing or lending among residents and nonresidents. Foreign investors may use all banking services provided by the seven commercial banks operating in the country.

Profit Payment and Redemption of Government Bonds

(i) **Paying Agent**
AMBD acts as the Paying Agent (PA) in requesting payment approval from MOF when AMBD receives notification of a profit payment from an appointed custodian. Once AMBD receives the approval from MOF, AMBD notifies the appointed cash settlement bank of the payment details.

(ii) **Central Securities Depository**
Commercial banks are appointed as a custodian for government *sukuk*, and act as the Central Securities Depository (CSD). The appointed custodian sends notification of redemption and profit payments to AMBD, which acts as a PA.

(iii) **Payment Flow**
Money transfers can be conducted through appointed settlement banks. An appointed cash settlement bank transfers cash from MOF's account to a settlement bank's account. Then, the appointed cash settlement bank credits the fund to the *sukuk* holders' accounts for profit paid by MOF.

(iv) **Tax**
There is no tax for profit form *sukuk*.

For more details about profit and redemption Flow, please refer to **Part 3 BN03 (Profit Payment Flow of Government Sukuk Al-Ijarah)** and **Part 3 BN04 (Redemption Payment Flow of Government Sukuk Al-Ijarah)**.

Profit Payment and Redemption of Corporate Bonds

(i) **PA**
The profit payment and redemption for corporate *sukuk* in Brunei is via check.

(ii) **CSD**
There is no system in Brunei.

(iii) **Payment Flow**
There is no system in Brunei.

(iv) **Tax**
There is no tax for profit form *sukuk*.

Message Standard

Message Format

There is no settlement system in Brunei.

Message Items

There is no settlement system in Brunei.

Market Practices

Operating Hours

There are no particular operating hours in Brunei.

Settlement Cycle

There is no particular settlement cycle in Brunei.

Fails

There is no particular rule related to fails in Brunei.

Bilateral Netting

There is no particular rule related to bilateral netting in Brunei.

Taxation

There is no taxation on profits from *sukuk*.

Numbering and Coding

Numbering and Coding for OTC and Exchange Markets

Securities Numbering
There is no system for *sukuk*.

Financial Institution Identification
There is no system for *sukuk*.

Securities Account
There is no system for *sukuk*.

Cash Account
There is no system for *sukuk.*

Character Code and Language
There is no system for *sukuk*.

Medium- to Long-Term Strategies

There is no settlement system in Brunei. AMBD is currently working on the establishment of the National Payment and Settlement System. AMBD is also pursuing a number of initiatives, including infrastructure and legal reforms to further develop the financial market and establish Brunei as an international financial center. Specific actions include

(i) encouraging potential issuers,
(ii) issuing government *sukuk* with different maturities,
(iii) exploring and introducing other type of *sukuk,*
(iv) increasing the volume of *sukuk* to cater to eligible investors,
(v) facilitate trading in the secondary market, and
(vi) designing clear legislation and infrastructure.

The government is considering an increase in the volume and maturity of issuances. This is aimed at extending the yield curve to include longer maturities and developing the domestic capital market.

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Note: Some parts of this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

People's Republic of China (CN)

Bond Market Infrastructure

Overview of Bond Market

The People's Republic of China's (PRC) bond market comprises the interbank bond market and the exchange bond market.[1]

In 2001, more than 98% of trades (by value) took place in the interbank bond market, which is a wholesale market known as the PRC's over-the-counter (OTC) market. The China Foreign Exchange Trade System (CFETS), also known as the National Interbank Funding Center (NIFC), provides the electronic platform for the interbank bond market. The OTC market does not have a single owner and is operated by CFETS. Participants in the interbank bond market are institutional investors. It is a quote (price)-driven market trading government bonds, corporate bonds, central bank bills, enterprise bonds, policy bonds, other financial bonds, subordinate bonds, short-term financial bills, USD-denominated bonds, international development institution bonds, medium-term notes (MTNs), mortgage-backed securities (MBS), and asset-backed securities (ABS). The People's Bank of China (PBOC) supervises and regulates the interbank bond market. In recent years, with market-oriented guidelines the PBOC, together with the relevant departments and the industry, implemented a series of measures to promote the development of the interbank bond market. Toward this end, the PBOC also supervises and guides the National Association of Financial Market Institutional Investors (NAFMII). Interbank bond market-traded bonds are settled through either the China Central Depository and Clearing (CCDC) or the Shanghai Clearing House (SHCH). Currently, government bonds, policy bank bonds, central bank bills, and other conventional instruments are settled by CCDC, while new instruments such as super and short-term commercial paper (SCP), commercial paper, and private placement notes (PPN) are settled by SHCH.

Cash is transferred through the high-value payment system (HVPS) of the China National Automatic Payment System (CNAPS), a type of Real Time Gross Settlement (RTGS) system, which is operated by the PBOC. SHCH is designated to provide centralized clearing services in the interbank bond market, and started production operations at the end of 2011. The PBOC is opening the interbank bond market for cross-border trade.

The stock exchanges started government bond trading in 1992, and all government bonds

[1] There is a retail bond (OTC) market called the commercial bank counter market. Since the size of the market is negligible compared with the interbank bond market, it is not included in this survey.

were traded on the stock exchanges by 1995. Corporate bonds are also traded in the stock exchanges. Data traded on the exchange markets are transmitted to China Securities Depository and Clearing Cooperation (CSDCC) and settled using commercial bank money.

Non-residents need to access the exchange markets—the Shanghai Stock Exchange (SSE) and/or Shenzhen Stock Exchange (SZSE)—as a qualified foreign institutional investor (QFII). The PBOC is in the process of opening the interbank bond market to QFIIs.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the absolute amount of local currency (LCY) bonds outstanding in the PRC at the end of 1Q13 was USD2.827 trillion for government bonds and USD1.110 trillion for corporate bonds.[2]

Please refer to **Part 3 CN01 (Government Bond Market Infrastructure Diagram)** and **Part 3 CN02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF manages the central government's finances, as well as the structuring and balancing of the government debt portfolio. The issuance of treasury bonds falls under the purview of MOF.

China Securities Regulatory Commission (CSRC)
CSRC was mandated to regulate the PRC's securities and futures market in October 1992. It is an independent regulatory body and supervises and regulates the operations of the entire capital market, stock exchanges, and CSDCC.

People's Bank of China (PBOC)
The PBOC is the PRC's central bank with the responsibility to supervise and regulate financial markets. The PBOC was established on 1 December 1948 and started its function as the central bank of PRC in 1983. The PBOC operates HVPS.

[2] LCY bonds outstanding for China include amounts of LCY bonds issued by non-residents.

China Foreign Exchange Trade System and National Interbank Funding Center (CFETS/NIFC)
CFETS, founded on 18 April 1994, is a sub-institution of the PBOC. It is also referred to as "Chinamoney" and its main functions include

(i) organizing and providing systems for foreign exchange (FX) trading, CNY lending, bond trading, and exchange-rate and interest-rate derivatives trading;

(ii) providing clearing, information, risk management, and surveillance services in interbank bond markets; and

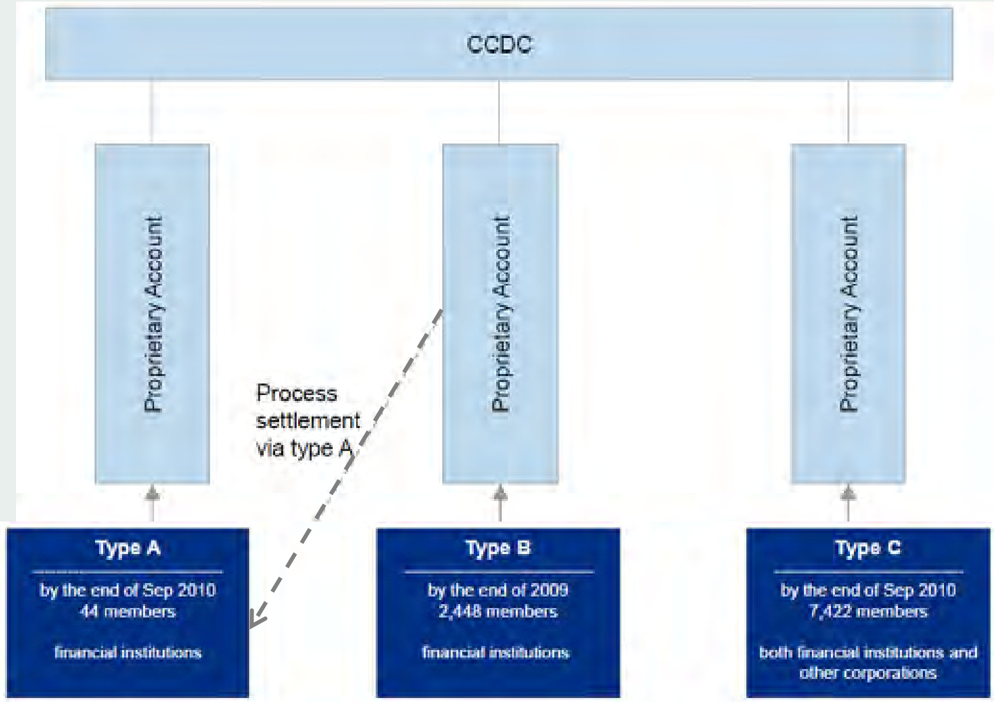
(iii) engaging in other businesses authorized by the PBOC.

Shanghai Stock Exchange (SSE)
SSE was founded on 26 November 1990 and began operations on 19 December 1990. It is a membership institution directly governed by CSRC. The membership of SSE includes domestic brokers and a small number of foreign brokers. SSE deals with A-Shares; B-Shares; government, corporate, and convertible bonds; and securities investment funds.

Shenzhen Stock Exchange (SZSE)
SZSE, established on 1 December 1990, is a self-regulated legal entity under the supervision of CSRC. Its main functions include providing venues and facilities for securities trading, formulating operational rules, arranging securities listing, organizing and supervising securities trading, offering membership supervision and oversight of listed companies, managing and publicizing market information, and other capacities permitted by CSRC.

China Central Depository and Clearing Company, Limited (CCDC)
CCDC, also known as ChinaBond, is a central securities depository (CSD) and a state-owned financial institution operating the ChinaBond Integrated Business System. CCDC mainly serves the interbank bond market and also acts as general custodian for cross-market eligible issues. CCDC-eligible securities are dematerialized, including treasury bonds, local government bonds, policy bank bonds, agency bonds, commercial bonds, commercial bank

Figure CN01: Settlement Membership in People's Republic of China



Settlement membership		Direct access to CCDC	Direct access to CFETS	Cash a/c with	Mode of Settlement	A/C Maintenance Fees by CCDC
A	proprietary + agency	Y	Y	PBOC	DVP, PAD, DAP	10,000 or 18,000/month
B	proprietary	Y	Y	PBOC	DVP, PAD, DAP	1,500/month
C	via type A	N	Y for FI N for Non-FI	Type A	PAD, DAP	500 one-off for account opening

Note:
PAD – Payment After Delivery 见券付款
DAP – Delivery After Payment 见款付券

Source: Citi Bank

bonds, other financial bonds, enterprise bonds, commercial paper, MTNs, MBS and ABS, foreign bonds, and domestic dollar bonds, among others. There are over 10,000 system members, including almost all financial institutions and various non-financial entities, as well as institutional investors. CCDC also provides nearly 9 million retail bond investors in the OTC market with inquiry services. CCDC's business line covers issuance, registration, custody, settlement, principal and interest payment, and collateral management, as well as services on information, research, consultancy, training, and magazine production. CCDC operates a proprietary network based on multi-telecommunications operator lines, with an integrated services digital network (ISDN) and dial-up combined. CCDC has several links with CSDs and international CSDs, including the link with CSDCC, outbound links with Hong Kong Monetary Authority's (HKMA) Central Moneymarket Unit (CMU), and Clearstream **(Figure CN01)**.

China Securities Depository and Clearing Corporation (CSDCC)

CSDCC is owned by SSE and SZSE, and operates a CSDCC system for the exchange market. CSDCC-eligible securities are dematerialized and include stocks, bonds, warrants, exchange trade funds, ABS, and repos. The CSDCC business line covers central registry and depository, wherein securities companies and custodian banks act as sub-custodians. CSDCC is also known as Chinaclear.

Shanghai Clearing House (SHCH)
SHCH was authorized by the PBOC and MOF, and incorporated by CFETS, CCDC, China Banknote Printing and Minting Company Limited, and China Gold Coin Corporation. SHCH provides a CCP function to mitigate counterparty and settlement risks, following the Group of Twenty (G-20) recommendation. Also, SHCH provides CSD services for the interbank bond market and both the spot and derivatives FX markets. SHCH currently provides CSD services for innovative instruments and money market tools of the interbank bond market covering SCP, CP, credit risk mitigation (CRM) instruments, and PPN. SHCH has established its proprietary business network through the Synchronous Digital Hierarchy.

The regulatory framework for the PRC's financial markets is presented in **Figure CN02**.

Overview of Government Bond Market

Trading

OTC Trading
Bonds are traded through CFETS/NIFC and brokers and/or dealers. The Automated Interbank Trading System (AITS) of CFETS has a trade-matching function. AITS is linked with the centralized bond book-entry system of CCDC and the clearing business integrated processing system of SHCH to support straight-through-processing (STP) of the trading and settlement layers of the interbank bond market.

Exchange Trading
Institutional market participants recognized by SSE may provide daily bilateral quotations for bonds traded on SSE's block trading system, with the specific bonds and the spreads to be determined at their discretion to the extent permitted by SSE rules. Bonds listed on SZSE are traded on an SZSE integrated negotiated trading platform. To support STP, the exchanges are linked with CSDCC. The market is regulated by the CSRC. Although the exchange market provides platforms for bond transactions, institutional investors prefer to transact bonds in the interbank bond market.

CCP

CCP for the OTC Market
There is no CCP for government bonds traded on the OTC market.

CCP for the Exchange Market
CSDCC provides the CCP function for the exchange market.

For more details, please refer to **Appendix 1—Clearing, CCP, DVP, and Pre-Matching Procedures by CSDCC**.

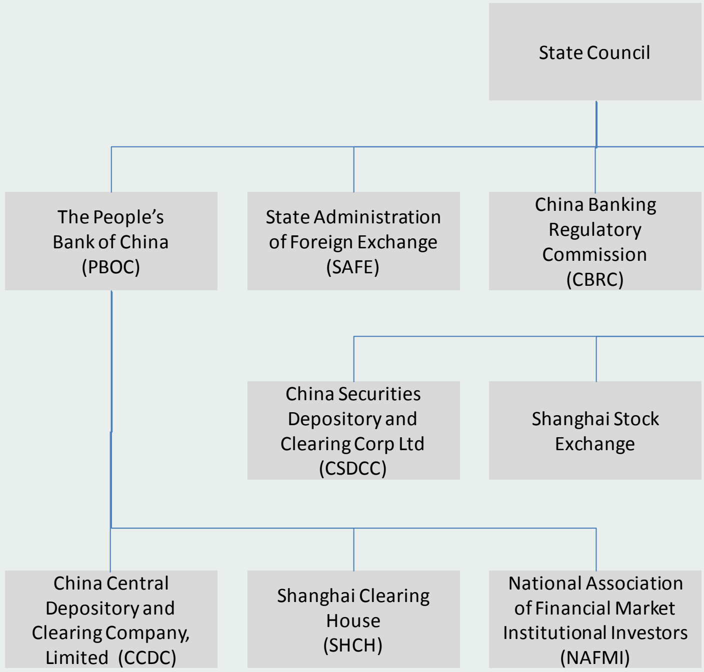
Bond Settlement

Bond Settlement in the OTC Market
Government bonds traded in the OTC market are settled by CCDC **(Figure CN03)**. Bond transactions are matched by the Central Bond Generalized System (CBGS) and settled through safekeeping account in the CBGS.

CBGS is linked with AITS of CFETS to support STP of the trading and settlement layers of the interbank bond market. If two members negotiate a transaction through the trading system of CFETS, trade data are sent in real time from the trading system to CBGS. Upon receiving the trade data, CBGS checks its validity and sends settlement instructions to both parties for confirmation. The transaction can be settled only after confirmation.

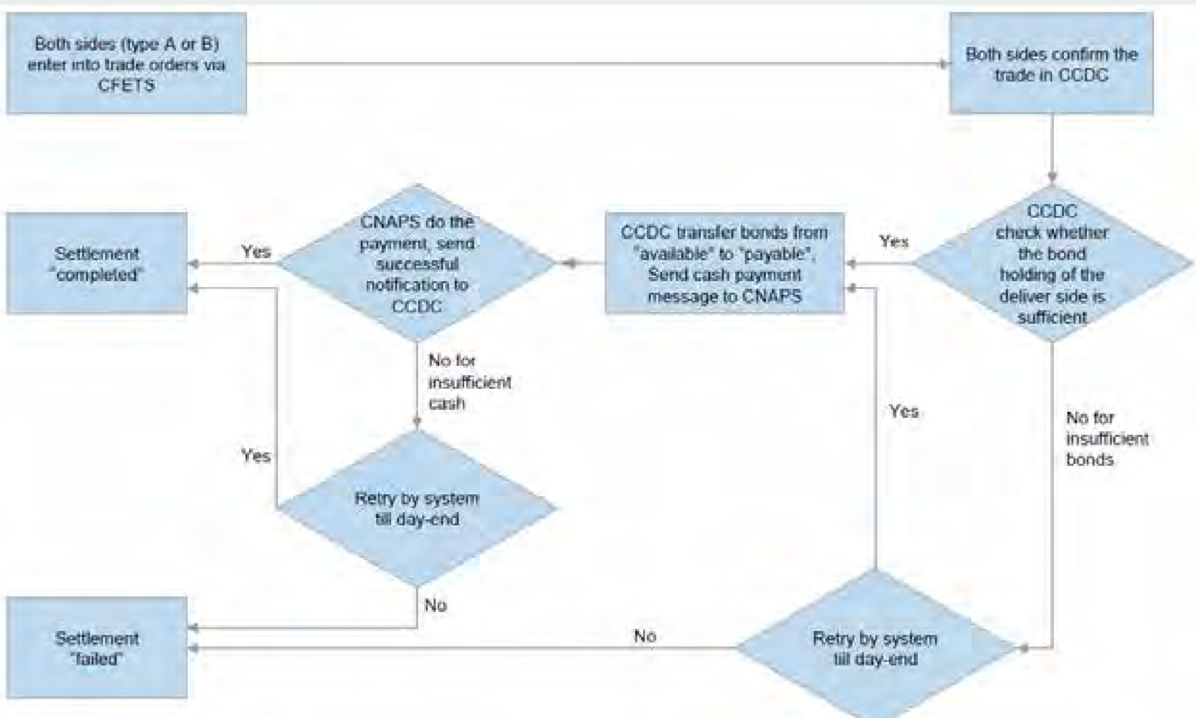
CCDC adopts delivery-versus-payment (DVP) Model 1 of the Bank for International Settlements' (BIS) definition.

Figure CN02: Regulatory Framework for Chinese Financial Market



Source: Created by ADB based on information from HSBC China.

Figure CN03: DVP Workflow (CCDC)



Source: Citi Bank

Bond Settlement in the Exchange Market
Government bonds traded in the exchange market are settled at CSDCC after netted. CSDCC adopts DVP Model 2 of the BIS definition.

Cash Settlement

Cash Settlement in the OTC Market
Bond settlement of government bond transactions at CCDC is simultaneously processed with cash settlement through the current accounts of HVPS of CNAPS. In 2004, CCDC system linked to the HVPS, which achieved DVP for interbank bond trades.

Cash Settlement in the Exchange Market
Cash settlement is handled by commercial banks, while CSDCC uses a Participant Remote Operating Platform for SSE market's business and an Integrated Settlement Terminal for SZSE market's business.

Overview of Corporate Bond Market

Trading

OTC Trading
Business procedures and system infrastructure for corporate bonds are the same as those for government bonds.

Exchange Trading
The exchange trades of corporate bonds take place in SSE and SZSE. The trading process is the same as that for government bonds.

CCP

CCP in the OTC Market
SHCH is the designated CCP for the OTC market. SHCH provides CCP services for bond transactions in the interbank bond market. Currently, it is used for bonds deposited by SHCH.

The clearing system receives trading data on a real-time basis, and clears the data confirmed by participants. After clearing, the clearing system generates funds and securities settlement instructions. Then the securities settlement instructions are sent to the SHCH registration and settlement system. Funds settlement instructions are handled by HVPS or the designated settlement banks.

CCP in the Exchange Market
CSDCC serves as CCP to provide multilateral netting of transactions in bonds traded on the exchange market. CSDCC directly receives transaction information from the trading systems, and achieves STP from trading to clearing by connecting its registration, clearing, and settlement systems with the trading systems of the SZSE and SSE.

Bond Settlement

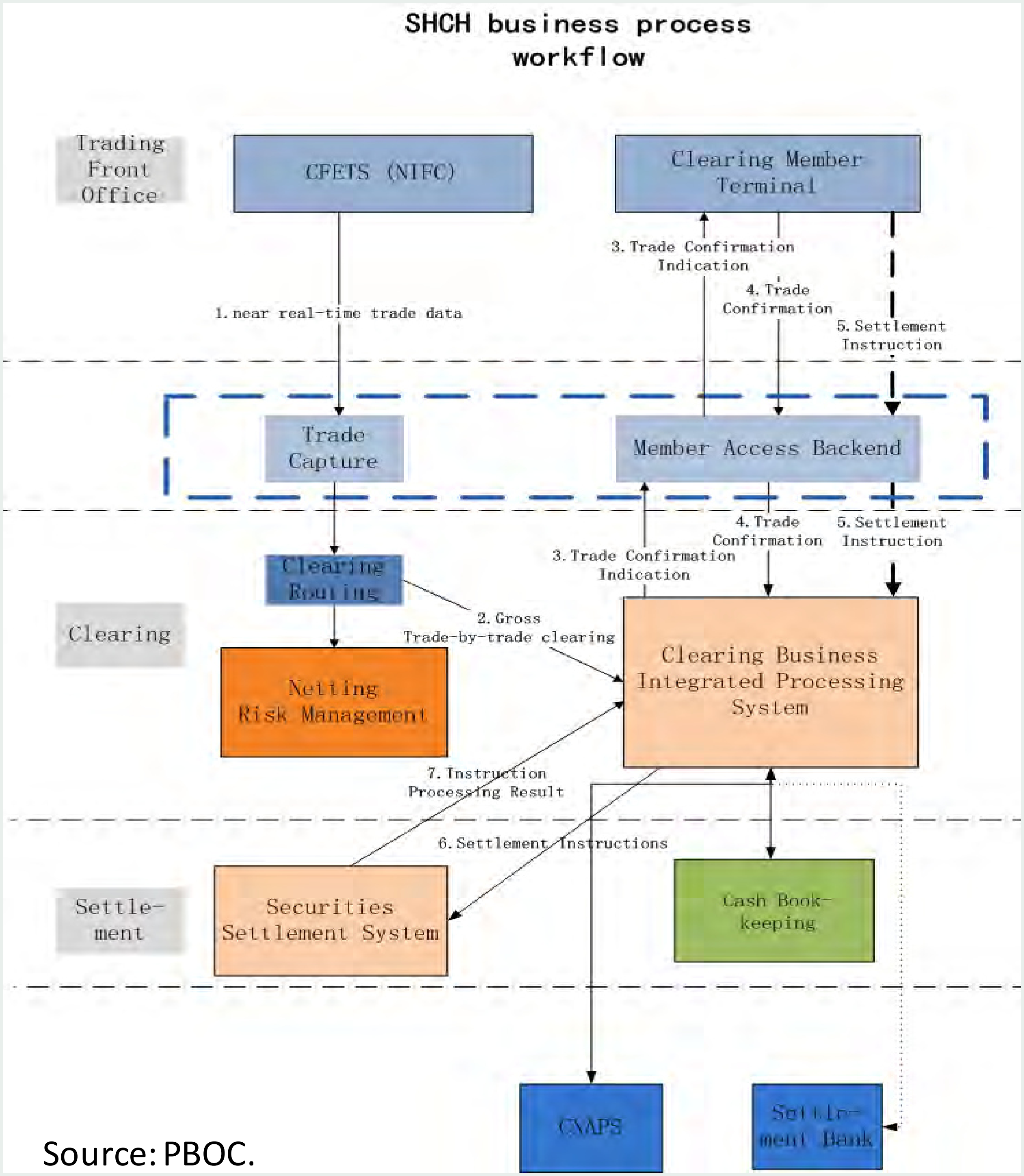
Bond Settlement in the OTC Market
There are two CSDs for the OTC corporate bond market. One is CCDC and the other is SHCH. CCDC provides CSD services for corporate bonds such as commercial bank bonds, other financial bonds, enterprise bonds, commercial paper, MTNs, MBS and ABS, foreign bonds, and domestic dollar bonds, among others. SHCH provides CSD services for innovative instruments and money market tools of the interbank bond market, covering short-term commercial paper, commercial paper, CRM instruments, and private placement notes. For bonds deposited by SHCH, trades are matched by the Clearing Business Integrated Processing System and settled by the Securities Settlement System of SHCH after receiving transactions from CFETS. Both CCDC and SHCH adopt DVP Model 1 of the BIS definition.

Bond Settlement in the Exchange Market
Bond settlement of corporate bond transactions in the exchange market is the same as that of government bonds.

Cash Settlement

Cash settlement of corporate bonds is almost same as that of government bonds. In addition, for bond transactions settled at SHCH using DVP, cash settlement can be processed in one of three ways. Institutions that have accounts in HVPS can achieve DVP directly through HVPS. Institutions that do not have accounts in HVPS can achieve DVP either through commercial bank agents or through their cash settlement accounts at SHCH (**Figure CN04**).

Figure CN04: SHCH Business Process Workflow



Source: PBOC.

The intraday liquidity facility includes intraday overdraft. Collateralized lending is also available and can be used prior to intraday overdraft. Overnight overdraft is not allowed.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

In the case of fixed-income instruments, the interest payment and redemption date are normally predetermined.

Investors who hold the bonds on the record date for the interest and redemption payment are entitled to receive the payments. For treasury bonds, the interest is normally paid 1 working day after the record date.

Interest and redemption on debt instruments are paid on an actual receipt basis as contractual income cannot be offered to QFIIs since custodian banks are not allowed to provide credit facilities to QFIIs.

Interest Payment and Redemption of Corporate Bonds

The situation for corporate bonds is almost the same as that for government bonds. For convertible bonds, the interest is normally paid 2 working days after the record date.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

DVP Flow of Government Bonds in the OTC Market

Business flows in the PRC's OTC government bond market is analyzed by means of comparison with typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
There is no automated pre-settlement matching system in the OTC government bond market. The sell side and buy side send settlement instruction to the designated CSD (CCDC), which matches instructions within the system on S-1.

(ii) **Bond Settlement**
Government bonds traded in the OTC market are settled via a book entry system called CBGS that is operated by CCDC. CCDC receives trade data from CFETS after the trade matching. Then, CCDC forwards the trade data to both the sell side and buy side. If the data are correct, both sides send the data back to CCDC. CCDC sends a cash settlement request to the PBOC. CCDC adopts DVP Model 1.

(iii) **Cash Settlement**
After the receipt of the cash settlement request from CCDC, the PBOC transfers cash from the buy side's account to sell side's account. Then, the PBOC sends fund a transfer notice to the both sides of the trade.

For further details, please refer to **Part 3 CN03 (Government Bond Transaction Flow for Domestic Trades (OTC))**.

DVP Flow of Government Bonds in the Exchange Market

Business flow in the PRC's exchange government bond market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
In the exchange market, CSDCC sends a notice of trade to be settled to both the sell and buy sides.

(ii) **Bond Settlement**
After the sell side and buy sides receive the notice of the trade from CSDCC, they affirm the settlement notice to CSDCC. Then, CSDCC executes the bond settlement and sends settlement data to the payment bank. CSDCC adopts DVP Model 2.

(iii) **Cash Settlement**
After the receipt of the cash settlement request from CSDCC, the payment bank transfers cash from the buy side's account to the sell side's account. Then, it sends a cash settlement report to both the sell and buy sides.

For further details, please refer to **Part 3 CN04 (Government Bond Transaction Flow for Domestic Trades (Exchange))**.

DVP Flow of Corporate Bonds for Domestic Trades

DVP Flow of Corporate Bonds in the OTC Market

Business flows in the PRC's OTC corporate bond market are analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are almost the same as that for government bonds.

For further details, please refer to **Part 3 CN05 and CN06 (Corporate Bond Transaction Flow for Domestic Trades (OTC))**.

DVP Flow of Corporate Bonds in the Exchange Market

The business flow in the PRC corporate bond exchange market is analyzed by means of comparison with a typical DVP flow. The key findings of the analysis are almost the same as those for government bonds.

For further details, please refer to **Part 3 CN07 (Corporate Bond Transaction Flow for Domestic Trades (Exchange))**.

DVP Flow of Cross-Border Bond Transactions

Funds maintained in QFII foreign currency accounts and special renminbi accounts cannot be used for any purposes other than onshore securities investment; pre-funding for securities settlement is required either.

Offshore foreign exchanges are not permitted. Overdrafts are not permitted.

Although there is no explicit regulation prohibiting third-party foreign exchanges from obtaining renminbi, CSRC regulations require a sub-custodian to execute foreign exchanges on behalf of QFIIs. Therefore, it is effectively impossible to execute third-party foreign exchanges to obtain renminbi.

Regarding foreign exchange (FX) reporting, upon approval of an investment license and quota, QFIIs must remit the investment fund within 6 months and no overdue remittance shall be made without approval. Total inbound remittances should not exceed the approved investment amount. If the principal is not fully remitted, but it is more than the equivalent of US$20 million within the prescribed deadline, the investment quota is reduced to the actual remitted-in amount.

For defined open-ended funds, after-tax profits and principal can be repatriated once per month after a 3-month lock-up period (from the initial US$20 million of remittances). Repatriation above US$50 million requires prior approval from the PRC's State Administration of Foreign Exchange (SAFE). For other investor types, SAFE approval is always required to repatriate after-tax profits or any part of the principal after the 1-year lock-up period (starts from the full amount remitted). After-tax profits can be repatriated once each fiscal year (on 31 December), while the principal can be repatriated with SAFE pre-approvals. Repatriation of principal reduces the quota correspondingly.

For further details, please refer to **Part 3 CN08 (Bond Transaction Flow for Foreign Investors OTC Market / RMB Banks)** and **Part 3 CN09 (Bond Transaction Flow for Foreign Investors Exchange Market / QFII)**.

Interest Payment and Redemption of Government Bonds

(i) **PA**
Designated CSDs, CCDC and CSDCC, are appointed as PAs. CCDC and CSDCC send payment request to MOF, make a bond-holder list and calculate the amount of interest. MOF, as issuer of government bonds, instructs the PBOC to pay interest and principal.

(ii) **CSD**
CDCC and CSDCC are appointed as CSDs for government bonds. They have cash accounts in the PBOC for the sake of interest payments because they do not have banking licenses and payment infrastructures.

(iii) **Payment Flow**
The central bank is used in the case of interest payment and redemption as cash settlement infrastructure. In the exchange market, interest and redemption payments are conducted through commercial banks.

(iv) **Tax**
No tax is imposed on either residents or non-residents.

(v) **Other Issues**
The PA does not notify custodians of an interest payment in advance. CSDs segregate account structures and act as a sort of custodian. Both CSD as the custodian and the settlement bank of the bond holder send payment confirmation to the bond holder. In the exchange market, the PA instructs commercial banks to pay interest to bond holders.

For further details, please refer to below **Part 3 CN10 (Interest Payment Flow of Government Bond OTC Market), Part 3 CN11 (Interest Payment Flow of Government Bond Exchange Market), Part 3 CN12 (Redemption Flow of Government Bond OTC Market)** and **Part3 CN13 (Redemption Flow of Government Bond Exchange Market)**.

Interest Payment and Redemption of Corporate Bonds

(i) **PA**
The designated CSDs—CCDC, SHCH, and CSDSS—are appointed as PAs. CCDC, SHCM and CSDCC send a payment request to the bond issuer, make a bond-holder list, and calculate the amount of interest. The bond issuer instructs the designated bank to pay interest and principal.

(ii) **CSD**
CCDC, SHCH, and CSDCC are appointed as the CSD for government bonds. They have cash accounts in the PBOC for the sake of interest payments because they do not have banking licenses and payment infrastructures.

(iii) **Payment Flow**
The central bank is used in the case of interest payment and redemption in the OTC market as cash settlement infrastructure. In the exchange market, interest and redemption payments are conducted through commercial banks.

(iv) **Tax**
In the OTC market, bond holders pay tax to a tax office. In the exchange market, CSDCC withholds tax.

(v) **Other Issues**
The PA does not notify custodians of interest payment in advance. CSDs have a segregated account structure and act as a sort of custodian. Both the CSD as custodian and the settlement bank of the bond holder send payment confirmation to the bond holder. In the exchange market, the PA instructs commercial banks to pay interest to bond holders.

For further details about interest payment, please refer to below **Part 3 CN14 (Interest Payment Flow of Corporate Bond OTC Market)** and **Part 3 CN15 (Interest Payment Flow of Corporate Bond Exchange Market)**.

For further details about redemption, please refer to **Part 3 CN16 (Redemption Flow of Corporate Bond OTC Market)** and **Part 3 CN17 (Redemption Flow of Corporate Bond Exchange Market)**.

Message Standard

Message Format

CCDC and CSDCC adopt proprietary formats. CCDC developed the Chinabond settlement messaging format in accordance with ISO20022 and plans to present them to ISO20022 SEG through the Financial Standardization Technical Committee (CFSTC). SHCH adopts IMIX as its external communication messaging format, which is based on the FIX protocol, one of the participants of ISO20022.

Message Items

Regarding the 10 common elements defined by the Securities Market Practice Group (SMPG), CSDCC has all 10 as mandatory elements in its proprietary format for settlement instruction and settlement confirmation.

Market Practice

Operating Hours

The interbank bond market (CCDC and SHCH) opens at 9:00 and closes at 17:00. CSDCC opens at 8:00 and closes at 16:00.

Settlement Cycle

Government bonds and corporate bonds are settled on a T+0 or T+1 cycle.

Fails

Failed trades are not allowed. In case of wrong execution or settlement, the QFII and broker must resolve it mutually and then rectify the error trade on an ex post facto basis. There are no buy-in or sell-out rules for the QFII market. However, in the event that a custodian runs into an overdraft at its clearing reserve account with CSDCC on T+1, CSDCC imposes an overdraft interest equivalent to the interbank deposit rate, as well as penalty interest (0.1% per day) based on the amount of overdraft. Additionally, CSDCC provisionally retains the securities held by the custodian, equal to 120% of the amount of the overdraft. If the custodian repays the overdraft and interest within 2 days, CSDCC returns the provisionally retained securities. Otherwise, CSDCC disposes of the retained securities to cover the overdraft. If the proceeds from the disposal are not sufficient to cover the principal of the overdraft and the penalizing interest, the difference is claimed from the custodian.

Numbering and Coding

Numbering and Coding in the OTC and Exchange Markets

Securities Numbering

All securities registered on the interbank bond market for CCDC are given an International Securities Identification Number (ISIN). The ISIN is not used for bond trades or settlement, but rather proprietary securities numbering is used. CCDC is planning to create a conversion table within the system to make possible the conversion of proprietary numbering to ISIN. CSDCC adopts the local code instead of the ISIN. It is possible to convert local numbering to ISIN using a conversion rule.

Financial Institution Identification

A proprietary participant code is used for financial institution identification in CCDC. By creating the conversion table in the system, the conversion of proprietary code into a business identifier code (e.g., BIC, ISO9362) is possible. A software program is used in converting BIC and local codes.

Securities Account

The PRC adopts segregated and single-layer accounts. CSDs manage bonds separately from their own bonds and customer's bonds in their book-entry systems. For securities accounts, the proprietary account code is used.

Cash Account
The proprietary account code is also used for cash accounts.

Character Code and Language
Unicode (UTF 8) is used for character codes by CCDC. Chinese authority regards that it is not desirable to use English as a common language for the payment and settlement system, thus, the need to make a standard conversion rule. On the other hand, CSDCC does not use Unicode (UTF) as the character set.

Medium- to Long-Term Strategies

The PRC authorities, in particular the PBOC, are trying to gradually open the interbank bond market to non-residents.

As the main trading platform and the price-setting center of renminbi products, CFETS will continue to strengthen the construction of infrastructure by promoting innovation in debt financing instruments to comply with market demand, optimizing the market transaction mechanism and services mode, and expanding the number market participants (e.g., foreign institutional investors).

CCDC has three major targets to achieve by 2014. First, it is to ensure that its core business, management, and systems meet international standards and are fully prepared for the opening up of the PRC's bond market to the world, as well as supporting the renminbi bond market's move to become the region's core market. Second, it is to diversify on the basis of professionalization by establishing its strengths while developing its core competencies and new business, and protecting against risk and increasing its overall operating capacity. Third, it is to improve its internal management in line with modern financial corporate standards in order to reap both economic and social rewards. CCDC is trying to enhance its comprehensive issuance services, expanding the coverage and depth of registration and depository services, improving its customer service system, improving IT system construction standards, and promoting strategic research and cooperative exchanges.

Cross-border bond-related business will be promoted based on the agreements and Memorandum of Understanding (MOU) with ICSDs and other CSDs. CCDC shall participate in the International Standardization Organization (ISO) and shall participate in making the standards rules and promoting related business. Also, CCDC shall consider the situation of each country and each region, and shall support local businesses as much as possible.

Continuous improvement of the various aspects of registration, custody, clearing and settlement services, and enhancement of STP processing capabilities form the core of the Mid- to Long-Term Strategy and Technical System Construction Plan of SHCH. As a clearing institution and CSD, the business area of SHCH includes registration, depository, clearing, settlement, and other relevant services of renminbi and foreign exchange cash and derivatives.

In terms of registration and depository service, SHCH will improve the efficiency of registration and depository services, as well as reduce the operational risk to meet regulatory requirements. In the aspects of registration, custody, settlement, interest payment, information disclosure, evaluation, collateral management, and other information services for innovative, fixed-income, and money market instruments, SHCH will enhance the quality of services through automated and standardized procedures in line with relevant international standards. In terms of market services, when broadening the business scope of the CCP clearing and enriching the level and range of clearing members, SHCH will implement the recommended standardized approach of BIS and other international standardized institutions. First, it will support and coordinate market regulatory requirements, reform OTC market transactions and settlement agents to improve efficiency and enhance incentive mechanisms by providing relatively automated services. Second, it will support multi-product and multi-market solutions to meet the centralized clearing and settlement requirements of the OTC market, broaden the services network of clearing members, enhance data downloading and uploading services via member terminals, and improve the quality of multi-product cross-market clearing and settlement services in order to prevent systemic risk.

Future plans include a medium- to long-term strategy for bond market infrastructures and standardization. With the listed commercial banks to participate in the exchange bond market, CSDCC is ready to introduce RTGS for a robust clearing and settlement system. CSDCC shall promote registration and confirmation of bond transitions for a block negotiating system and bid-ask trades in the Integrated Electronic Platform of Shanghai Stock Exchange for Fixed-Income Securities (IEPFS). CSDCC also shall promote greater efficiency and effectiveness in cross-market registration, and a corporate bond classified management system will help make risk management more robust.

Appendix 1

Clearing, CCP, DVP, and Pre-Matching Procedures by CSDCC

The securities company shall apply to CSDCC for admission as a CSDCC clearing participant in the central securities clearing and settlement system. A clearing participant shall act as the clearing and settlement agency on behalf of a securities company that is not a clearing participant. CSDCC shall designate a qualified commercial bank for settlement of monetary obligations with respect to the securities clearing and settlement services. The eligibility criteria and conditions applicable to the designated clearing bank shall be set out by CSDCC.

1. Stratified Clearing System
   The central securities clearing and settlement system is structured as a stratified system wherein CSDCC acts as the central counterparty to each clearing participant who in turn acts as the counterpart to each of its clients. CSDCC shall set up a Central Stock Clearing Account and Central Cash Clearing Account for settlement of delivery or payment obligations due to or from the clearing participants on each settlement day. Each clearing participant shall have a Stock Clearing Account and a Cash Clearing Account in CSDCC for settlement of delivery or payment obligations in line with the provisions set out by CSDCC. In relation to a clearing participant involved in proprietary trading, brokerage, and asset management activities simultaneously, a Brokerage Stock Clearing Account and a Brokerage Cash Clearing Account for settlement of brokerage trading shall also be established separate from the Proprietary Stock Clearing Account and the Proprietary Cash Clearing Account, which are used for settlement of proprietary trading.

   Prior to the central settlement of transactions in CSDCC, the clearing participant shall ensure that there are sufficient securities in its Stock Clearing Account as well as sufficient funds in its Cash Clearing Account to effect the settlement by collecting the securities and funds due from clients. So with regard to a clearing participant involved in proprietary trading, brokerage, and asset management activities simultaneously, CSDCC may select to apply the funds in its Proprietary Cash Clearing Account to meet the liabilities owed by its client, provided that the funds in the Brokerage Cash Clearing Account are insufficient to meet the liabilities.

   When the central settlement closes, the clearing participant shall settle the payment or transfer of securities due to the clients. The transfer of securities ownership between the clearing participant and its client shall be executed by CSDCC.

2. Multilateral Net Settlement System—CCP and DVP
   CSDCC may adopt a Multilateral Net Settlement System (MNS System), wherein CSDCC is substituted as the common settlement counterparty to each clearing participant and settlement will be effected between each clearing participant and CSDCC on a DVP basis. The clearing participant who fails to make full payment of any sum payable or fails to deliver the securities due on a timely

basis may not receive the money or securities due from its counterparty.

(i) The payment or delivery obligations between the participants under a particular transaction will be transferred to CSDCC, which becomes substituted as the sole settlement counterparty for the buyer and seller.

(ii) Upon effective transfer of entitlements or obligations under a particular transaction, CSDCC shall be obligated to satisfy the settlement obligations while also being subject to receive any benefit entitlement under that transaction.

(iii) Under the MNS System, the obligation to deliver securities or the amounts to be paid between CSDCC and each clearing participant with respect to the same issue of securities and having the same settlement date shall be set-off against each other to arrive at a net money position or net obligation of securities to be delivered. The clearing participants will be kept informed of its net money or securities position as calculated in the netting process.

CSDCC will settle the net outstanding money and stock position at the stated settlement period by taking the money or securities due from the clearing participant, whilst making the payment or delivery of securities it owes to the clearing participant on an irrevocable basis.

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ADB. *ASEAN+3 Bond Market Guide.*

Executives' Meeting of East Asia Pacific Central Banks *Payment, Clearing, and Settlement Systems in China.*

Shanghai Stock Exchange. *Fact Book 2013*. Shenzhen Stock Exchange. http://www.szse.cn/main/en/

Note: Some parts of this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Hong Kong, China (HK)

Bond Market Infrastructure

Overview of Bond Market

The Hong Kong, China bond market comprises mainly over-the-counter (OTC) markets, while a relatively small portion of bonds are listed and traded on the Hong Kong Stock Exchange. The Central Moneymarkets Unit (CMU) serves as the central securities depository (CSD) for debt securities involving Exchange Fund Bills and Notes (EFBNs), government bonds, and debt securities issued by both public and private entities. CMU is owned and operated by Hong Kong Monetary Authority (HKMA), and provides trade matching and bond settlement services for market participants. It also conducts end-of-day batch settlement on net basis, but does not act as a central counterparty (CCP).

Cash settlement for both government and corporate bonds is performed on the Clearing House Automated Transfer System (CHATS), a computer-based system for electronic processing and settlement of interbank fund transfers. CHATS operates in a Real-Time Gross Settlement (RTGS) mode between banks in Hong Kong, China, and is designed for high-value interbank payments.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the absolute amount of local currency (LCY) government bonds outstanding in Hong Kong, China in 1Q13 was US$100.36 billion, while LCY corporate bonds totaled US$83.27 billion.[1]

Please refer to **Part 3 HK01 (Government Bond Market Infrastructure Diagram) and Part 3 HK02 (Corporate Bond Market Infrastructure Diagram).**

Description of Related Organizations

Hong Kong Monetary Authority (HKMA)
HKMA was established on 1 April 1993 after the Legislative Council passed amendments to the Exchange Fund Ordinance in 1992 empowering the Financial Secretary to appoint a monetary authority. The powers, functions, and responsibilities of HKMA are set out in the Exchange Fund Ordinance, the Banking Ordinance, the Deposit Protection Scheme

[1] LCY bonds outstanding for Hong Kong, China includes LCY bonds issued by nonresidents.

Ordinance[2], the Clearing and Settlement Systems Ordinance, and other relevant ordinances. The division of functions and responsibilities in monetary and financial affairs between the Financial Secretary and HKMA is set out in an Exchange of Letters between them dated 25 June 2003. This Exchange of Letters also discloses the delegations made by the Financial Secretary to the HKMA under the ordinances, which are:

(i) to maintain currency stability within the framework of the Linked Exchange Rate system;

(ii) to promote the stability and integrity of the financial system, including the banking system;

(iii) to help maintain Hong Kong, China's status as an international financial center, including the maintenance and development of Hong Kong, China's financial infrastructure; and

(iv) to manage the exchange fund.

HKMA is an integral part of the government of the Special Administrative Region of Hong Kong, China. In its day-to-day work, HKMA operates with a high degree of autonomy within the relevant statutory powers either conferred upon or delegated to it.

Central Moneymarkets Unit (CMU)
CMU is the debt securities clearing and settlement unit in Hong Kong, China operated by HKMA. Established in 1990, CMU provides an efficient clearing, settlement, and custodian service for debt securities denominated in Hong Kong dollars and other major currencies. It also provides an electronic book-entry system, which eliminates the physical delivery of debt securities between CMU members. These debt securities include Exchange Fund papers, government bonds, and debt securities issued by both public and private sector entities.

In December 1996, a seamless interface between CMU and CHATS for Hong Kong dollars was established. Such a linkage provides real-time and end-of-day delivery versus payment (DVP) services to CMU members. CMU was further linked to CHATS—for US dollars, euros, and renminbi in December 2000, April 2003, and March 2006, respectively—to provide real-time DVP capability for debt securities denominated in these currencies, as well as intraday and overnight repo facilities for their respective payment systems in Hong Kong, China.

Hong Kong Stock Exchanges and Clearing (HKEx)
HKEx is a recognized exchange controller under the Securities and Futures Ordinance (SFO). It owns and operates the only stock exchange and futures exchange in Hong Kong, China and their related clearing houses: the Hong Kong Securities Clearing Company (HKSCC), HKFE Clearing Corporation (HKCC), and SEHK Options Clearing House (SEOCH).

The Stock Exchange of Hong Kong (SEHK)
SEHK, a wholly-owned subsidiary of HKEx, is a recognized exchange company under the SFO. It operates and maintains a stock market in Hong Kong, China and is the frontline regulator of stock exchange participants with respect to trading matters, and of companies listed on the Main Board and the Growth Enterprise Market of SEHK.

Hong Kong Interbank Clearing Limited (HKICL)
HKICL is a private company jointly owned by HKMA and the Hong Kong Association of Banks (HKAB). HKICL was established in May 1995 to implement a phased takeover of the clearing functions provided by the former management bank of the Clearing House, the Hong Kong and Shanghai Banking Corporation Limited (HSBC). The process was completed in April 1997. HKICL provides interbank clearing and settlement services to all banks in Hong Kong, China and operates a central clearing and settlement system including CMY and CHATS for public and private debt securities on behalf of HKMA.

[2] Clearing and Settlement Systems Ordinance (CSSO), which came into force in November 2004, establishes a statutory regime for the Monetary Authority to designate and oversee clearing and settlement systems that are material to the monetary or financial stability of Hong Kong, China, or to the functioning of Hong Kong, China as an international financial center. HKMA is empowered to designate clearing and settlement systems and to oversee these systems on an ongoing basis to ensure their compliance with the CSSO. CSSO also provides statutory backing for the finality of settlement for transactions made through systems designated under the ordinance by protecting the finality of settlement from insolvency laws or other legislation.

Securities and Futures Commission (SFC)
The principal regulator of Hong Kong, China's securities and futures market is the SFC, which is an independent statutory body established in 1989 by the Securities and Futures Commission Ordinance (SFCO). SFCO and nine other securities and futures-related ordinances were consolidated into SFO, which came into effect on 1 April 2003. SFC is responsible for administering the laws governing the securities and futures market in Hong Kong, China. In addition to regulating HKEx, listed companies, and share registrars, SFC oversees licensed corporations and individuals carrying out regulated activities.

Overview of Government Bond Market

Trading

OTC Market
Government bonds in Hong Kong, China are primarily unlisted and traded through the over-the-counter market by negotiation between the sell side and buy side.

Exchange Trading
Government bond trading takes place mostly through the OTC markets. There are few types of debt securities listed on HKEx.

CCP
There is no CCP for the government bond market in Hong Kong, China.

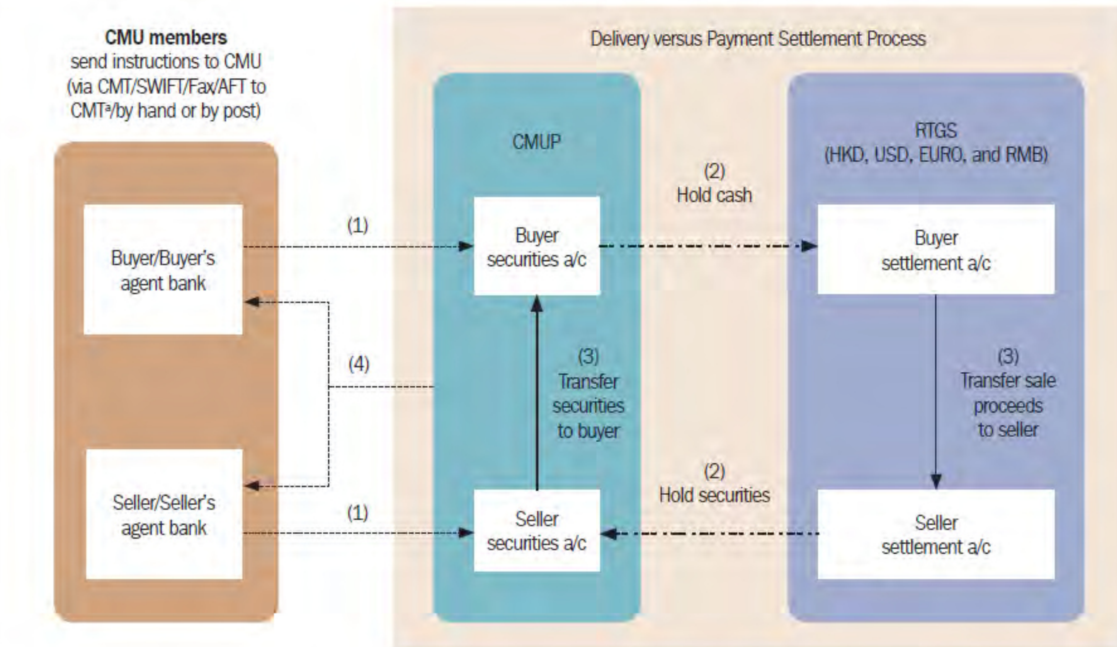
Bond Settlement
In Hong Kong, China, the majority of bond transactions are conducted through the OTC market, and cleared and settled through CMU. The settlement of bond transactions through CMU is final and irrevocable. This finality is protected from insolvency laws and other laws CSSO in particular.

Through the seamless interface between CMU and CHATS, securities transactions can be settled on a real-time or end-of-day DVP basis in CMU. For real-time DVP, both the sell side and buy side input instructions through their CMU terminal or SWIFT. Once the instruction is matched, the matched transaction is stored in the system. The system then locks for the specific securities in the sell side's account and puts the securities on hold, after which an interbank payment message is generated. After the payment initiated by the buy side is settled across the books of HKMA or a settlement institution, a confirmed message is returned to CMU and the securities held are released to the buy side. If the sell side does not have sufficient securities, the system retries at 15-minute intervals until cut-off time, by which time all unsettled transactions are converted to end-of-day transactions and settled during the end-of-day settlement run. Likewise, if the buy side does not have sufficient funds in its cash accounts, the transactions are pending for settlement until sufficient funds are available in the buy side's accounts. If transactions cannot be settled before the cut-off time, the transactions are converted to end-of-day transactions and settled during the end-of-day settlement run.

For end-of-day transactions, securities and cash are settled on a multilateral netting basis. At the time of the end-of-day settlement run, the system calculates the net settlement amount of both securities and cash for each member. The system then checks whether sufficient funds and securities are available for each member. If so, final transfers of both securities and cash for all members are executed simultaneously. Otherwise, all or part of the transfer instructions of the members who do not have sufficient funds or securities are cancelled before the final end-of-day settlement takes place.

The settlement of government bonds is performed via CMU's book-entry system. CMU supports both RTGS, which is DVP Model 1 of the Bank for International Settlements (BIS) definition, and end-of-day net settlement, which is DVP Model 3 of the BIS definition. Presently, over 90% of trades are settled on a DVP basis. In terms of settlement arrangements, if the debt securities are settled using real-time DVP mode, both the cash and securities legs are settled on gross basis. If the debt securities are settled using end-of-day DVP mode, then both cash and securities are settled on a net basis. If the securities are settled using free-of-payment (FOP) mode, settlement is done on a gross basis for real-time FOP and net basis for end-of-day FOP. The settlement process for

Figure HK01: Settlement Process for Government Bond Trades



Notes: (1) Sending instructions to CMUP for validation and matching. (2) Once securities and cash are held, real-time delivery versus Payment settlement takes place in (3). (4) Confirmation send out. (a) By auto-feeding of concluded transactions on electronic trading platform (ETP) at Bloomberg to CMT for further processing (only applicable to registered dealers who have registered to ETP services with CMU)

Source: Hong Kong Monetary Authority.

government bond trades (DVP) is shown in **Figure HK01**.

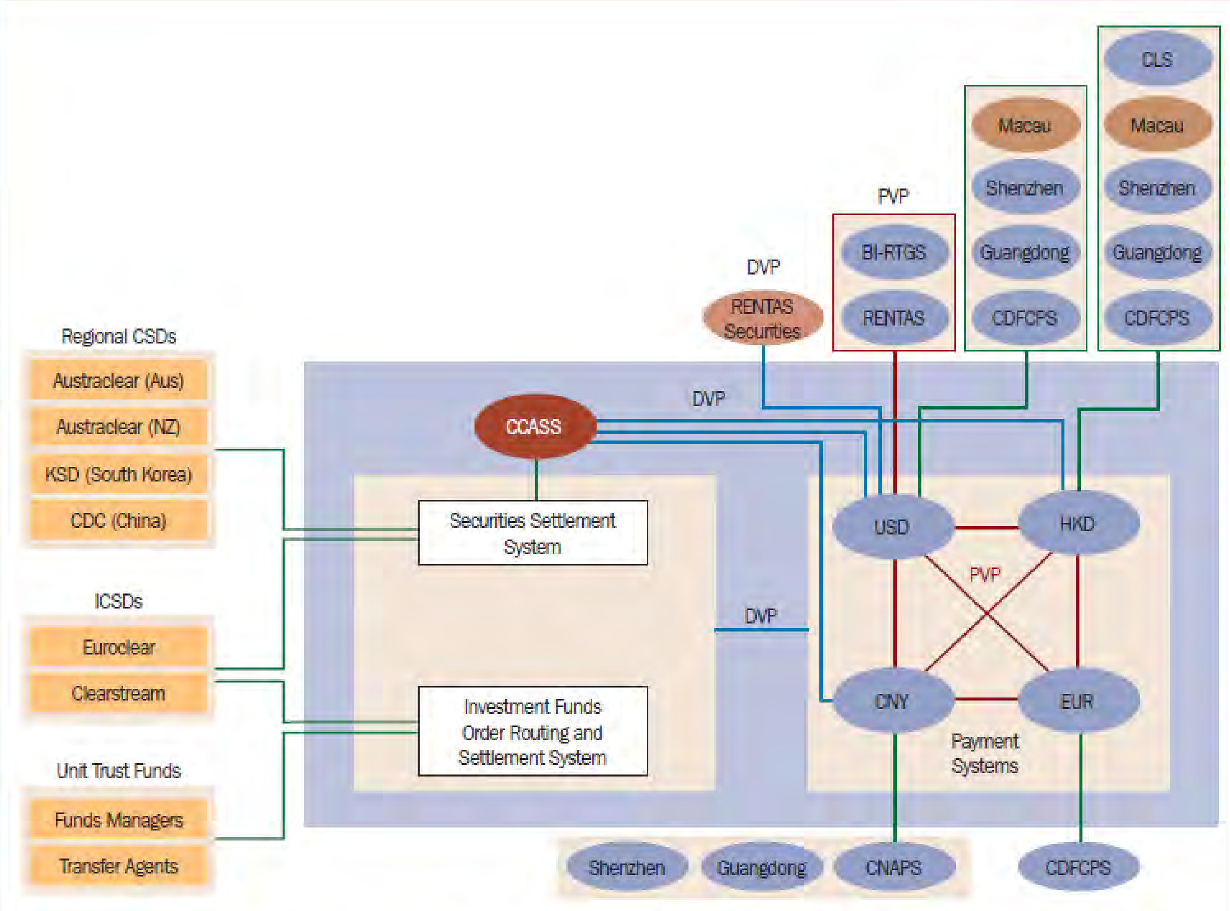
CMU uses SWIFTNet as its network with participants. The types of lines are leased line and the internet protocol is TCP/IP. The interfaces are SWIFTNet InterAct and InterBrowse. The message format is ISO15022.

Over the years, CMU has developed external links with regional CSDs and international CSDs. One-way inbound links from Euroclear and Clearstream, the two largest international CSDs in the world, to CMU were set up in 1994 to allow international investors to hold and settle Hong Kong dollar debt securities through these international networks. The linkages were further extended to two-way (bilateral) links in November 2002 (Euroclear) and January 2003 (Clearstream) to enable investors in Hong Kong, China and other parts of Asia to hold and settle Euroclear and Clearstream debt securities directly in a secure DVP environment via their CMU members.

Hong Kong, China's multi-currency payment and securities settlement infrastructure is shown in **Figure HK02**.

CMU also established links with CDSs in Australia in December 1997, New Zealand in April 1998, and the Republic of Korea in September 1999. Apart from facilitating cross-border holding and settlement of debt securities in Hong Kong, China and overseas, they also enlarged the investor base, broadened domestic debt markets, and reduced settlement risk by facilitating DVP settlement for cross-border securities transactions. HKMA and the China Central Depository and Clearing Co., Ltd. (CCDC) signed an agreement in April 2004 to establish a link between CMU and the Government Securities Book-Entry System (GSBS) operated by the CCDC. This link enables authorized investors in the People's Republic of

Figure HK02: Hong Kong Multi-Currency Payment and Securities Settlement Infrastructure



BI-RTGS = Indonesia payment system; CCASS = Central Clearing and Settlement System (DVP for stock); CDFCPS = China's Domestic Foreign Currency Payment System; CLS = Continuous Linked settlement; CMU = Central MoneyMarkets Unit; CNAPS = China National Automatic Payment System; RENTAS = Real-time Electronic Transfer of Funds And Securities System in Malaysia
Source: Hong Kong Monetary Authority.

China (PRC) to hold and settle Hong Kong, China and foreign debt securities lodged in CMU. These links for Euroclear, Clearstream, New Zealand, and the Republic of Korea are bilateral. Those for the PRC and Australia are unilateral. CMU has an account at Austraclear in Australia, and CCDC has an account at CMU.

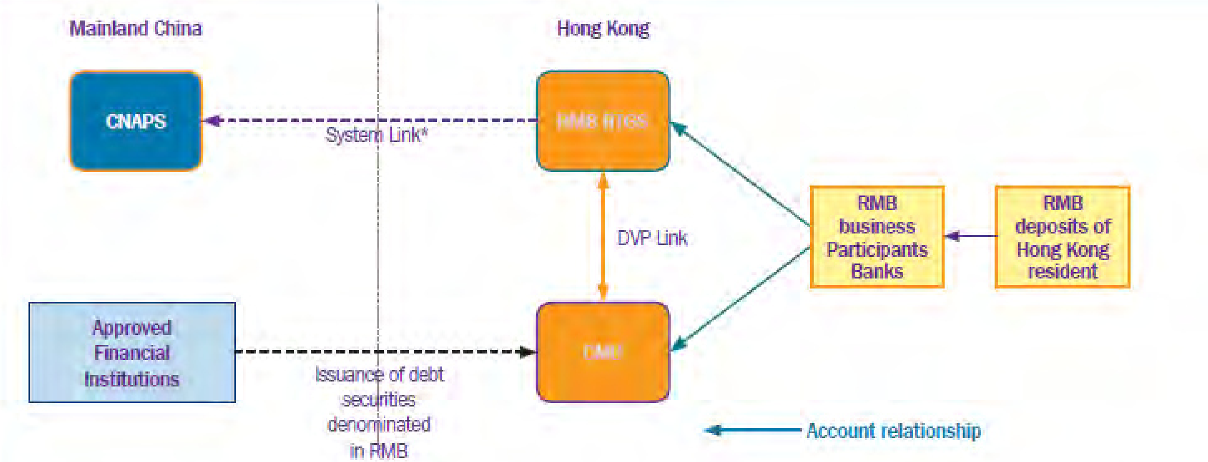
The cross-border and cross currency trade is processed as illustrated in **Figure HK03**.

The cross-border, cross-currency DVP Model (denominated in US dollars) is illustrated in **Figure HK04**.

Cash Settlement

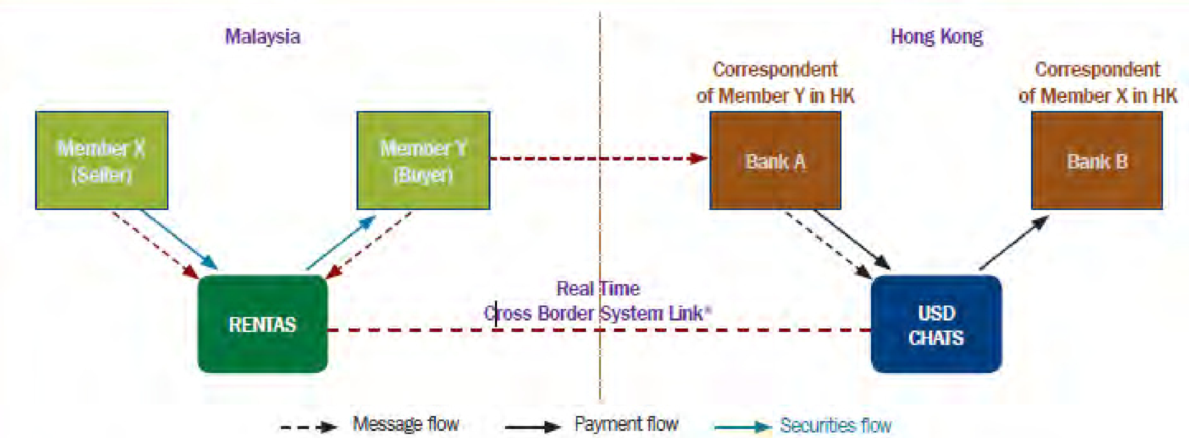
Cash settlement of bond transactions is carried out in CHATS. CHATS is a computer-based system established in Hong Kong, China for the electronic processing and settlement of interbank fund transfers. CHATS operates in a RTGS mode between banks in Hong Kong, China and is designed for large-value interbank payments. Banks using CHATS are connected to the clearing house computer operated by HKICL. As mentioned in the discussion on bond settlement above, for real-time DVP transactions, after CMU puts the required securities involved in a bond transaction in the sell side's account on hold, an interbank payment message is generated in CHATS. When the payment initiated by the buy

Figure HK03: Cross-Border Delivery-versus-Payment Model for Renminbi-Denominated Debt Securities issued in Hong Kong, China



* The System Link between CNAPS in Mainland and RMB RTGS in Hong Kong, China is established through the Clearing Bank, Bank of China, Hong Kong (BoC, HK).
BoC = Bank of China; CMU = Central Moneymarkets Unit; CNAPS = China National Automatic Payment System (CNAPS); DVP = delivery versus payment; RMB = renminbi; RTGS = real-time gross settlement
Source: Hong Kong Monetary Authority.

Figure HK04: Cross-Border Delivery-versus-Payment Model



* The RENTAS in Malaysia and USD RTGS system in Hong Kong, China are linked enabling real time DVP settlement mode for US dollar denominated securities in Malaysia.
DVP = delivery versus payment; HK = Hong Kong, China; RENTAS = Real-time Electronic Transfer of Funds and Securities; RTGS = real-time gross settlement; USD = US dollar
Source: Hong Kong Monetary Authority.

side is settled across the books of HKMA (or the relevant settlement institutions in cases other than Hong Kong dollars), a confirmed message is returned to CMU and the held securities is released to the buy side. If the buy side does not have sufficient funds in its cash accounts, the transaction is pending for settlement until sufficient funds are available. In the event that the transaction cannot be settled before the cut-off time, the transaction is converted to an end-of-day transaction and settled during the end-of-day settlement run.

At the time of the end-of-day settlement run, the system calculates the net settlement amount of both securities and cash for each member. If sufficient funds and securities are available for each member, the final transfers of cash within CHATS and for the securities are executed simultaneously. Otherwise, all or part of the transfer instructions of members who do not have sufficient funds or securities are cancelled before final end-of-day settlement takes place.

To allow better liquidity management for banks via collateral management services, intraday repos and overnight repos are available for CHATS while intraday overdraft is available for US dollar and euro RTGS systems.[3]

Overview of Corporate Bond Market

Trading

OTC Trading
Corporate bond trading takes place mostly through OTC markets.

Exchange Trading
There are few listed corporate bonds in the Hong Kong, China bond market.

[3] Intraday and overnight repos for a renminbi RTGS system were introduced on 21 February 2011.

CCP

There is no CCP for the bond market in Hong Kong, China.

Bond Settlement

Most corporate bonds are eligible for clearing at CMU and maintained in book-entry form. In cases of corporate bond transactions, payment initiated by the buy side is settled across the books of settlement institutions.

The methods used are similar to those used for government bonds.

Cash Settlement

CHATS performs cash settlement of corporate bonds in the same manner as with government bonds.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

Each issue of bonds bears a fixed rate of interest that is announced in advance of each tender. Interest rounded to the nearest cent and calculated on the actual number of days in an interest period (being a period from, and including, an interest payment date to, but excluding, the next interest payment date) and on the basis of a 365-day year, is paid semi-annually.

HKMA as the paying agent (PA), pays interest proceeds to account management institutions (CMU members) via CHATS.

Interest Payment and Redemption of Corporate Bonds

The issuing corporation promises to return the principal on a specified maturity date to the bondholders. Until that time, the issuing corporate pays the bondholders a stated rate of interest periodically. Interest payments are usually distributed quarterly or semi-annually. PAs credit interest payments directly to members' bank accounts via CHATS on pay date. For HKD-denominated instruments, interest is calculated on the basis of 365 days.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trade

(i) **Pre-Settlement Matching**
There is no automated pre-settlement matching system in the Hong Kong, China OTC market.

(ii) **Bond Settlement**
There is no system interface in order to receive settlement instruction from another system. Therefore, settlement instruction data are not transferred from other systems, such as a trading system, with respect to straight-through-processing (STP).

Both the sell side and buy side send instructions to CMU via eCMT, SWIFT, Fax, AFT, or by hand for matching. Participants need to send the message instructions before the cut-off time on settlement day. After CMU performs validation and matching, CMU sends matching result to the both sides, and holds the bond. CMU adopts a central matching system.

(iii) **Cash Settlement**
CMU sends settlement data to CHATS, which executes cash settlement by auto-debit from the buy side's RTGS account and sends a cash settlement report to CMU for bond settlement execution. Then, CHATS sends a cash settlement report to the buy side and sell side, while CMU sends securities settlement confirmation to both sides.

For further details, please refer to **Part 3 HK03 (Government Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Corporate Bonds for Domestic Trades

The corporate bond transaction flow is similar to the government bond transaction flow in Hong Kong, China.

For further details, please refer to **Part 3 HK04 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

Although there are some barriers to cross-border bond transactions in ASEAN+3 economies,especially with respect to foreign exchange (FX) and cash controls, cross-border DVP settlement is effected via regional and international CSDs, and few barriers exist in Hong Kong, China. Hong Kong dollars are freely convertible. Foreign investors are not subject to (i) any restrictions on FX trades with an underlying investment, (ii) pre-funding, or (iii) FX reporting. Offshore FX Trading, third-party FX trading, and repatriation are permitted for foreign investors in Hong Kong, China.

For further details, please refer to **Part 3 HK05 (Bond Transaction Flow for Foreign Investors in the OTC Market—DVP)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payments and redemption of government bonds in Hong Kong, China is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
HKMA, as a PA, has a responsibility for interest payment and redemption on behalf of the issuer. HKMA sends interest payment and redemption notification to the Treasury Department 3 days before the payment date. HKMA transfers cash for the payment from

the Treasury Department's account to its own account after receiving payment instruction from the Treasury Department, and pays the interest and principal proceeds to account management institutions (CMU members) via CHATS on the interest payment and redemption date.

(ii) **CSD**
HKMA, the central bank of Hong Kong, China, also has a CSD function with its system called CMU. CMU, as a CSD, has an own cash account in CHATS for the purpose of interest payment and redemption. In Hong Kong, China, there is no withholding tax for government bonds and the CSD does not need to arrange a tax holder list.

CMU sends notification of interest payment and redemption details to account management institutions (CMU members) 1 day before the redemption payment date. Upon completion of payment, CMU sends settlement reports to account management institutions (CMU members). HKMA, as a CSD, conducts bond redemption.

(iii) **Payment Flow**
A central bank cash settlement system is used in for interest payment and redemption of government bonds.

(iv) **Tax**
There is no withholding tax for government bonds in Hong Kong, China.

For further details, please refer to **Part 3 HK06 (Interest Payment Flow of Government Bond OTC Market)** and **Part 3 HK07 (Redemption Payment Flow of Government Bond OTC Market)**.

Interest Payment and Redemption of Corporate Bonds

The business flow of interest payment and redemption of corporate bonds is analyzed using typical flow. Key findings of the analysis are shown below.

(i) **PA**
A commercial bank is appointed as a PA by an issuer. The PA notifies the bond issuer of interest payment and redemption. The PA transfers cash from an issuer account to its own account and pays the interest and principal to the account management institutions (CMU members) via CHATS on the interest payment and redemption date after receiving it from the bond issuer.

(ii) **CSD**
HKMA as CSD sends an account positions report to the PA and notification of interest and principal payment details to the account management institutions (CMU members) 1 day before the interest payment date. Though HKMA has an own cash account in the RTGS system, the PA does not use it for interest payment and redemption. HKMA as CSD carries out redemption. In Hong Kong, China, there is no withholding tax for corporate bonds and the CSD does not need to arrange a tax holder list.

(iii) **Payment Flow**
Central bank cash settlement system is used for interest payment and redemption of corporate bonds.

(iv) **Tax**
There is no withholding tax for corporate bonds in Hong Kong, China.

For further details, please refer to **Part 3 HK08 (Interest Payment Flow of Corporate Bond)** and **Part 3 HK09 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

CMU adopts ISO15022 for its book-entry system and its network with participants.

Message Items

Typical message items are settlement instruction and settlement confirmation. Securities Market Practice Group (SMPG) defined 10 common elements of these two message types. Typical message items are compared with those of ISO20022, (sese.023, and sese.025).

In both government and corporate bond settlement systems, 10 common elements of CMU are almost all the same as ISO20022.

Market Practices

Operating Hours

The CSD in Hong Kong, China, CMU, opens at 8:30 and the cut-off time is 16:00. The closing time of CMU for Hong Kong dollars, US dollars, and euros, is 18:30. The cut-off time for renminbi was extended from 18:30 to 23:30 effective 25 June 2012.

Settlement Cycle

CMU performs clearing and settlement for a variety of debt securities. The settlement cycle of each type of debt security generally follows the standard cycle practice of that specific type of security, and differs among different types of debt securities. For example, the settlement cycles for exchange fund paper traded before and after 11:00 in Hong Kong, China are T+0 and T+1, respectively. The settlement cycle for Hong Kong, China government bonds is usually T+1 or T+2, while for corporate bonds and renminbi bonds it is typically T+2.

Fails

A fail settlement means a situation whereby a transaction cannot be settled on the agreed settlement date. There are no standardized rules to resolve failed trades. The common practice is to settle failed trades on the next business day with the parties involved discussing and agreeing on the interest compensation. The cost of fails is subject to the agreement between the parties involved.

Bilateral Netting

There is no bilateral netting scheme in Hong Kong, China. There is no CCP for the OTC bond market. In this context, clearing effectively refers to a netting service for participants. For end-of-day transactions, securities and cash are settled on a multilateral netting basis provided by CMU. Matching in this business process is limited to settlement matching since trading is not facilitated by CMU itself. Trade matching continues to be conducted between trading counterparties on a bilateral basis.

Taxation

Residents and non-residents investing in the Hong Kong, China market are not charged a withholding tax on fixed income. Interest income derived from bond holding is not taxable.

Numbering and Coding

Numbering and Coding for OTC and Exchange Markets

Securities Numbering

The International Securities Identification Number (ISIN) is used for all securities numbering of bond transactions. CMU system also supports CMU Issue Number (local code) and common code.

Financial Institution Identification

A CMU Member Account Number is assigned by a CMU internal coding scheme. There is no need to convert between ISO9362 (BIC) and local codes because the system database can include both BIC and local codes.

Securities Account

The account type is an omnibus and multi-layer structure. CSD participants manage bonds separately from their own bonds and customers' bond separately. ISO20022 is not used for securities accounts. It is identified by a proprietary coding scheme.

Cash Account
The International Bank Account Number (IBAN) code is not used for cash accounts. It is identified by CMU member code (proprietary).

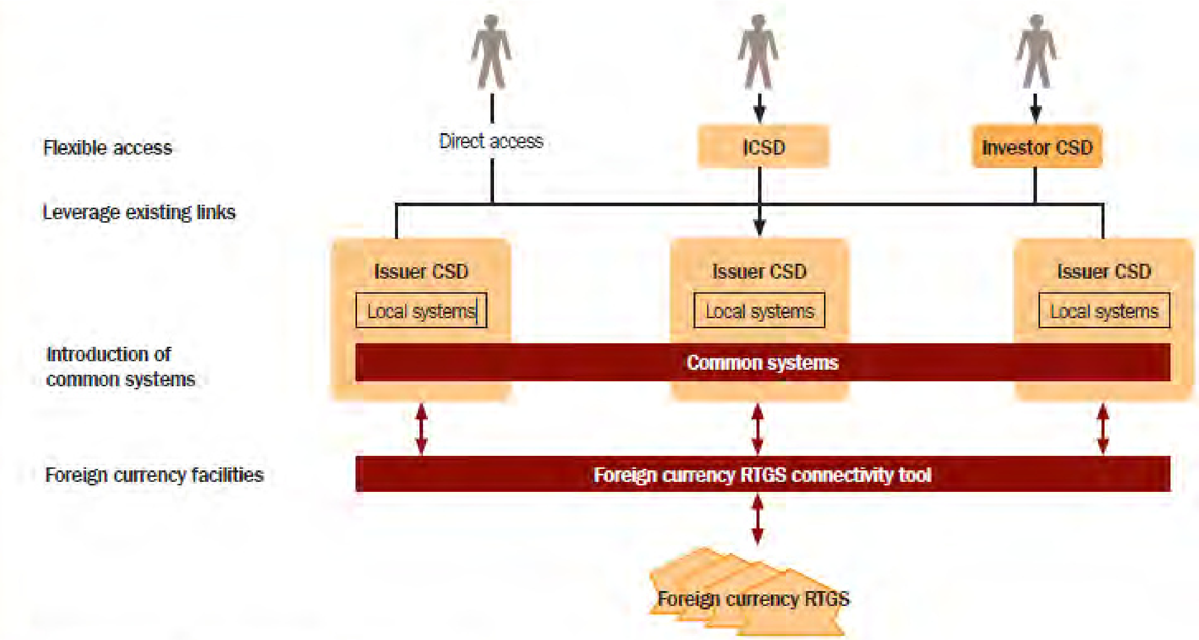
Character Code and Language
A character set supported by SWIFT is used for coding and language.

Medium- to Long-Term Strategies

The conceptual framework of the Common Platform Model is presented in **Figure HK05**.

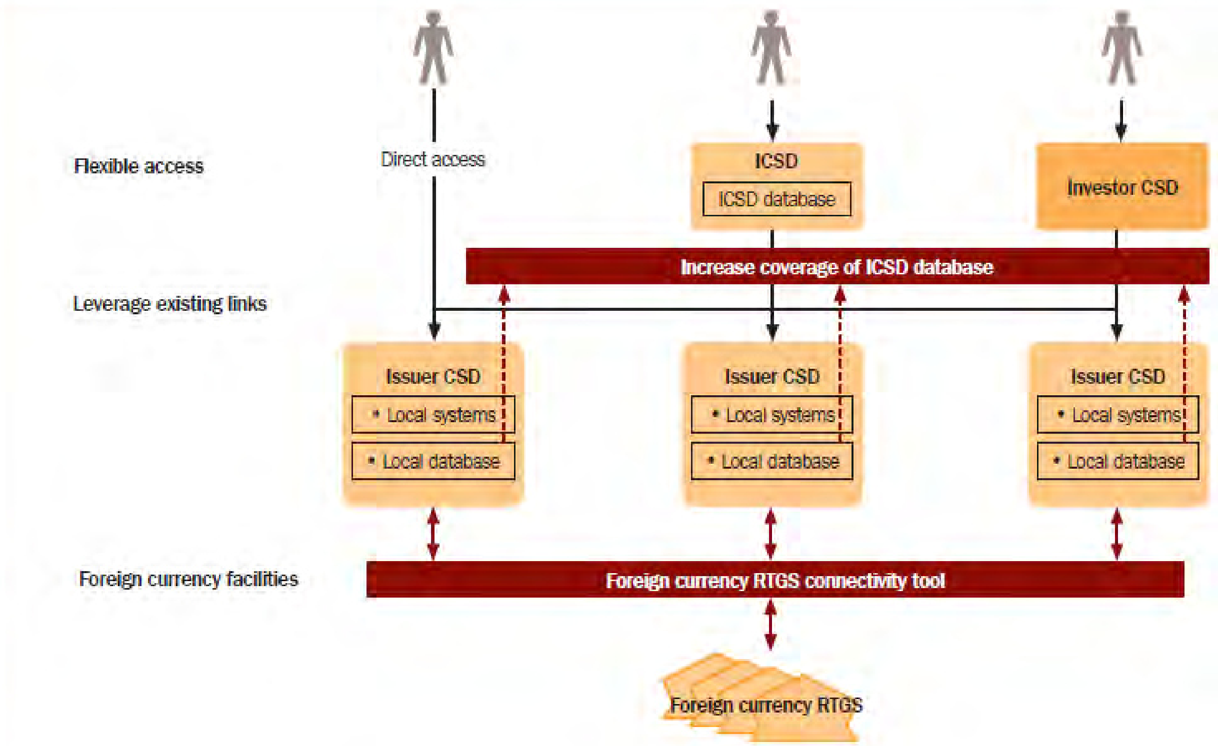
The concept of the pilot platform is illustrated in **Figures HK06, HK07**.

Figure HK05: Conceptual Framework of Common Platform Model



- New functions provided by the Common Platform.
CSD = central securities depository; ICSD = international central securities depository; RTGS = real-time gross settlement
Source: Hong Kong Monetary Authority.

Figure HK06: Conceptual Framework of Pilot Platform



- New functions provided by the Pilot Platform.

CSD = central securities depository; ICSD = international central securities depository; RTGS = real-time gross settlement

Source: Hong Kong Monetary Authority.

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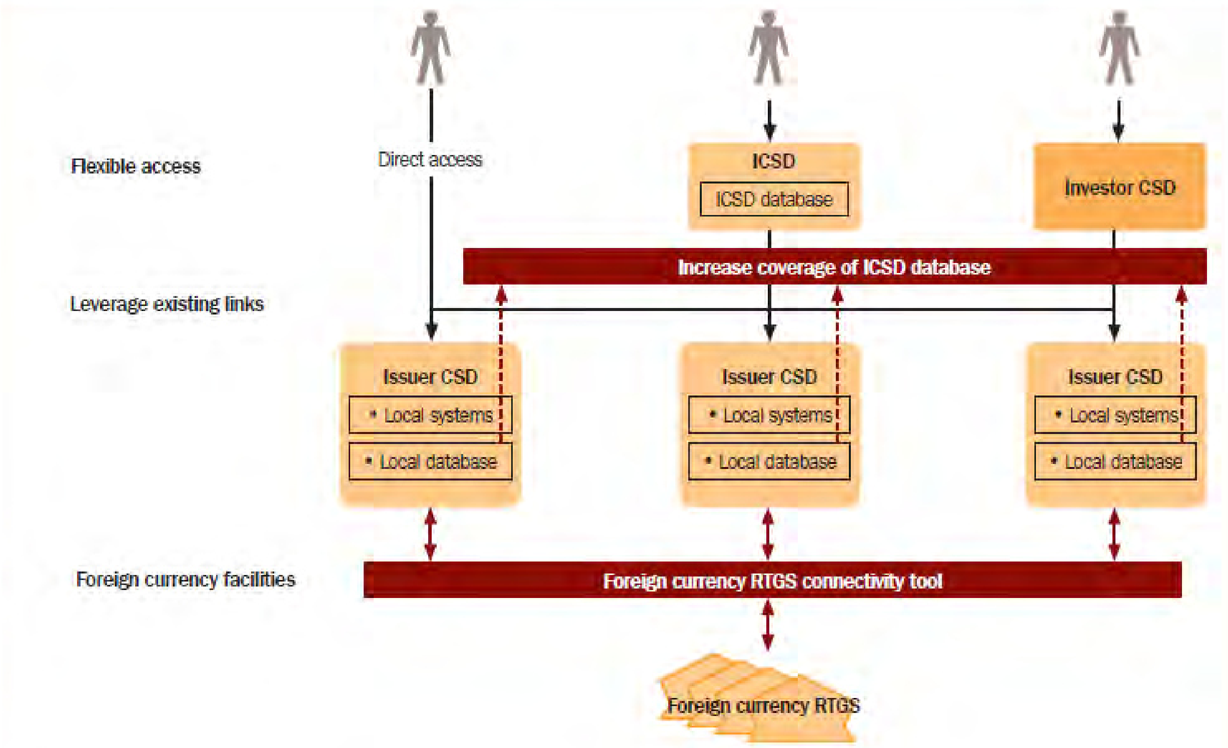
Note: Some parts of this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Figure HK07: Evolution of Pilot Platform - Corporate Action Platform



- New functions provided by the Pilot Platform.

CSD = central securities depository; ICSD = international central securities depository; RTGS = real-time gross settlement

Source: Hong Kong Monetary Authority.

Indonesia (ID)

Bond Market Infrastructure

Overview of Bond Market

The Indonesian bond market comprises the over-the-counter (OTC) and exchange markets. Government bonds and corporate bonds are all listed on the exchange but traded mainly in the OTC market. A few bonds are traded on the exchange and they must be reported to the exchange through the Centralized Trading Platform (CTP) within 30 minutes after a trade is executed.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the amount of local currency (LCY) government bonds outstanding in Indonesia at the end of 1Q13 was US$98.45 billion, while LCY corporate bonds totaled US$20.18 billion.

There are two central depositories: Bank Indonesia (BI) handles government bonds and the Indonesian Central Securities Depository (KSEI) handles corporate bonds. KSEI also provides depository and transaction settlement services for government bonds as a sub-registry for BI. Settlement of the government bonds is performed on Bank Indonesia-Scripless Securities Settlement System (BI-SSSS). Cash settlement of government bonds is conducted on Bank Indonesia Real-Time Gross Settlement (BI-RTGS). BI-SSSS and BI-RTGS are electronically linked. All corporate bonds and some government bonds are settled by KSEI (especially those traded by securities companies) using the Central Depository and Book Entry Settlement (C-BEST) system, with cash settlement conducted via the five appointed payment banks.

Please refer to **Part 3 ID01 (Government Bond Market Infrastructure Diagram)** and **Part 3 ID02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
The Government of Indonesia's MOF is the apex body responsible for the administration of central government finances and all economic and financial matters affecting the country. MOF has authorization to issue government bonds. MOF also formulates and implements policies and technical standardization in the field of debt management.

Otoritas Jasa Keuangan (OJK)
OJK is an independent institution with authority to regulate, supervise, examine, and investigate the financial services sector in Indonesia. OJK is an autonomous agency designed to be free from

interference. Its functions, duties, and powers include regulations, supervision, inspections, and investigations. The agency was established in 2012, fully replacing the roles of the Capital Market and Financial Institution Supervisory Agency, also known as Badan Pengawas Pasar Modal dan Lembaga Keuangan (Bapepam-LK), and partially replacing the role of BI in banking supervision.

Bank Indonesia (BI)
BI is the central bank of the Republic of Indonesia. BI acts as the central depository for the settlement and safekeeping of government bonds. Its role as the central registry of government bonds includes that of a registrar, settlement agent, and paying agent (PA) for interests and principal.

Indonesia Stock Exchange (IDX)
IDX is the only stock exchange in Indonesia. IDX is a privately owned, limited company whose shareholders are local broking firms. It came into existence through BAPEPAM-LK's Capital Market Master Plan 2005–09, which stipulated the merger of the Jakarta Stock Exchange (JSX) and Surabaya Stock Exchange (SSX). All government bonds and corporate bonds are automatically listed on IDX.

PT Kustodian Sentral Efek Indonesia (KSEI)
KSEI was granted a permanent operational license as a depository and settlement institution by the BAPEPAM-LK on 11 November 1998. KSEI's shareholders consist of IDX, KPEI, custodian banks, securities companies, and registrars. KSEI started the settlement operations in scripless form beginning July 2000. Participants in KSEI are custodian banks, securities companies, and other parties approved by Bapepam-LK. KSEI is a central depository for corporate bonds and sub-registry of BI for government bonds in BI-SSSS.

The Indonesian Clearing and Guarantee Corporation (KPEI)
KPEI, Indonesia's central counterparty (CCP), was established in 1996 as a limited company to provide clearing and settlement, guarantee services for stock exchange transactions (equity, bonds and derivatives), and provide securities lending and borrowing.

Indonesia Bond Price Agency (IBPA)
IBPA conducts valuation and determines fair market prices of bonds. *Sukuk* and types debt securities, as well as provides debt market information

Overview of Government Bond

Trading

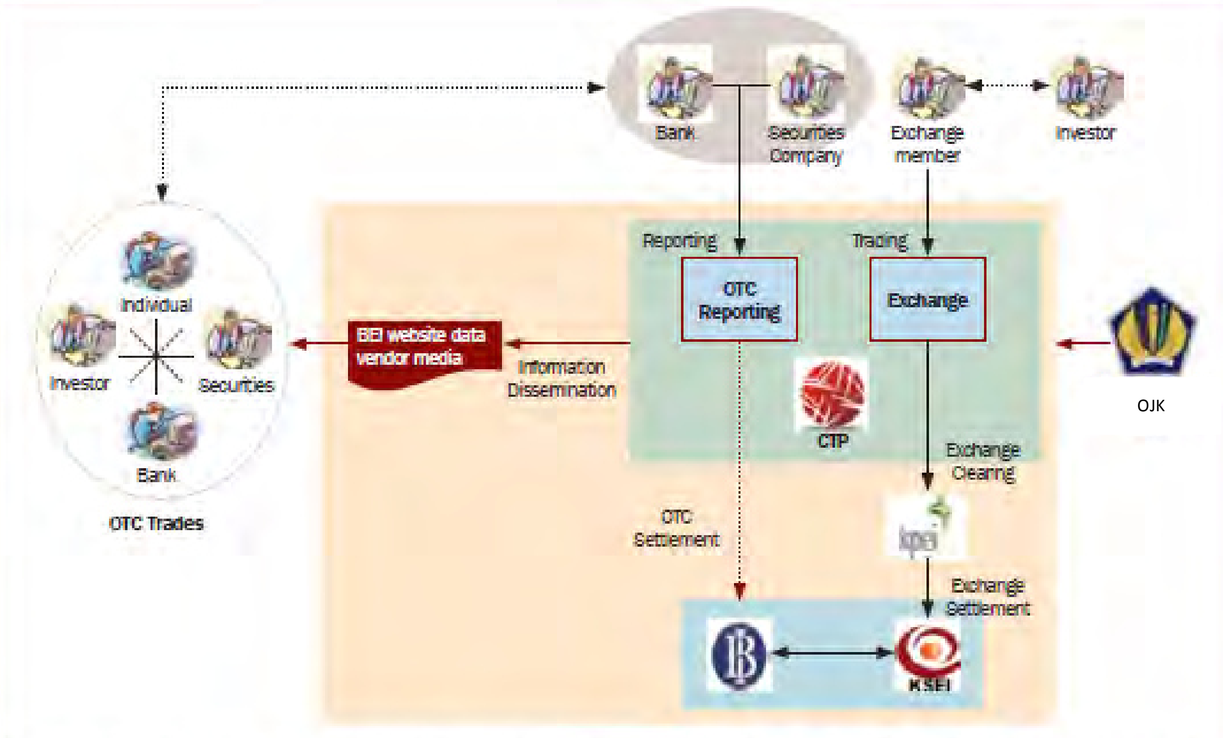
OTC Trading
There is no formal OTC market in the Indonesian bond market; however, all government bonds can be traded off-exchange directly between counterparties. Although all government bonds and corporate bonds are automatically listed on IDX, most trading is done OTC. These trades must be reported to the exchange through CTP within 30 minutes after a trade is executed. Price discoveries are made through theoretical prices by IBPA, bond price quotation by primary dealers, and active money brokers. The OTC market occupies a dominant position (100%) in bond trading). CTP is an electronic system established to facilitate the reporting of bond transactions. This system was introduced in September 2006 following the appointment of SSX as the Bond Transaction Reporting Center. Users of CTP are securities companies and banks, which are obliged to report all corporate and government bond transactions, as well as the transactions of their clients. Further development of CTP was conducted by IDX after the merger.

Exchange Trading
In June 2005, IDX introduced the Fixed Income Trading System (FITS) to facilitate the trading of bonds in the exchange. The clearing of bond trades in the exchange are handled through the Electronic Bond Clearing System (e-BOCS), including allocations.

IDX provides exchange trade and OTC reporting as illustrated in **Figure ID01** and described in detail below.

(i) **Bonds Exchange Trading System**. Investor can order and trade bonds in this system via exchange member (currently only securities companies), though there was no

Figure ID01: Secondary Market Flow



Bapepam-LK = Badan Pengawas Pasar Modal dan Lembaga Keuangan; BEI = Bursa Efek Indonesia; CTP = Centralized Trading Platform; DJPU/DMO = Debt Management Office; OTC = Over-the-Counter; KPEI = Indonesian Central Counterparty; KSEI = Indonesian Central Securities Depository

Source: IDX.

transactions in the Bonds Exchange Trading System in 2011.

(ii) **Bonds Transaction Reporting System**. IDX was appointed in 2006 by Bapepam-LK (currently OJK) and Indonesia SEC, as the bonds transaction reporting beneficiary. Market participants report their OTC transactions to this system via banks and securities companies. They have an obligation to report these transactions to OJK through the Bonds Transaction Reporting System within 30 minutes. Both systems can be used for both government and corporate bonds.

CCP

CCP for the OTC Market

There is no clearing function in the OTC market.

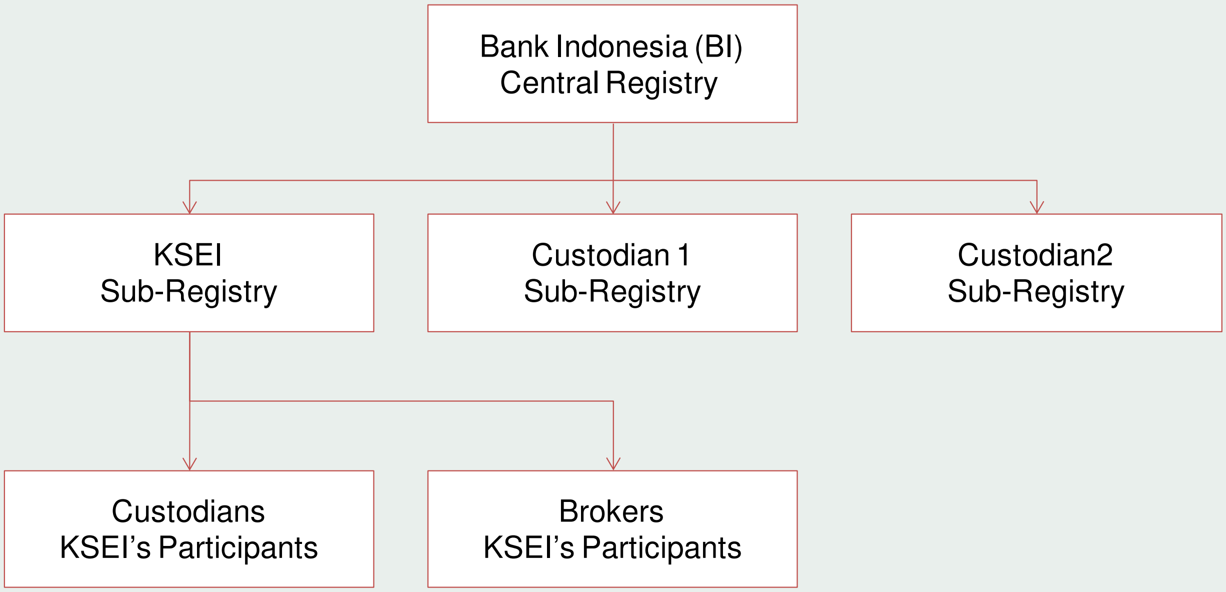
CCP for the Exchange Market

KPEI acts as central counterparty for the exchange market. KPEI has operated e-BOCS since 2006, which is the system used to settle all bond transactions executed on IDX. This clearing mechanism shortens the settlement of bonds obligations and also increases the efficiency of settlement.

Bond Settlement

BI functions by law as the central registry to handle government bonds, while KSEI and other custodians are sub-registries under BI. Currently, BI maintains only one omnibus account for each sub-registry. Brokers and some custodians, which are not sub-registries of BI, settle and deposit their government bonds to KSEI as the central depository. The registry system of the Indonesian government bonds is presented in **Figure ID02**.

Figure ID02: Registry System of Indonesian government Bond



Source: PT Kustodian Sentral Efek Indonesia.

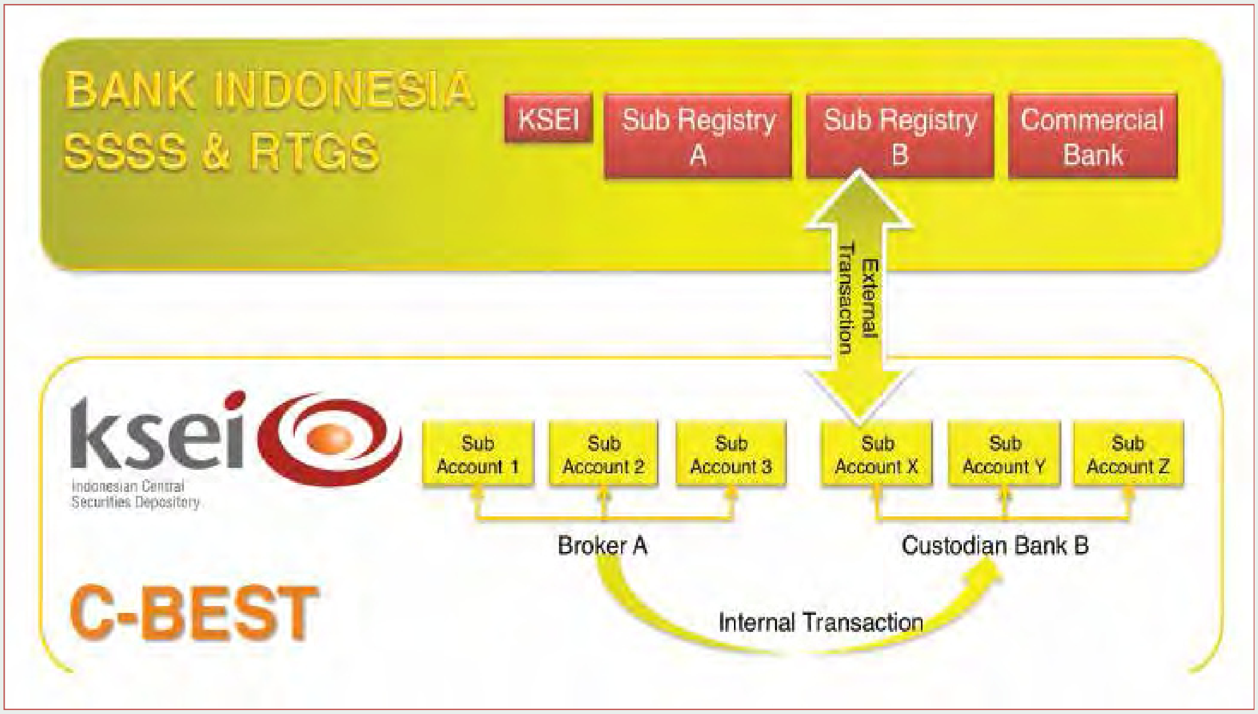
Settlement of government bonds is done through BI-SSSS, which was first implemented in February 2004. Under BI-SSSS, settlement of government bonds can only be performed on a delivery-versus-payment (DVP) basis. This means that government bonds are not allowed to be settled on a free-of-payment (FOP) basis, unless it involves a transfer for the same beneficial owner, a grant, a settlement of court, or lending and borrowing. BI-SSSS adopts DVP Model 1 of the Bank for International Settlements (BIS) definition. BI-SSSS's network is a proprietary network. The types of lines are leased line and dial-up. Its protocol is Systems Network Architecture (SNA), while its interfaces are proprietary (file transfer protocol [FTP]) and socket. The message format is proprietary.

C-BEST enables the settlement of government bonds for all market players who have a security account with KSEI but are not sub-registries of BI-SSSS. There is no difference in the procedure for trading government bonds whether on the exchange market or the OTC market. KSEI participants have access only to C-BEST, but C-BEST is directly connected to BI-SSSS and automatically delivers or receives messages and instructions concerning settlement processes in BI-SSSS automatically delivers or receives messages concerning settlement processes in BI-SSSS; therefore, participants of KSEI can monitor transaction status, balance position, and obtain reports with C-BEST. Transaction status in C-BEST is available for viewing and may be downloaded every 15 minutes. C-BEST adopts DVP Model 2 of the BIS definition. Government bonds settlement between BI-SSSS and C-BEST is illustrated in **Figure ID03**.

Cash Settlement

Participants in BI-SSSS utilize central bank money for bond settlement. BI-SSSS and BI-RTGS owned by BI are directly connected to execute DVP settlement. Overdraft is not permitted for foreigners.

Figure ID03: Government Bond Settlement between BI-SSSS and C-BEST



Source: PT Kustodian Sentral Efek Indonesia.

Overview of Corporate Bond

Trading

OTC Trading
Corporate bonds are mostly traded in the OTC market.

Exchange Trading
The exchange market for corporate bonds is also a component of IDX as is the case with government bonds. After trade matching, corporate bonds listed on IDX are cleared by KPEI using e-BOCS.

CCP

CCP for the OTC Market
There is no clearing function in the OTC market.

CCP for the Exchange Market
KPEI is the CCP for all bonds traded on the exchange market, including corporate bonds.

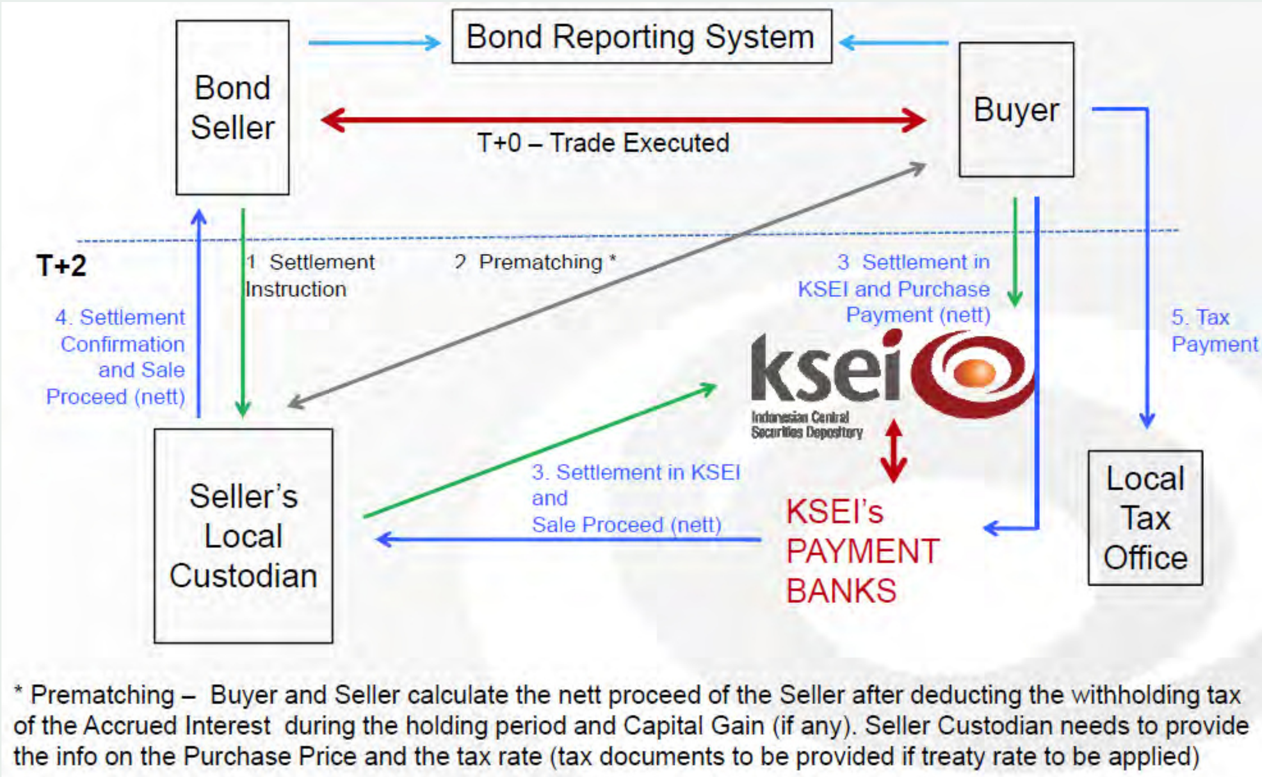
Bond Settlement

The settlement of corporate bonds is performed on KSEI's C-BEST. C-BEST is conducted in real time throughout the specified operation time, provided that the instructions are matched with the counterparty, and both parties have sufficient securities and cash to settle the trades. At present, C-BEST does not have the capability to link trades, which has an impact on turnaround transactions. Nevertheless, the settlement of linked trades is still possible on a manual basis **(Figure ID04)**.

Cash Settlement

Participants in KSEI, on the other hand, utilize commercial bank money. KSEI has appointed five cash settlement banks: PT Bank Mandiri Tbk (BMRI), PT Bank CIMB Niaga Tbk. (BNGA), PT Bank Central Asia Tbk. (BBCA), PT Bank Permata Tbk. (PRMT), and PT Bank Negara Indonesia (BNI). Overdraft is not permitted for foreigners,

Figure ID04: DVP Bond Settlement



Source: PT Kustodian Sentral Efek Indonesia.

but an intraday facility is allowed provided the intraday is supported with proof of incoming funds or delivery settlement instruction. Custodians provide an intraday facility to their selected clients for settlement purposes.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

For fixed income instruments, the interest payment and redemption dates are normally predetermined as there are fixed cycles (monthly, quarterly, and bi-annually).

For interest entitlements on bonds, the registered holder at record date is entitled to the coupon interest. Interest payments on government bonds are distributed by the government to sub-registries via the central bank on gross basis. Sub-registries credit client cash accounts on a net basis after deducting the respective withholding tax on the coupon interest.

Redemption is automatic and mandatory. Custodians do not require the client's instructions in order to execute bond redemptions.

Custodians advise clients of upcoming interest and redemption payments. Interest payments are made to beneficial owners once the funds are received in the custodians' own accounts, which is usually on the pay date. There is no difference between the pay date and the coupon date except when the coupon date falls over the weekend or on a holiday, and then the pay date is the next business day.

Payments occur online and so payments can be made on the due date at any time between 7:30 and 17:00. Once funds are credited to the client's cash account, a message is sent confirming the credit of interest and redemption proceeds.

Interest Payment and Redemption of Corporate Bonds

Interest payments on corporate bonds are received by the custodians on a net basis, while government bonds are on gross basis.

KSEI acts as paying agent for corporate bonds distributing interest and redemption payments to bondholders through C-BEST.

KSEI receives interest or redemption payments from an issuer on a gross amount basis. KSEI withholds the tax and credits the interest or redemption amount on a net amount basis. KSEI pays the tax to the tax office on behalf of the issuer.

KSEI changed the recording date schedule for corporate bond interest payments from the current practice of 7 exchange days to 4 exchange days prior to the payment date, effective 1 April 2009. This change of the recording date schedule is applicable only for corporate-bond-related interest payments **(Figures ID05, ID06)**.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow of government bond transactions in Indonesia resembles a typical one. The distinctive feature is the mandatory process of trade reporting. After the trade and pre-settlement matching, both sides of the trade must input trade data into IDX to get the reference code within 30 minutes from the time of trading.

(i) **Pre-Settlement Matching**
Instructions must be pre-matched prior to settlement in the market. KSEI provides auto pre-matching functionality. However, its use is not enforced in the market. The auto pre-matching function can only be used if the counterparty also uses the same function. Otherwise, the pre-matching is done by phone. Since the pre-matching is only about instruction details, it does not guarantee the settlement.

(ii) **Bond Settlement**
Government bonds are settled in BI's book-entry system called BI-SSSS. Both sides of the trade enter settlement instructions into BI-SSSS. BI matches both instructions and returns the matching result to both sides, while earmarking bonds. Then, BI-SSSS sends the payment message to BI-RTGS internally.

(iii) **Cash Settlement**
After the receipt of payment message from BI-SSSS, BI-RTGS transfers cash from the buy side's account to the sell side's account.

For further details, please refer to **Part 3 ID03 (Government Bond Transaction Flow for Domestic Trades)**.

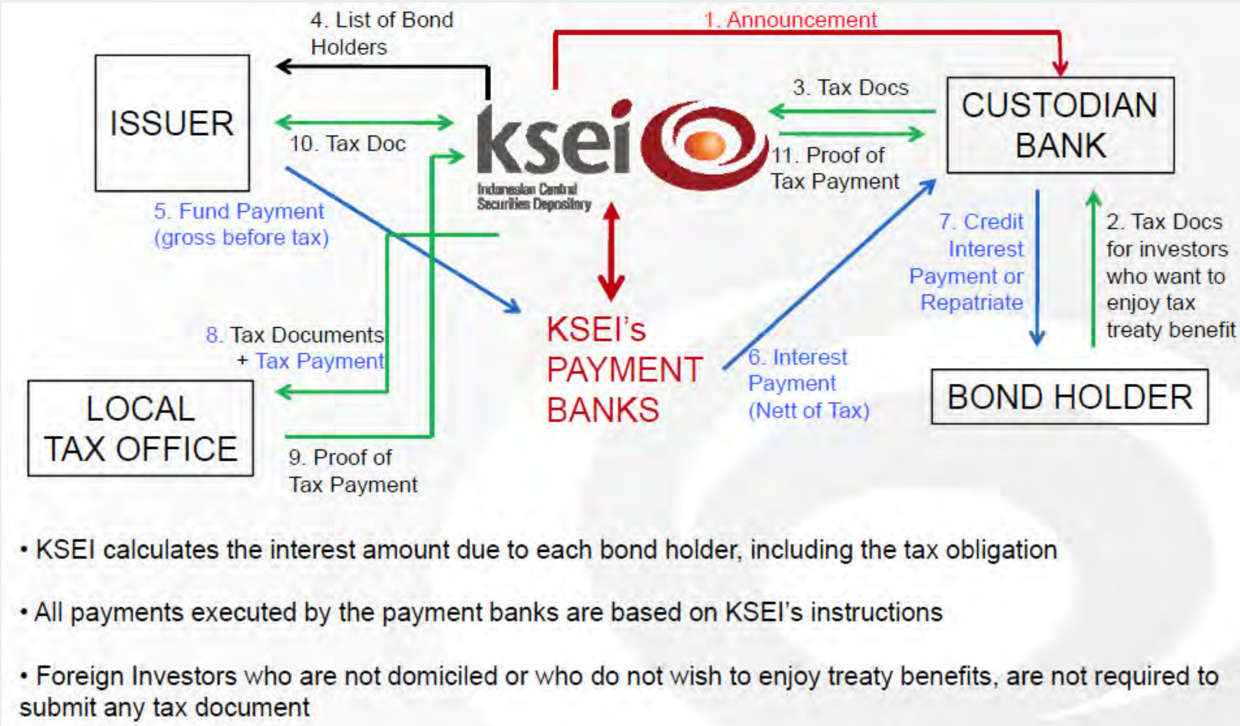
DVP Flow of Corporate Bonds in the OTC Market

The business flow of corporate bond transactions in Indonesia is different from a typical one in terms of cash settlement.

(i) **Pre-Settlement Matching**
Pre-settlement matching in the corporate bond market is almost the same as in the government bond market.

(ii) **Bond Settlement**
Corporate bonds are settled in KSEI's book-entry system called C-BEST. Both sides of the trade enter settlement instructions into C-BEST. KSEI matches both instructions and returns the matching result to both sides. KSEI checks the balance of the buy side account. When KSEI confirms that the buy side has enough money for the transaction, KSEI performs bond settlement and sends settlement statements to both the sell side and buy side.

Figure ID05: Corporate Bond - Interest Payment



Source: PT Kustodian Sentral Efek Indonesia.

(iii) **Cash Settlement**

The cash settlement of corporate bond transactions has two-phase process.

Step1: KSEI performs virtual cash settlement with the positions recorded at KSEI.

Step2: In order to complete cash settlement, the sell side sends the cash transfer instruction to the payment bank via KSEI. Then, the payment bank carries out real cash settlement.

For the sake of this settlement process, KSEI's participants must open an account at the designated payment banks, and KSEI communicates with its payment banks to keep the real cash positions at payment banks and the positions recorded at KSEI in sync.

For further details, please refer to **Part 3 ID04 (Corporate Bond Transaction Flow for Domestic OTC Trades)**.

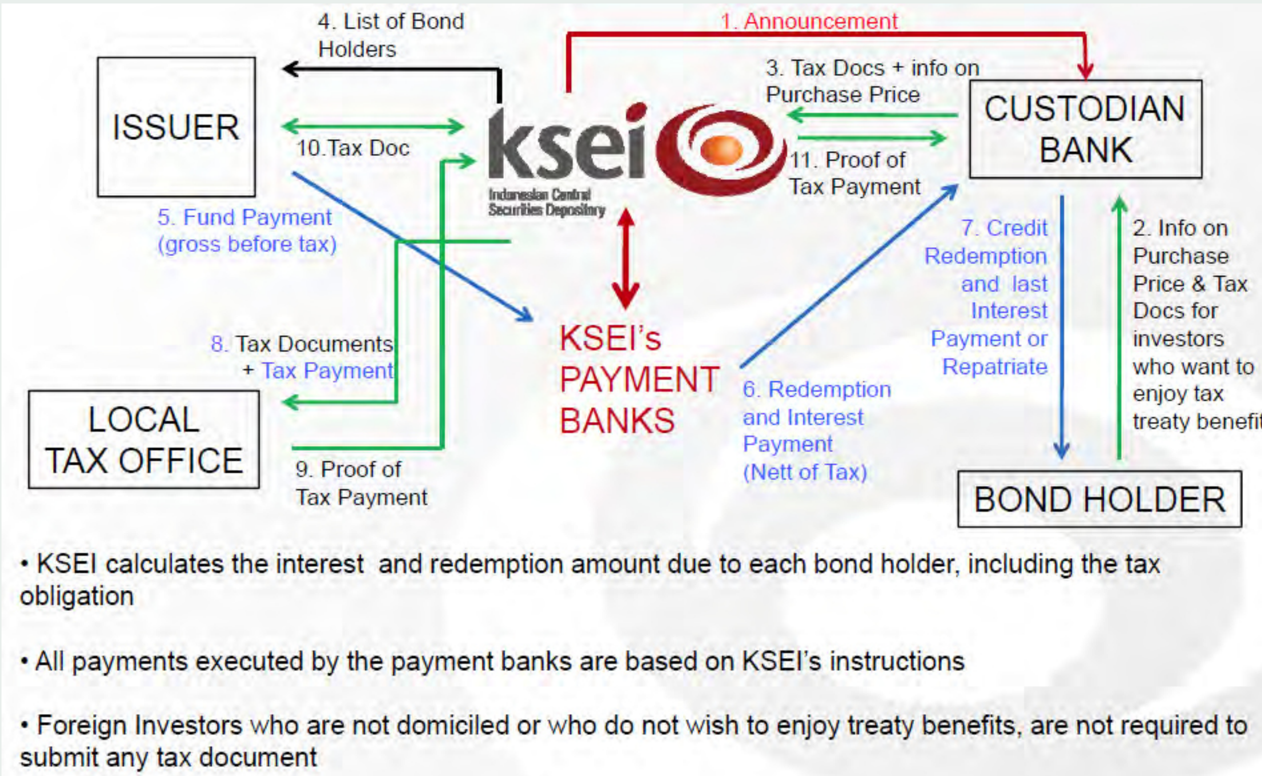
DVP Flow of Cross-Border Bond Transactions

Foreign investors require no local regulatory approval to invest in the Indonesian debt market, and there are currently no limitations on foreign ownership.

All foreign exchange (FX) forward value transactions must match with the underlying securities transactions. Cash accounts of foreign investors are not allowed to be overdrawn and Indonesian rupiah cannot be repatriated offshore. Regarding pre-funding and third-party FX, foreign investors are not subject to any restrictions.

Regulations require documentation of an underlying transaction to support the credit of Indonesian rupiah into investor accounts. Documentation can be in the form of buy/ RVP settlement instructions through SWIFT, tested telex, tested fax, or Reuters Monitor

Figure ID06: Corporate Bond - Redemption Payment



Source: PT Kustodian Sentral Efek Indonesia.

Dealing System (RMDS). The purchase of foreign currency against Indonesian rupiah of more than US$100,000 (or the equivalent) per month and per legal entity, across all banks in Indonesia, must be supported by underlying documents and a yearly statement confirming the non-speculative nature of the transactions.

For further details, please refer to **Part 3 ID05 (Bond Transaction DVP Flow for Foreign Investors in the OTC Market).**

Interest Payment and Redemption of Government Bonds

The interest payment and redemption flow of government bonds in Indonesia is similar to the typical one.

(i) **PA**
BI is appointed as the PA for government bonds. BI sends payment information to the issuer, MOF. BI also receives the payment instruction from MOF, calculates the amount of interest, and pays interests and principal on behalf of MOF.

(ii) **CSD**
BI also functions as the CSD for government bonds with its system called BI-SSSS. BI as CSD and PA, as well as being the central bank of Indonesia, has its own cash account in its RTGS.

(iii) **Payment Flow**
Interest and principal are transferred from MOF's account into a BI participant's account via BI-RTGS. Then, a participant credits them to a bond holder's account.

(iv) **Tax**
Indonesia imposes capital gains tax and income tax. The tax on interest is deducted at the source by the withholding agent. Regarding government bonds, the buying broker or custodian is the tax withholding agent. For all foreign investors who are

domiciled in countries that have tax treaty agreements with Indonesia, the tax treaty rate is applied subject to the client's eligibility and the completion of Director General of Taxation forms (DGT-1 or DGT-2).

(v) **Other Issues**
BI as a PA does not notify CSD participants of an interest payment in advance. For interest payment and redemption of government bonds, the sub-registry submits the tax documents to the tax office to seek approval.

For further details, please refer to **Part 3 ID06 (Interest Payment Flow of the Government Bond OTC Market) and Part 3 ID07 (Redemption Payment Flow of the Government Bond OTC Market)**.

Interest Payment and Redemption of Corporate Bonds

(i) **PA**
There is no PA appointed by the issuer. KSEI plays the role of PA while bond issuers cover some parts of PA functions themselves.

(ii) **CSD**
KSEI is entitled as a CSD for corporate bonds. KSEI has no banking license and does not use BI for its cash settlement infrastructure. KSEI's participants manage securities separately from their own and their customers' in CSD.

(iii) **Payment Flow**
Interest and principal is transferred from an issuer's account to KSEI's account in KSEI's payment banks. On the payment date, KSEI will distribute interest to participant accounts having entitlement. Then, participants can withdraw cash from KSEI to credit interest and principal to a bond holder's account.

(iv) **Tax**
Indonesia imposes capital gains tax and income tax. The tax on interest is deducted at source by the withholding agent. In the case of corporate bonds, the CSD (KSEI) is the withholding agent. The condition of foreign investors is that same as that for government bonds.

(v) **Other Issues**
For interest payment and redemption of corporate bonds, issuers submit the tax documents to tax office to seek approval.

For further details, please refer to **Part 3 ID08 (Interest Payment Flow of Corporate Bonds) and Part 3 ID09 (Redemption Payment Flow of the Corporate Bond OTC Market)**.

Message Standard

Message Format

Currently, BI-SSSS adopts a proprietary format and BI is developing a second generation format that will be ISO15022 compliant, and possibly ISO20022 compliant.

KSEI adopts a proprietary format for domestic transactions and ISO15022 for cross-border transactions.

Message Items

Regarding the 10 common elements of settlement instruction and confirmation messages defined by the Securities Market Practice Group (SMPG), BI currently has 10 common items in its proprietary format in these two messages. KSEI does not have "place of settlement" and "client of receiving/delivering agent" in the messages.

Market Practice

Operating Hours

For government bond settlement, BI opens at 6:30 and closes at 19:00. The cut-off time is 16:00.

For corporate bond settlement, KSEI opens at 4:00 and closes at 17:10. The cut-off time for cash settlement instruction of corporate bonds is 15:10.

Settlement Cycle

There is no fixed settlement period for bonds in the OTC market. The settlement date is usually negotiated and agreed at the time of the deal by the trading counterparties and is generally T+2. Market participants may discuss the shortening of the settlement cycle.

Fails

KPEI guarantees trade settlement executed on IDX as the clearing and guarantee corporation in the market. KPEI takes over counterparty risk and performs a set of fail management activities to ensure the settlement of each transaction takes place. Its last resort involves the provision of penalties, known as Final Settlement Value (FSV), which roughly amounts to 2.5% of the transaction value. Under FSV, instead of securities, the buying broker receives cash or a combination of cash and securities. Fail trades can be waived as long as the trades are not yet settled. Once the trades are settled, then the trades cannot be cancelled. KPEI does not guarantee the settlement of trades made outside the exchange, thus counterparty risk is borne by end-customers in the OTC market. Since most trades are executed in a scripless environment, 99.9% are settled on the settlement date.

Fail trades for government securities only remain in BI-SSSS for 4 hours before automatically being rejected.

Buy-in

Buy-in is not necessary as KPEI guarantees all on-exchange transactions. Brokers may pass any penalties resulting from fails to the investor if the fail is caused by the investor.

Numbering and Coding

In the Indonesian bond market, there are two CSDs: BI for government bonds and KSEI for corporate bonds.

Numbering and Coding for OTC and Exchange Markets

Securities Numbering
Local code is commonly used in the local market rather than the International Securities Identification Number (ISIN) code. Indonesian ISIN codes are issued by KSEI. The full list of ISIN codes is available at KSEI's web site.

Financial Institution Identification
A local code, the Single Investor Identification (SID), is used for all investors including foreign institutions.

Securities Account
BI adopts multi-layer and omnibus account structures in BI-SSSS. BI's participants manage securities separately from their own and their customers' in CSD. Local securities account numbering is used.

Cash Account
Local cash account numbering is used.

Character Code and Language
UTF-8 is used for BI-SSSS, C-BEST, and BI-RTGS.

Medium- to Long-Term Strategies

BI as the central registry for government bonds maintains an electronic registration. Therefore, the settlement processes of government bonds are STP. One of the current challenges in the Indonesian bond market is how to encourage market participants to use a centralized platform for bond trading.

Regarding new initiatives, BI plans to implement a second-generation system that will replace the existing model comprising BI-SSSS and BI-RTGS.

It will consist of two systems: the trading system and the settlement system. **Figure ID07** presents a comparison between the existing system and the proposed second-generation system. **Figure ID08** presents a roadmap for the latter.

Enhancing interoperability between BI-SSSS and C-BEST is another initiative being undertaken by BI. Emphasis is being placed on interface, standardization (e.g., ISIN), a tier system, single investor identity, and synchronization.

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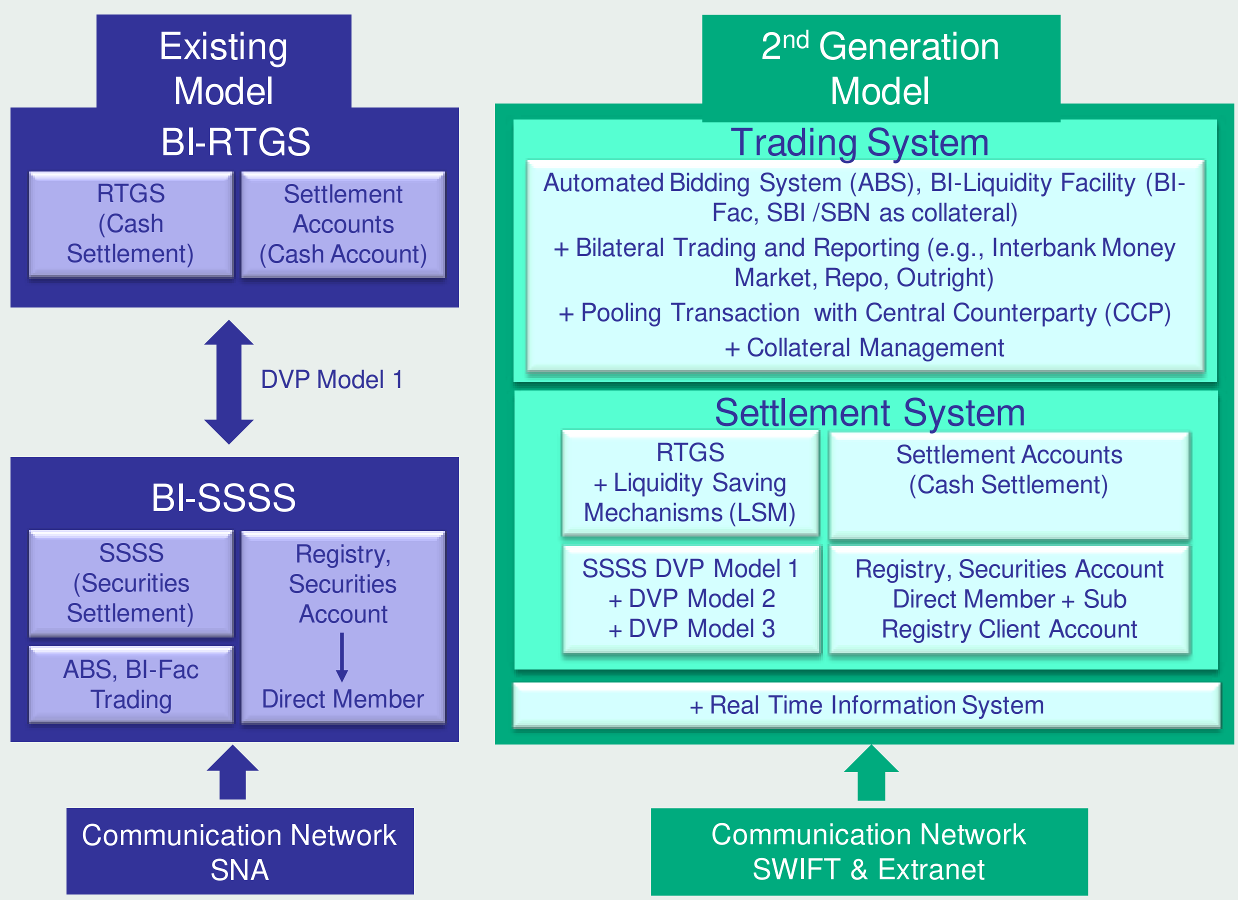
Note: Some parts of this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Figure ID07 Exiting System VS 2nd Generation



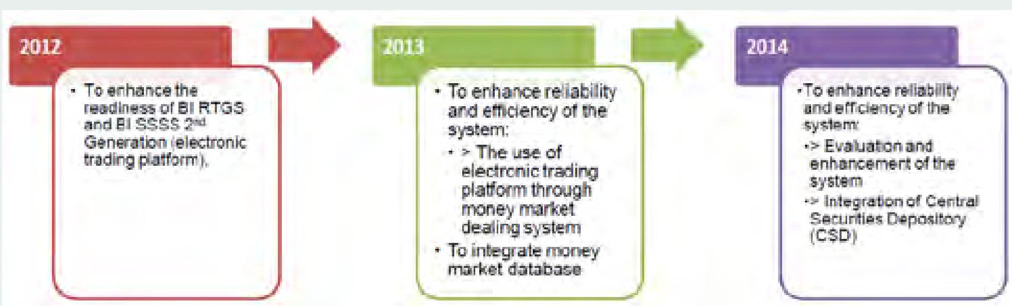
Source: Bank Indonesia.

Figure ID08: Roadmap of 2nd Generation Model System

Year	Activities
2008	▪ Grand Design ▪ Business Requirements ▪ Market Liquidity and Financial Market Deepening
2009	▪ Request for Proposal (RFP) ▪ Product Evaluation ▪ Procurement Process
2010	▪ Procurement Process ▪ Dissemination to Participants and other Stakeholders ▪ Formulation of Regulation
2011	▪ Formulation of Functional Specifications and Design Specifications ▪ Development (Product Customization) ▪ Dissemination to Participants and other Stakeholders ▪ Formulation of Regulations (BI Regulation and Circular Letter)
2012	▪ Testing (Unit Test, SIT, UAT, UIT, Simulation-Industrial Test) ▪ Dissemination to Participants and other Stakeholders ▪ Formulation of Regulations (BI Regulation, Circular Letter, SOP, guidance) and By-Laws ▪ Training for Participants ▪ Preparation for Implementation ▪ Implementation

Source: Bank Indonesia.

Figure ID09: Timeframe for Developing System Infrastructures



Source: Bank Indonesia.

Japan (JP)

Bond Market Infrastructure

Overview of Bond Markets

The secondary market for bonds in Japan can be divided into the exchange market and the over-the-counter (OTC) market. Most bond transactions take place in the OTC market.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the amount of local currency (LCY) government bonds outstanding in Japan at the end of 1Q13 was US$9,933.99 billion, while LCY corporate bonds totaled US$97.95 billion.

The scale of the OTC market is massive, reaching JPY7,723 trillion in 2010 and accounting for almost 100% of total bond trade value.[1] On the other hand, bond purchasing and selling in the exchange market was valued at only JPY1 trillion in 2010. By bond type, the value of government bond purchasing and selling was JPY7,620 trillion in 2010, or 98.7% of total trade value, while the value of corporate bond purchasing and selling amounted to JPY35 trillion, or 0.5% of the total.[2]

In the OTC market, a Pre-Settlement Matching System (PSMS) is provided by the Japan Securities Depository Center, Incorporated (JASDEC) for all types of debt securities. However, it does not mean all transactions data are inputted into the system, and some transactions go directly to the central securities depositories (CSDs). Regarding clearing systems, the Japan Securities Clearing Corporation (JSCC)[3] is the central counterparty (CCP) for Japanese Government Bonds (JGBs) and other types of debt traded in the exchange market. There are two CSDs in Japanese bond markets: (i) the Bank of Japan (BOJ), which operates the Financial Network System (BOJ-NET) and is the CSD of JGBs, and (ii) JASDEC, which is the CSD for all other securities in Japan. All securities can be settled with central bank money using delivery versus payment (DVP).

Please refer to **Part 3 JP01 (Government Bond Market Infrastructure Diagram)** and **Part 3 JP02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

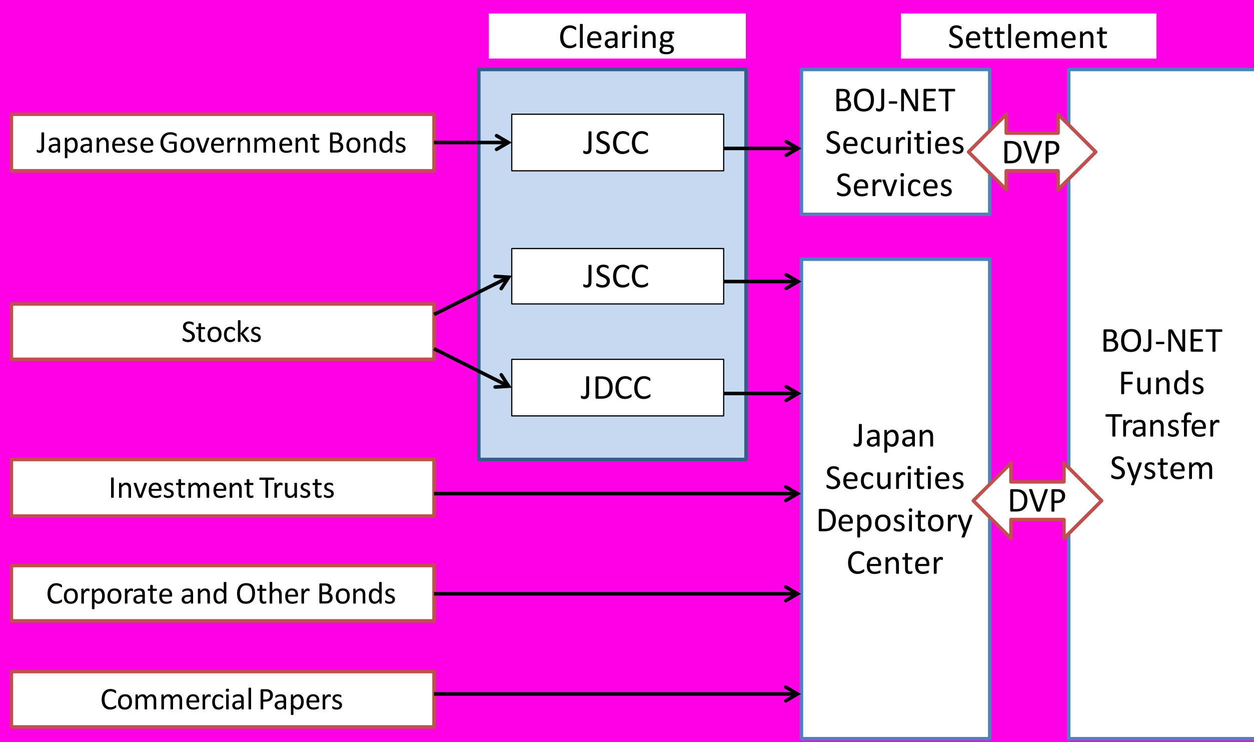
Ministry of Finance (MOF)
MOF is responsible for the management of fiscal and economic policies in Japan. MOF issues JGBs

1 The bond purchasing and selling volume of exchanges = (trading volume on the exchanges) * (2).

2 These figures include the purchase and sale values of repurchase agreements.

3 Formerly, the Japanese Government Bond Clearing Center (JGBCC).

Figure JP01: Overview of Securities Settlement Systems in Japan



Source: ADB SF2 Consultant based on information from Bank of Japan.

and makes interest payments and redemption. Moreover, MOF tries to achieve stable and smooth financing for national accounts and to minimize medium-to-long term financing costs. It formulates an annual JGB Issuance Plan in close consultation with market participants. Also, it conducts cost-at-risk (CAR) analysis and promotes diversification of the investor base.

Financial Services Agency (FSA)
FSA inspects and supervises banks and insurance and securities companies; establishes policies for the financial system; and monitors adherence to the relevant securities laws, including the Financial Instruments and Exchange Law, Banking Law, and Deposit Insurance Law. The Financial Instruments and Exchange Law governs trading practices in the Japanese securities market.

Bank of Japan (BOJ)
BOJ is the central bank of Japan. BOJ deals with the entire business of JGBs, including issuance, securities and cash settlement, and interest payment and redemption. BOJ is also the central depository of JGBs. The settlement of funds and Japanese government securities is facilitated by BOJ-NET. BOJ operates the BOJ-NET Funds Transfer System (BOJ-NET FTS) and BOJ-NET JGB Services. BOJ also oversees all systemically important payment systems (SIPS).

Tokyo Stock Exchange, Inc. (TSE)
TSE is a stock corporation that provides an exchange securities market under the authorization of the Prime Minister. TSE is a central institution in the secondary market and its major functions include providing a market place, monitoring trading, listing securities, monitoring listed securities, and supervising trading participants.

Japan Securities Depository Center, Inc. (JASDEC)
JASDEC was founded on 6 December 1984 as a non-profit foundation and began operations on 9 October 1991. It was later incorporated

on 4 January 2002 and began operations as a stock company, JASDEC Inc., on 17 June 2002. The stock company is owned by its depository participants, which include securities companies, banks, insurance companies, securities finance companies, and stock exchanges.

Japan Securities Clearing Corporation (JSCC)
JSCC was established in 2002 as the first cross-market clearing organization in the Japanese securities market by the stock exchanges and the Japan Securities Dealers Association (JSDA). In January 2003, JSCC was licensed as the first clearing organization in Japan to conduct securities obligation assumption business (now called financial instruments obligation assumption business) under the Securities and Exchange Law (now called the Financial Instruments and Exchange Law). JSCC merged with the Japan Government Bond Clearing Corporation (JGBCC) in October 2013. JGBCC was founded in October 2003 and began offering JGB settlement and clearing services in May 2005 after being granted authorization to assume obligations arising from the transaction of financial instruments under the Financial Instruments and Exchange Act. As a result of the merger, JSCC took over the role of JGB clearing services.

Japan Securities Dealers Association (JSDA)
JSDA is an association functioning as a self-regulatory organization (SRO) and as an interlocutor for the securities industry. JSDA's membership comprises more than 500 securities firms and other financial institutions operating securities businesses in Japan. As a fully empowered SRO, JSDA extensively regulates market intermediaries. Its self-regulatory functions encompass rule-making, enforcement, inspection, disciplinary actions, accreditation of sales representatives, and dispute mediation. JSDA also provides vehicles for policy dialogue between the industry, the government, and other related parties; conducts and promotes investor education; and implements studies for further developing the market.

Overview of Government Bond Market

Trading

OTC Market
Over 99% of JGB trades take place in the OTC market. The sell side and buy side trade through telephone, fax, the Private Trading System (PTS), and systems operated by information vendors. JASDEC provides trade matching functions with the Pre-Settlement Matching System (PSMS) for all types of debt securities, although some transactions go directly to the CSDs. JASDEC also serves a pre-settlement matching function for clearing and DVP settlement.

Exchange Trading
TSE operates the exchange market for JGBs. However, TSE currently deals with only JGB futures in a trading system called Tdex+. JGB spot transactions are conducted outside the trading system.

CCP

CCP for the OTC Market
Approximately 40% of JGB domestic transactions are cleared by JSCC, which is the CCP for JGB.[4] JSCC replaces a contract between the two parties with two new contracts: one between JSCC and the buy side, and the other between JSCC and the sell side. Cash and securities positions between JSCC and participants are netted and settled on a DVP basis using BOJ-NET. Netting reduces the value of JGB transfers to roughly one-quarter of the value of the original transactions. JSCC conducts novation for OTC market transactions.

CCP for the Exchange Market
There is no CCP for the exchange market.

Bond Settlement

As mentioned above, BOJ is the CSD for JGBs. It operates BOJ-NET, an online network system

[4] Cross-border transactions are processed directly by CSD (BOJ-NET) without using CCP (JSCC).

linking BOJ and other financial institutions. BOJ-NET is used for funds transfer services, as well as JGB-related services including settlement, auction, and initial payments for the issuance of JGBs. The business application of BOJ-NET for JGB-related services is called BOJ-NET JGB Services, which started operations in 1990 to enable online processing of services. BOJ-NET's network is also called BOJ-NET. The type of line used is VPN. The protocol used is TCP/IP.

Cash Settlement

Cash settlement of JGB transactions uses central bank money. For cash settlement obligations for domestic bond transactions, JSCC has an account with the BOJ. Intraday overdraft is allowed if there is collateral to secure debt incurred as a result of the use of the intraday overdraft facility. The liquidity-saving feature of the BOJ-NET Real-Time Gross Settlement (RTGS) system enables the smooth settlement of bond transactions.

Overview of Corporate Bond Market

Trading

OTC Trading
Corporate bonds are mostly dealt in the OTC market. It is not necessary for the sell side and the buy side to input the OTC dealings into trading systems, but both the sell side and buy side send a trade report to JASDEC for matching.

Exchange Trading
There are less corporate bond transactions in exchange markets than the OTC market, although TSE and the Nagoya Stock Exchange have bond trading facilities.

CCP

CCP for the OTC Market
There is no CCP for the corporate bond OTC market.

CCP for the Exchange Market
There is no CCP for the corporate bond exchange market.

Bond Settlement

JASDEC is the central depository for all types of bonds except JGBs. Under the dematerialized system, it is compulsory for all listed securities to be transferred to JASDEC's Book-Entry Transfer System (BETS). Transaction settlements include securities alone, with cash settlement handled separately through BOJ. The types of lines are Integrated Services Digital Network (ISDN) and the protocol is TCP/IP. Message formats are ISO15022 and comma-separated values (CSV).

Cash Settlement

Cash settlement of corporate bond transactions is conducted in BOJ-NET as is the case in government bond.

Interest Payment and Redemption

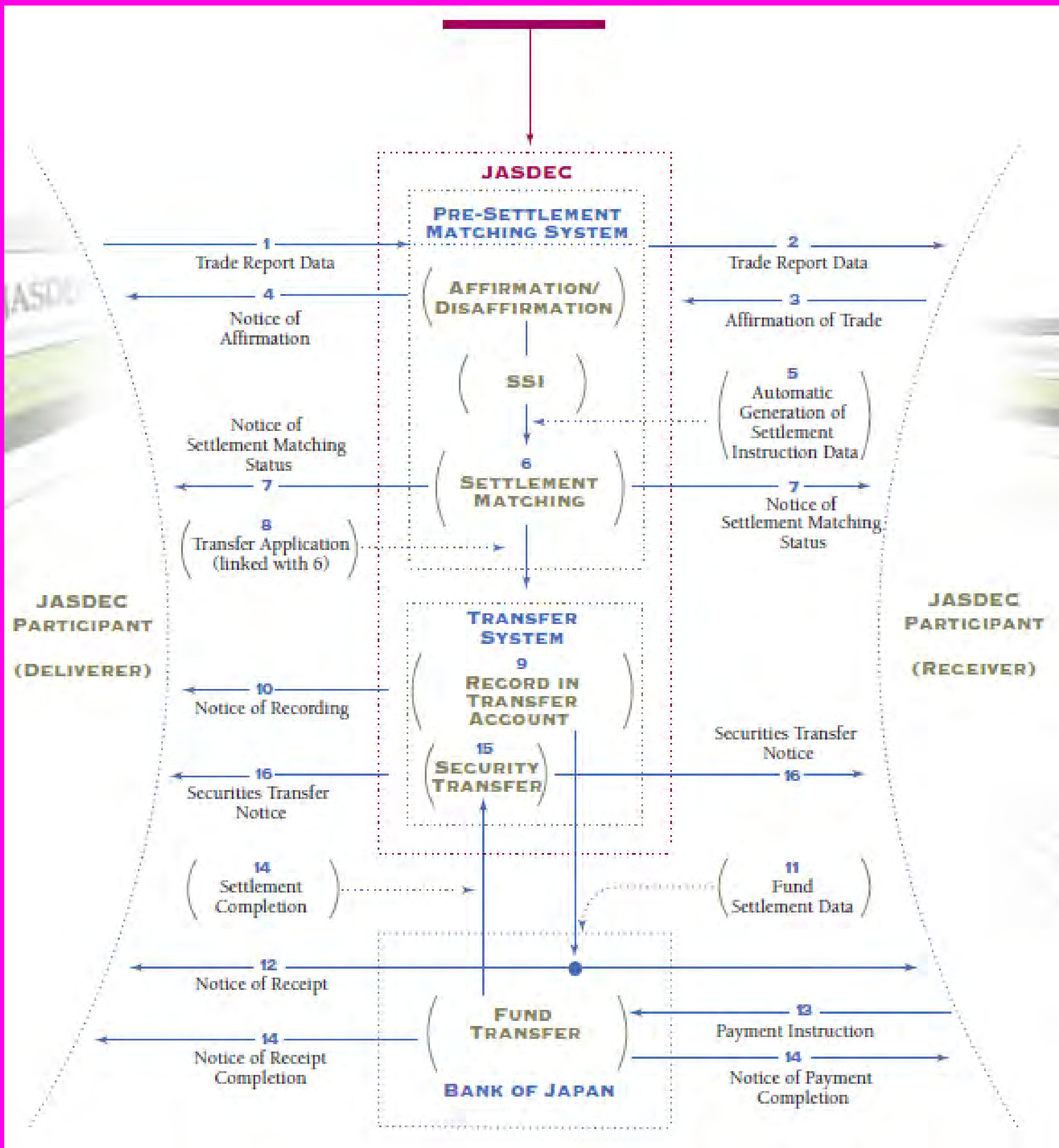
Interest Payment and Redemption of Government Bonds

Most bonds pay interest on a semi-annual basis depending on the conditions for the interest. Interest is calculated on a 365-day basis (366 days in a leap year). BOJ notifies CSD participants of interest payments twice in advance. Regarding redemption, BOJ sends notification of payment detail to CSD participants twice in advance as well.

Interest Payment and Redemption of Corporate Bonds

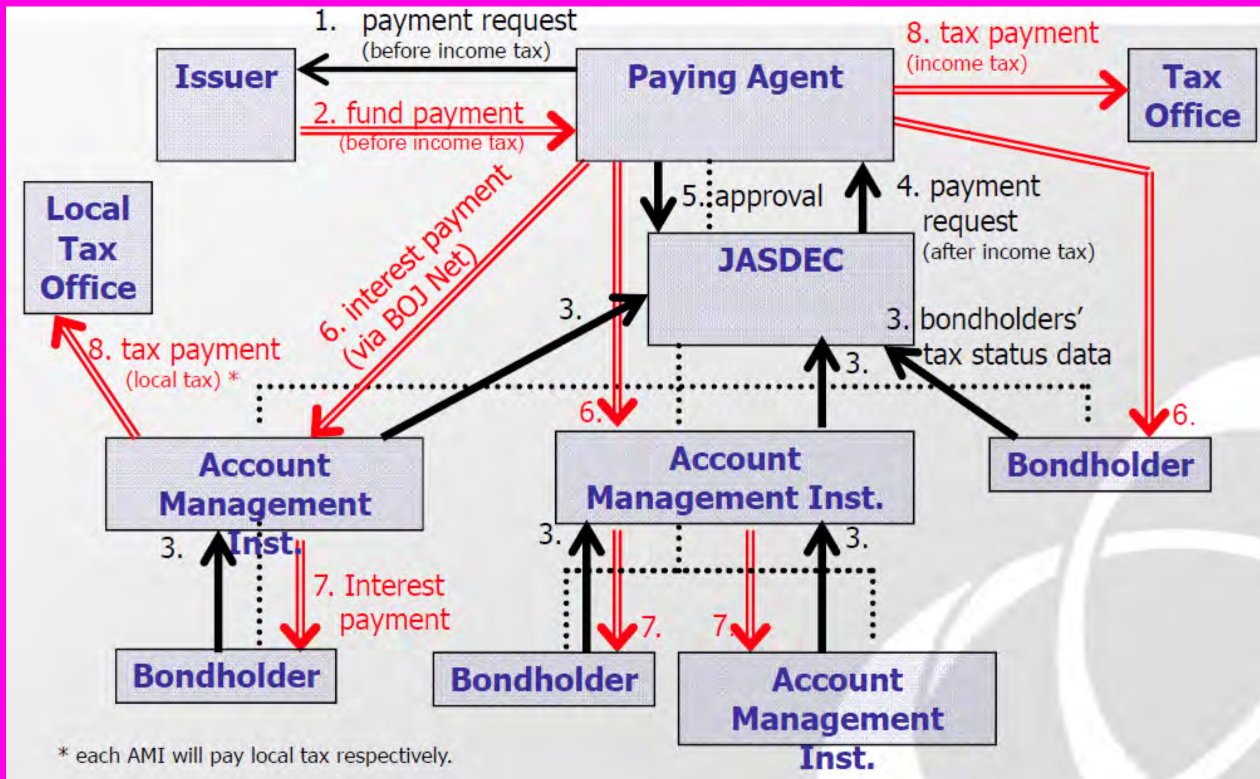
Most bonds pay interest on a semi-annual basis. Interest payment is performed on condition of a cycle–interest setup at the time of issue. Interest is calculated on a 365-day basis (366 days in a leap year). Unlike the case of government bonds,

Figure JP02: Book-Entry Transfer System (BETS) for straight bond by JASDEC



Source: JASDEC.

Figure JP03: Interest Payment Flow of Corporate Bond



Source: Japan Securities Depository Center.

the Paying Agent (PA) does not notify CSD participants of an interest payment in advance (**Figures JP03, JP04**).

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow of the JGB OTC market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

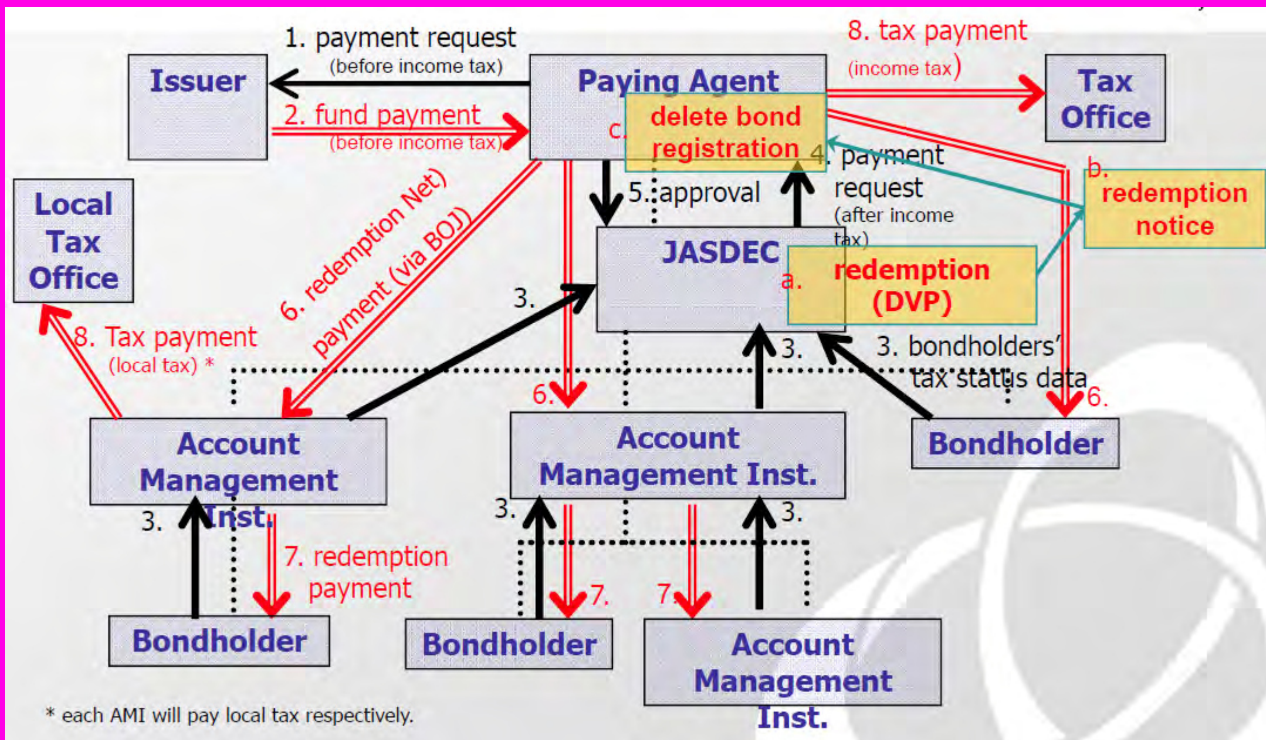
(i) **Pre-Settlement Matching**
JASDEC owns and operates PSMS for the pre-settlement of JGBs. PSMS provides a framework for electronic matching for institutional investor transactions between investment management companies, securities companies, trust banks, custodian banks, and life and non-life insurance companies to achieve the seamless, automated processing of all operations from post-trade through settlement.

(ii) **Bond Settlement**
Currently, there is no connection between PSMS and BOJ-NET. Therefore, online transfers from PSMS to BOJ-NET have not yet been realized. Settlement instructions are entered from the sell side or buy side. Then, BOJ-NET forwards the instruction to the other side for affirmation. The other side sends back affirmation after checking the instruction and confirming its accuracy.

Regarding settlement matching, BOJ adopts local matching. First, the sell side sends a DVP request to BOJ-NET.[5] BOJ-NET sends notice of the DVP request from the sell side to the buy side. After receiving the notice,

[5] The buy side also can send (initiate) the DVP request.

Figure JP04: Redemption Payment (with final interest payment) Flow of Corporate Bond



Source: Japan Securities Depository Center.

the buy side matches the notice and sends the DVP request back to BOJ-NET. BOJ does not send matching confirmation to either side at the time of settlement matching. BOJ performs DVP settlement on a real-time basis. BOJ adopts DVP Model 1 of the Bank for International Settlements (BIS) definition. DVP settlement is effected by locking all related accounts and releasing them simultaneously.

With the launch of a new BOJ-NET in either 2015 or 2016, the system will be able to connect with PSMS to receive settlement instruction data. After receiving the data, the new BOJ-NET will send a notice of acceptance of JGB transfer instruction for DVP to both of the sell side and the buy side. After receiving a notice of acceptance of JGB transfer instruction for DVP, the sell side will send a DVP request to the new BOJ-NET. In the case of JSCC, the sell side or buy side will send settlement instruction to BOJ via PSMS when connected.

(iii) **Cash Settlement**

Cash settlement is conducted by BOJ using central bank money. The buy side enters a DVP request into BOJ-NET, and then BOJ-NET notifies the buy side of acceptance of the instruction. BOJ performs bond and cash settlement simultaneously. When the settlement is completed, BOJ-NET sends settlement confirmation to both the sell side and the buy side.

For further details, please refer to **Part 3 JP03 (Government Bond Transaction Flow for Domestic Trades OTC Market (JGB) / DVP through Trade Matching (PSMS)), Part 3 JP04 (Government Bond Transaction Flow for Domestic Trades OTC Market (JGB) / DVP (New BOJ-NET) through Trade Matching (PSMS) and JSCC),** and **Part 3 JP05 (Government Bond**.

DVP Flow of Corporate Bonds for Domestic Trades

The business flow in the Japanese corporate bond OTC market is analyzed using a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
PSMS is operated by JASDEC and the scheme of electronic matching on trades and settlements for institutional investor transactions in PSMS is similar to the case of government bonds. JASDEC receives a trade report from both sides, performs post-trade matching, and creates the Standing Settlement Instruction (SSI).

(ii) **Bond Settlement**
PSMS and BETS are directly connected with each other. PSMS transfers settlement instruction to BETS. Before sending, PSMS generates settlement instruction within the system and sends a notice of matching status to both the sell side and buy side. Hence, BETS does not send any instruction to either the sell side or buy side before bond settlement.

JASDEC performs settlement matching via a central matching method within its system. JASDEC holds bonds with BETS and sends funds settlement data for DVP to BOJ-NET. JASDEC executes bond settlement following cash receipt completion from BOJ. JASDEC sends settlement confirmation to the sell side and buy side. JASDEC and BOJ are connected online and they perform DVP settlement on a real-time basis. JASDEC adopts DVP Model 1 of the BIS definition.

(iii) **Cash Settlement**
BOJ conducts cash settlement of corporate bonds using its BOJ-NET FTS. JASDEC sends a DVP request (cash) to BOJ-NET and BOJ-NET sends a payment request to the buy side only. The buy side receives a payment request from BOJ-NET and affirms and returns the instruction. BOJ-NET sends a cash settlement report to the sell side and the buy side, and notifies JASDEC of cash receipt completion for bond settlement.

For further details, please refer to **Part 3 JP05 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

Foreign investors are not subject to any restrictions on foreign exchange (FX) or cash management. Trade orders are placed from a foreign institutional investor (FII) to a global broker, and then to a domestic broker. The trade flow is a typical one. Japan is an open market in which FX with underlying investment, third-party FX, offshore FX trading, FX prefunding, FX reporting, and overdraft for foreign investors are all permitted. The Japanese yen is available in international financial markets. Also, a global custodian, or even large FIIs or their investment managers, may have their own treasury function based in Tokyo. Hence, trades are funded through a domestic custodian account in Japanese yen on settlement day.

For further details, please refer to **Part 3 JP06 (Bond Transaction Flow for Foreign Investors OTC Market (JGB) / DVP)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payment and redemption of JGBs is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
For JGBs, BOJ is appointed as the PA, requesting interest payment instruction from an issuer and paying interest and principle to custodians on behalf of the issuer.

(ii) **CSD**
BOJ also has a CSD function with the system called BOJ-NET. BOJ as the CSD, PA, and central bank in Japan has a cash account in its RTGS system.

(iii) **Payment Flow**
BOJ plays a role in payment flow as a PA. BOJ makes redemption and interest payment to an account management institution (AMI)

via BOJ-NET for credit to bondholder's account.[6] BOJ-NET is used as a cash settlement system for interest payment and redemption. Central bank money is usually more secure than commercial bank money.

(iv) **Tax**
Withholding taxes are imposed on interest for residents only, and not for non-residents in Japan. PA withholds income taxes while AMI withholds local tax.

For further details, please refer to **Part 3 JP07 (Interest Payment Flow of Government Bond)** and **Part 3 JP08 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

The business flow of interest payment and redemption of corporate bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
Issuers appoint commercial banks as a PA. The PA requests interest payment instruction of issuers and pays interest and principal to AMI on behalf of issuers. Also, the PA confirms the bond-holder list and calculates interest.

(ii) **CSD**
JASDEC is charged with CSD functions for corporate bonds in Japan. It does not have a banking license and does not have an account in the RTGS system. JASDEC receives a bondholder list with tax data from the participants (generally, custodians).

(iii) **Payment Flow**
Both the PA and AMI have an account within BOJ-NET. First, the PA transfers cash for redemption and interest payment from an issuer's account to its own account. Then, the PA instructs BOJ to transfer cash to AMI's account to credit the bondholder's account via BOJ-NET.

(iv) **Tax**
Withholding taxes are imposed on interest for residents only. The PA withholds income tax while AMI withholds local tax.

For further details, please refer to **Part 3 JP09 (Interest Payment Flow of Corporate Bond)** and **Part 3 JP10 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

BOJ uses its proprietary format and has plans to adopt ISO20022 in FY2015. JASDEC uses ISO15022 and will adopt ISO20022 in January 2014.

Message Items

BOJ-NET does not comply with international standard format, instead using its own format. Regarding the 10 common elements of settlement instruction and confirmation defined by Securities Market Practice Group (SMPG), BOJ has the same message items as ISO20022 except with respect to Trade Data, Place of Settlement, and Client of the Receiving or Delivering Agent.

Market Practice

Operating Hours

BOJ-NET for JGBs operates from 9:00 to 16:30. The cut-off time is 14:00.[7]

[6] AMI has the same meaning as Account Management Agent (AMA), and it plays a similar role as custodian.

[7] The cut-off time is the deadline for bond settlement prior to the closing time for the book-entry system as decided by market participants for the purpose of recognizing fails and completing all settlements each day.

JASDEC operates from 9:00 to 17:00. The cut-off time is 15:00.

Settlement Cycle

The standard settlement cycle for domestic JGB transactions is T+2. For domestic corporate bond transactions, it is T+3. The settlement cycle of cross-border transactions is between T+2 and T+4. One reason for the differences is that business processes vary between domestic and cross-border transactions. Cross-border transactions may require additional operations by global and local custodians. The other reason is the time differences between North America, Europe, and Japan.

Fails

OTC Market DVP Transactions for Government Bonds

JSDA sets out the guidelines concerning fails for government bonds. Please refer to Appendix 2 for Japanese Government Securities Guidelines for RTGS published by JSDA.

Exchange Market DVP Transactions for Government Bonds

Settlements of JGBs that are not delivered by 13:30 on settlement date are postponed to a later date, but must be settled no later than settlement date +4. The delivering participant must notify JSCC beforehand of the date on which the settlement will take place for the failed transaction.

Exchange Market DVP Transactions for Corporate Bonds

Delivering participants are allowed to settle corporate bonds with the consent of the receiving participant by issuing the due bill in lieu of actual securities delivery. The delivering participant must deliver the security within 5 business days after the original settlement date.

Bilateral Netting

JSCC act as CCP and guarantees the performance of payment and securities delivery of any trading transaction for government bonds. This reduces the risks stemming from clearing members who fail to meet their contractual obligations. In addition, since the legal basis of multilateral netting is not clear in Japan, after a clearing organization takes over debt from all the participants as a CCP and becomes a party concerned with all the dealings, it performs bilateral netting to acquire the same effect with multilateral netting.

Taxation

PAs withhold 15% in income taxes and AMI withholds 5% in local taxes from individual investors (residents). Non-residents can become tax-exempt by following the necessary procedures.

Numbering and Coding

Numbering and Coding for OTC and Exchange Markets

Securities Numbering

BOJ-NET uses proprietary code and the new BOJ-NET will adopt International Securities Identification Number (ISIN) as a securities identification number. JASDEC has already adopted ISIN for bonds. ISIN will be the standard for securities identification in Japan. The relationship between ISIN and local numbering is shown in **Figure JP05**.

Financial Institution Identification

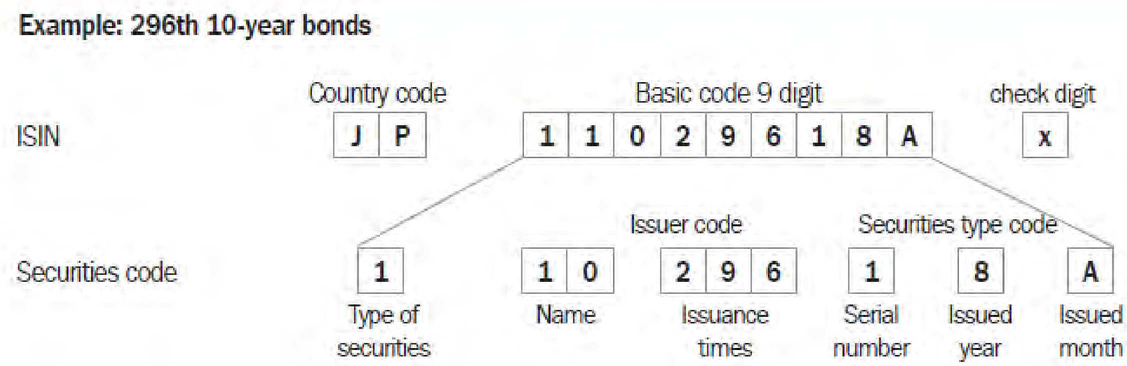
Currently, only proprietary financial institution identification codes are used by CSDs for JGBs. The new BOJ-NET will adopt the Business Identifier Code (BIC) in addition to the current proprietary codes. JASDEC has already adopted BIC **(Figure JP06)**.

Securities Account

BOJ adopts an omnibus account structure in its book entry, and also has a multi-layer account structure for participants. JASDEC also adopts an omnibus account structure in its BETS, and has a multi-layer of account structure for CSD participants.

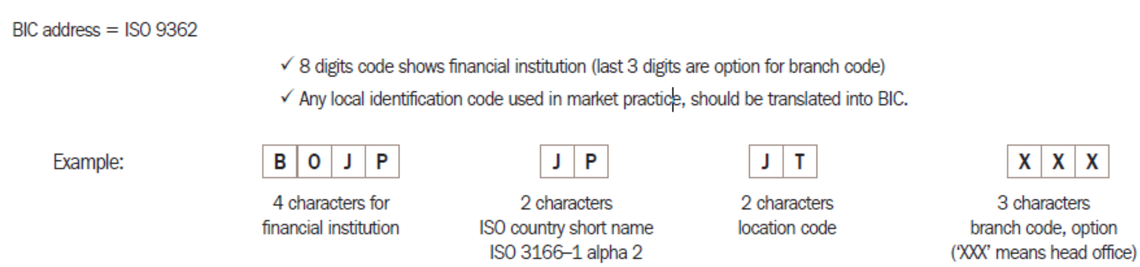
Securities accounts use proprietary numbering. The current proprietary account structure will be used for the new BOJ-NET. **Figure JP07** provides a brief description of the account structure based

Figure JP05: Local Numbering Scheme and Codes for International Securities Identification Number



ISIN = International Securities Identification Number
Source: NTT DATA Corporation.

Figure JP06: Financial Institution Identification



BOJP = Bank of Japan; JP = Japan; JT =Tokyo
Source: NTT DATA Corporation.

on BOJ regulations of the JGB book-entry system.

The securities account structure is illustrated in **Figure JP08**.

JASDEC has also adopted a proprietary securities account structure.

Cash Account
Cash accounts use proprietary numbering.

Character Code and Language
The current BOJ-NET adopts Japanese Industrial Standards (JIS). New BOJ-NET will adopt Unicode, using UTF-8 as the encoding scheme. The language for New BOJ-NET will be Japanese. PSMS and BETS of JASDEC also adopt UTF-8.

Character code sets and language are illustrated in **Figure JP09**.

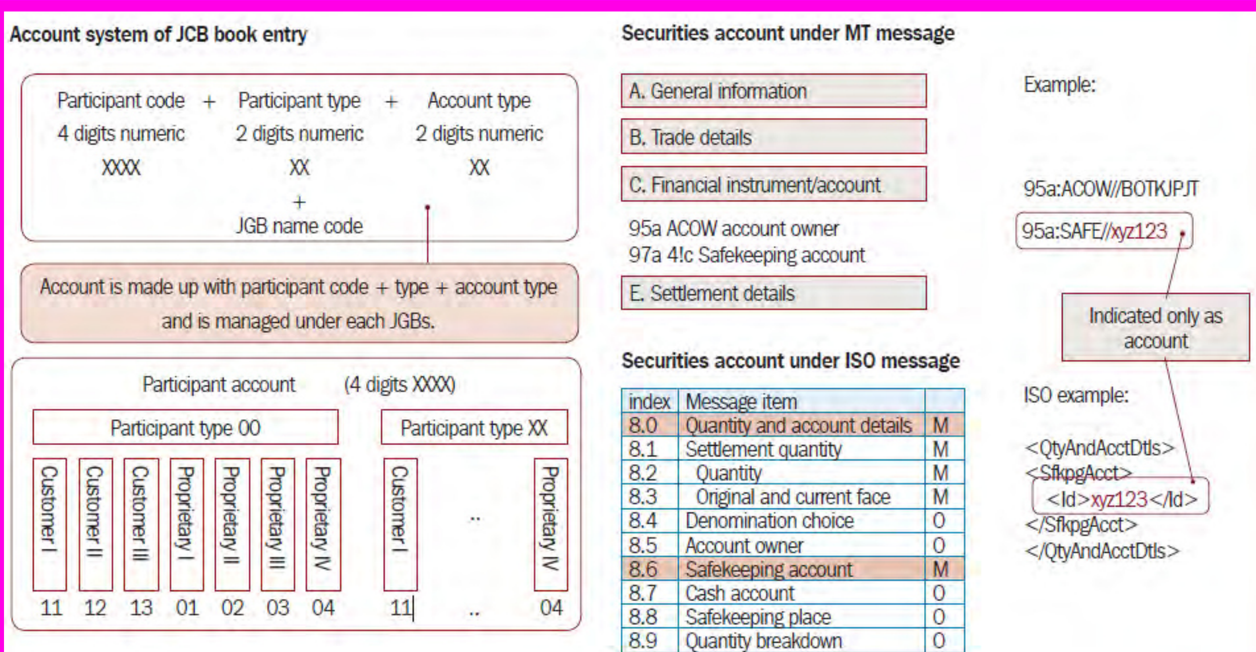
Figure JP07: Securities Account

Divisions of Direct Participant's Account[1]

1. The Direct Participant's Account shall be divided into the following:
   a. The account into which the description or record of the book-entry JGBs to which the relevant Direct Participant holds the rights shall be made (hereinafter referred to as the "Direct Participant's Account [Proprietary ledger]"); and
   b. The account into which the description or record of the book-entry JGBs to which Customers of the relevant Direct Participant, or its Lower-Positioned Institutions, hold the rights shall be made (hereinafter referred to as the "Direct Participant's Account [Customer ledger]").
2. The Direct Participant's Account (Proprietary ledger) and the Direct Participant's Account (Customer ledger) shall have subdivisions for each Classification as separately provided by the BOJ. In such case, the Direct Participant's Account (Proprietary ledger) shall have a subdivision into which the book-entry JGBs, which are subject to a pledge, are described or recorded, and the other subdivision into which other book-entry JGBs are described or recorded.

1 Bank of Japan. 2009. Regulations concerning the Japanese Government Bonds Book-Entry System. http://www.boj.or.jp/en/paym/jgb_bes/data/fyoryo01.pdf

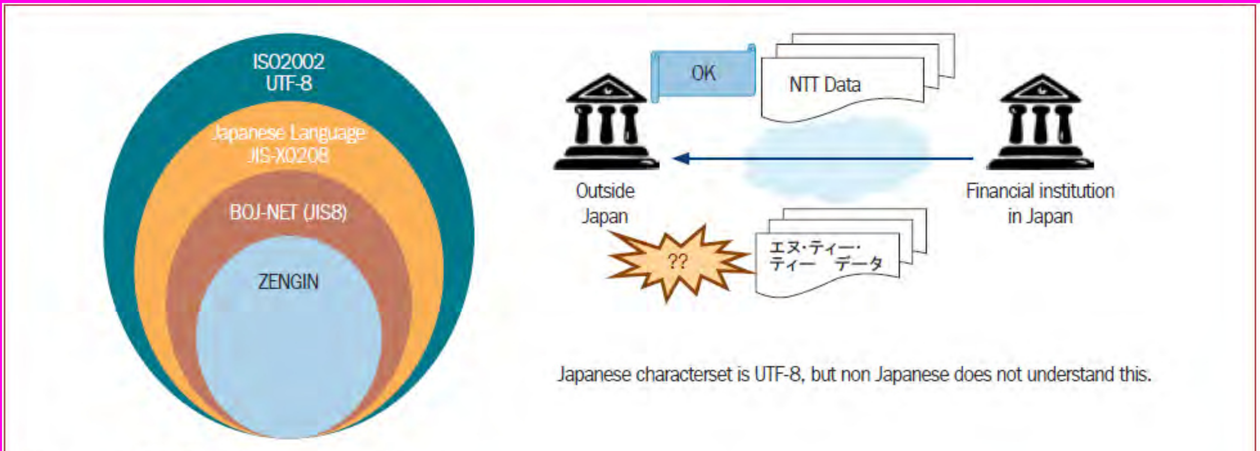
JP08: Securities Account Structure



index	Message item	
8.0	Quantity and account details	M
8.1	Settlement quantity	M
8.2	Quantity	M
8.3	Original and current face	M
8.4	Denomination choice	O
8.5	Account owner	O
8.6	Safekeeping account	M
8.7	Cash account	O
8.8	Safekeeping place	O
8.9	Quantity breakdown	O

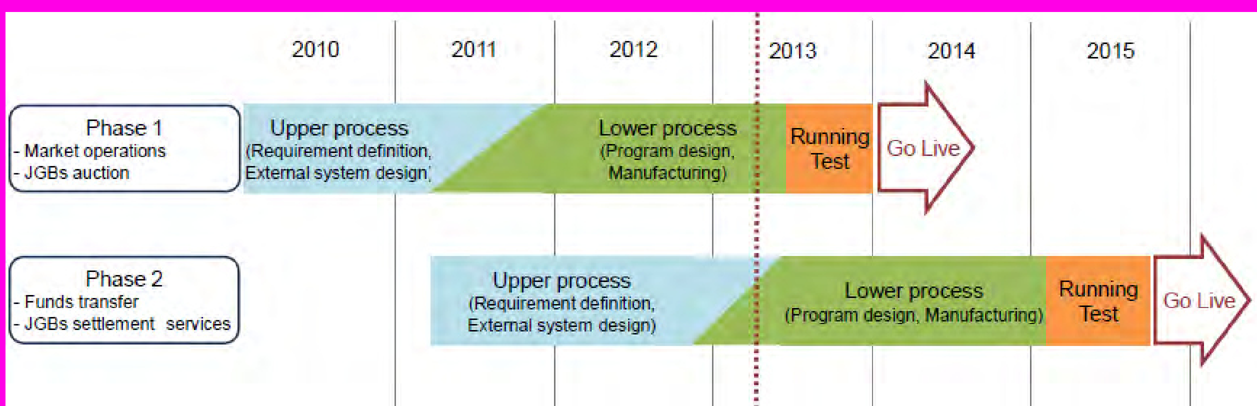
Source: ABMF SF2.

Figure JP09: Character Code Sets and Language in the Japanese Settlement System



Source: NTT DATA Corporation.

Figure JP10: New BOJ-NET Implementation Timeline



Source: Bank of Japan.

Medium- to Long-Term Strategies

Regarding message standards, JASDEC will introduce ISO20022 in 2014 for PSMS and BETS. JASDEC will also introduce SWIFTNet by 2014 and will terminate use of ISO15022 by the end of 2019.

BOJ will adopt ISO20022 for some transactions related to cross-border businesses under the new BOJ-NET between the end of 2015 and early 2016 (**Figure JP10**). On the matter of the settlement cycle, a working group tasked to shorten the settlement cycle for JGBs was established in September 2009 under the Reform Promotion Center for Securities Clearing and Settlement System, with JSDA serving as the secretariat of the working group.

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Note: Some parts of this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Appendixes

Appendix 1: Pre-Settlement Matching System

I. Introduction

The Pre-Settlement Matching System (PSMS) provides a framework for electronic matching on trades and settlements for institutional investor transactions between investment management companies, securities companies, trust banks, custodian banks, life and non-life insurance companies, and other actors in the bond market to achieve a seamless, automated processing of all operations from order to settlement. Moreover, PSMS provides an advance matching function for delivery-versus-payment (DVP) book-entry transfer settlements conducted by the Japan Securities Depository Center Inc. (JASDEC) and for clearing conducted by the Japan Securities Clearing Corporation (JSCC).

A. Straight through Processing for Securities Settlement in Japan

As far as institutional transactions are concerned, it is quite common that institutions that perform investments and those that perform settlement are different entities not only in Japan but also in other countries. In Japan, however, it is typical for trust banks to retain the rights and obligations. For this reason, PSMS was developed to realize the straight through processing (STP) suitable to the specifics of the securities settlement environment in Japan.

B. Establishment and Application of Japanese Standards in Conformity with Global Standards

Securities markets have been rapidly globalized. Until recently, securities settlement systems used to be constructed on the vernacular architecture of data syntax and codes, which can be only used in the domestic market; connectivity with overseas counterparts must be incorporated in future settlements system. To achieve this, PSMS was developed based on the following standard data syntax and codes:

(i) Data Syntax: ISO15022 (and ISO 20022). ISO15022 is the data syntax originally developed for the Society for Worldwide Interbank Financial Telecommunications (SWIFT) network for securities and cash settlement data, and then was registered with the International Organization for Standardization (ISO) in the autumn of 2002. Added to this, ISO20022 was issued in 2004 as a new international standard with regard to the registration procedure of data syntax used in financial industry. As a successor of ISO15022, it has become a global trend to adopt the next-generation data syntax which conforms to ISO20022.

PSMS, from its very beginning, has adopted data syntax which is based on ISO15022. Effective from January 2014 on, PSMS will also support new syntax in principle, which is in full conformity with ISO20022. The use of these data syntax will allow, for example, Japanese sub-custodians to easily transmit settlement instructions to PSMS, which are sent from global custodians.

Because of the scalable architecture, notably ISO20022, it is also expected to assure the scalability of PSMS to meet future increases in the scope of securities to be handled and the diversification of types of trades.

Added to the adoption of ISO20022 in January 2014, users will be able to connect to PSMS via SWIFTNet, which is widely used among overseas financial institutions as a network to electronically transmit and receive ISO20022 messages.

(ii) International Securities Identification Number. The International Securities Identification Number (ISIN) is the standard code allocated by the Securities Identification Code Committee in conformity with the International Securities Identification Code Standard (ISO6166). All Japanese domestic stocks, as well as all bonds issued by public offering in Japan, are allocated with the ISIN"JP+ basic code+ check digit". ISIN is the only global common code, since it is allocated by the securities identification code organization of each country in accordance with the International Identification Code Standard. The adoption of ISIN will have the same effects as the adoption of ISO15022 mentioned above.

(iii) Business Identifier Code. It is necessary to identify various participating parties, such as counterparties of trading and of settlement, in PSMS by code numbers. The Business Identifier Code (BIC) is being used in the SWIFT network as the standard bank identifier code, such as ISO15022, and is registered with ISO as ISO9362. To utilize PSMS, it is necessary for all users—such as banks, securities companies, investment trust companies, and investment advisory companies—to obtain a BIC. In cases where it is not possible to obtain a BIC, other identifiers, such as the Uniform Bank Code or the Standard Code for Securities Company, will be used as a supplementary identification in PSMS.

C. Matching on Trade Date (T+0 Matching)

While PSMS was implemented under a T+3 environment, the objective is to complete the matching of trades on the trade date, T+0, to keep pace with the movement of the securities industry to a shorter settlement cycle, T+1. It is believed that completion of trade matching on T+0 will help increase convenience for investment trust management services. To be precise, open-ended investment trust is required to calculate and announce the net asset value (NAV) every day, which should be done accurately and promptly. PSMS provides facilities to match the investment instruction data sent by investment trust companies and trade report data sent by securities companies on a real-time basis, and then sends the matched data to trust banks. This enables trust banks to smoothly and accurately calculate the NAV and match it with the NAV calculated by investment trust companies more quickly and accurately.

D. Connecting to the Delivery-versus-Payment System

On 17 May 2004, with the implementation of the delivery-versus-payment (DVP) system for trades other than stock exchange transactions, PSMS linked to the Book-Entry Transfer System. The matched settlement instruction data linked to the Book-Entry Transfer System set in PSMS is automatically transmitted to the Book-Entry Transfer System, thereby completing the settlement process without any manual interventions. The participation of PSMS is a requisite for putting DVP settlement into practice.

E. Digitization and Dematerialization

Digitization of trade data and dematerialization or immobilization of securities is a prerequisite for bringing STP into operation. As a practical step, an amendment to the Ordinance of the Cabinet Office was issued on 1 October 2001, which allows securities companies to send trade reports to their customers in electronic or magnetic form through PSMS, upon the agreement of customers.

F. The Average Price: The New Pricing Framework in Japan

On 7 July 2003, an amendment to the Ordinance of the Cabinet Office on securities companies and the members'notification of the Japan Securities Dealers Association (JSDA No. 15–33) relating to the average price were issued. This allowed securities companies not to send to their customers trade confirmations regulated by the Securities and Exchange Law under Article 41. It also allowed sending trade reports, using an average price with the conditions such as agreement of customers, under the Ordinance of the Cabinet Office on securities companies. This amendment made it possible for securities companies to send trade reports using average price to their customers in the electronic or magnetic form through PSMS.

G. Connecting to Japan Government Bond Clearing Corporation

Since May 2005, the Japan Government Bond Clearing Corporation (JGBCC, currently known as JSCC) started the clearing business for Japanese Government Bonds (JGBs). At the same time, PSMS linked data to the JGBCC system. The matched trade report data in JGBs linked to JGBCC set in PSMS is automatically transmitted to JGBCC system; PSMS receives data generated by the system such as credit approval status, netting result, among others, and sends these data to the participants.

II. Domestic Transactions

A. Scope of Services

PSMS was developed to perform the post-trade procedure, mainly for institutional investors; thus, it covers both transaction types on the buy-side, consisting of investment managers (investment trust management companies and/or investment advisory companies) and trust banks, which perform matching for specified money trust transactions, and another buy-side consisting of institutional investors, such as life or non-life insurance companies and trust banks, which perform matching for their own transactions, known as the Proper Type. Further, the former buy side type can be categorized into three sub-types based on the difference of data-transmission method between the investment managers and the trust banks: (i) Three-Party Center Matching Type (without using Investment Instruction Distribution Service), (ii) Three-Party Center Matching Type (using Investment Instruction Distribution Service), and (iii) Investment Instruction Support Unsubscribed. As far as bonds are concerned, PSMS provides two more transaction types: Through Type and Two-Party Center Matching. Under the Through Type, PSMS is not used for matching investment instruction data and trade report data while the Two-Party Center Matching involves two parties confirming the result of a bilateral trade.

(i) **Three-Party Center Matching Type (using Investment Instruction Distribution Service).** This type does not receive Investment Instruction Data from investment managers, but PSMS, on their behalf, generates Investment Instruction Data based on Trade Report Data sent from the securities companies and transmits the data to the investment managers. After checking the contents of the data, investment managers send it back to PSMS as Investment Instruction Data. Investment managers are able to replace the Notice of Execution by fax from securities companies by electronic data transmission.

(ii) **Investment Instruction Support Unsubscribed Type.** This type is used when investment managers do not participate in PSMS and send Investment Instruction Data (or Investment Instruction Statement) to trust banks by some other means. In this case, trust banks receive only Trade Report Data sent by securities companies via PSMS, match Trade Report Data internally with Investment Instruction Data (or Investment Instruction Statement) received by some other systems or methods, and send the Trade Report Affirmation Data to PSMS.

(iii) Through Type. This type is used when PSMS is not used for matching investment instruction data and trade report data. Investment instruction data from investment managers and trade report data from brokers or dealers are transmitted to trust banks, respectively. In this case, the trust banks match these two data internally and send the Trade Report Affirmation Data to PSMS.

(iv) Proper Type. This type is used by the buy-side consisting of institutional investors, such as life or non-life insurance companies or trust banks who perform investments and settlement for their own transactions. As the party in the transaction in this case is only one, the matching process becomes simpler than specified money trust transactions, eliminating the transmission or receipt of Investment Instruction Data.

(v) Two-Party Center Matching Type. This type is used when two parties confirm the result of a bilateral trade, and both the sell side and buy side send the trade report data to PSMS. PSMS executes the matching of trade report data from the sell side and the buy side and immediately transmits the Notice Data of Trade Matching Status.

B. Outline of Matching Process

The matching process for the Three-Party Center Matching Type (without using Investment Instruction Distribution Service) is described below.

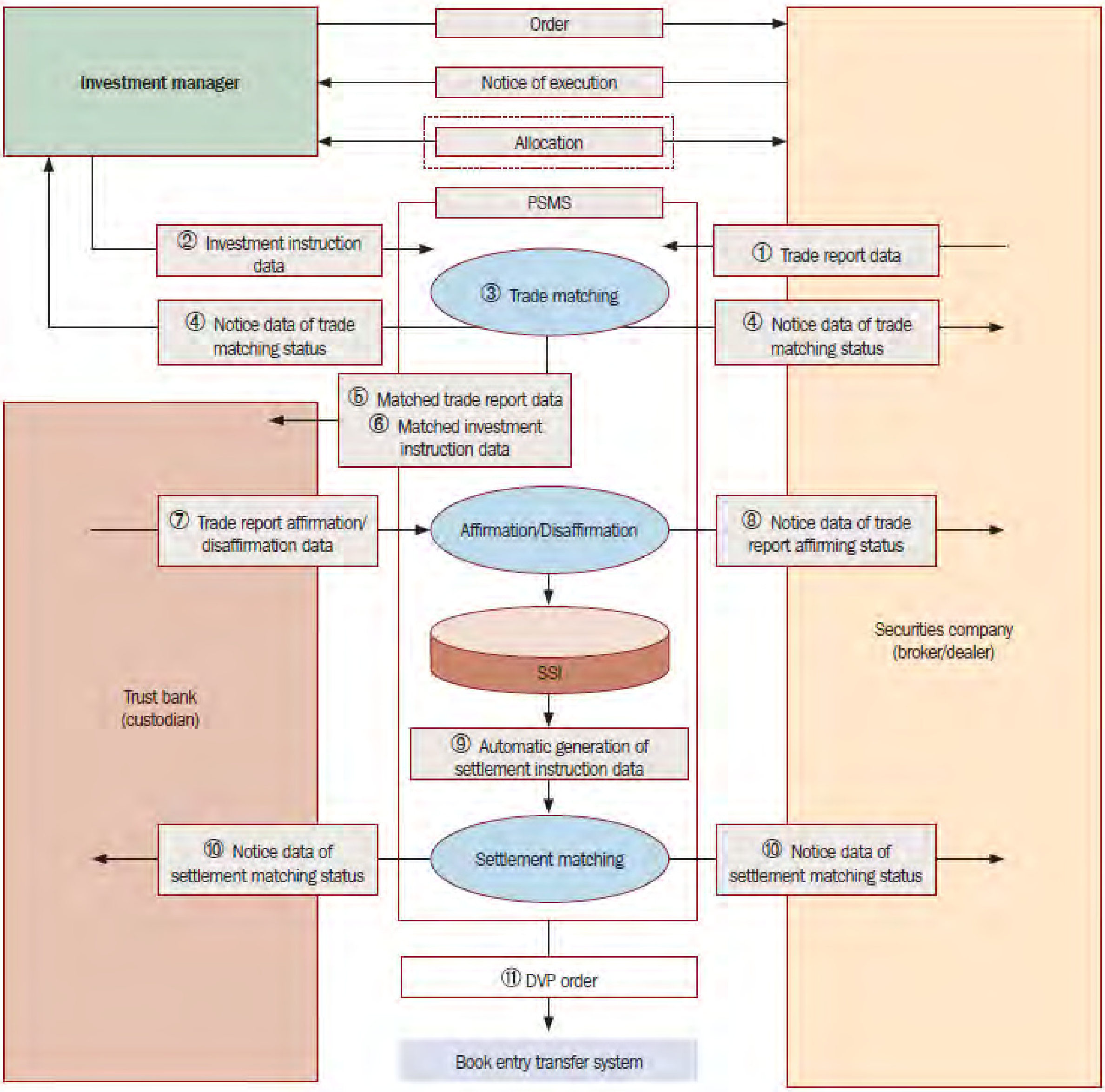
(i) Transmission of Trade Report Data and Investment Instruction Data. As stated above, the Order from investment managers to securities companies, the Notice of Execution from securities companies to investment managers, and the allocation between investment managers and securities companies are beyond the scope of services. Service starts from the transmission of Trade Report Data from securities companies and Investment Instruction Data from investment managers. The data syntax used for Trade Report Data is MT515 of ISO15022 and that for Investment Instruction Data is MT541/543 (Buy/Sell) **(Figure JP11 ① and ②)**.

(ii) Matching of Trade Report Data and Investment Instruction Data (Trade Matching) (Figure JP11③**)**. When the Trade Report Data and Investment Instruction Data are received, PSMS searches for the data to be matched in accordance with the matching logic. When the data to be matched are specified, the matching procedure takes place and the Notice Data of Trade Matching Status (MT509) are transmitted to the investment manager and the securities company (originators of matching data) in real-time, together with the status information of Matched or Unmatched **(Figure JP11 ④)**. In case the status information is Unmatched, the reason for discrepancy and details of counterpart for unmatched item will be transmitted.

(iii) Transmission of Trade Report Data and Investment Instruction Data to Trust Banks and Trade Report Affirmation or Disaffirmation Data (Figure JP11 ⑤, ⑥, ⑦, and ⑧). When the data is matched, the Trade Report Data and Investment Instruction Data are immediately transmitted to the trust banks **(Figure JP11 ⑤ and ⑥)**. The trust banks then confirm the details of data and send out the Trade Report Affirmation or Disaffirmation Data (Affirmed or Disaffirmed, MT517 **(Figure JP11 ⑦)**. Upon receipt of such data, PSMS transmits the Notice Data of Trade Report Affirming Status to the securities companies (MT509) **(Figure JP11 ⑧)**. In case the status indicates Disaffirmed by the trust banks, securities companies (and/or investment managers) cancel the previously sent Trade Report Data (and/or Investment Instruction Data) and resend the corrected Trade Report Data (and/or Investment Instruction Data).[8]

[8] As ISO15022 does not have the function to correct data elements, or the re-submission of corrected specific element is not available, the cancellation of all elements of previously sent data and re-entry of the corrected data have to be transmitted.

Figure JP11: Domestic Transactions–Three-Party Center Matching Type



DVP = delivery versus payment; PSMS = Pre-Settlement Matching System; SSI = Standing Settlement Instruction

Source: Japan Securities Depository Center, Inc.

(iv) **Generation of Settlement Instruction Data (Figure JP11 ⑨ and ⑩).** When a Trade Report Affirmation or Disaffirmation Data sent by trust banks carries the Affirmed flag, the process moves to the generation of settlement instruction data. To realize the straight-through nature of the process, PSMS provides the Standing Settlement Instruction (SSI) database to register settlement conditions such as key account information for all trading parties. By using this database, PSMS automatically generates and transmits Settlement Instruction Data to the settlement matching unit, and eliminates manual efforts of creation and transmission of the settlement instruction data by trust banks and securities companies **(Figure JP11 ⑨)**. Then, the Notice of Settlement Matching Status Data (MT548) with Matched status will be sent to both parties **(Figure JP11 ⑩)**.

(v) **Generation of Delivery-versus-Payment Order**. When Settlement Instruction Data carrying a LINK/DVP is matching, PSMS immediately prepares a Delivery-versus-Payment (DVP) Order from the matched settlement instruction data of both deliverer and receiver and transmits the order to the Book-Entry Transfer System **(Figure JP11)**.

III. Non-Residents Transactions

A. Scope of Services

In case of non-resident transactions, trade matching is not performed, but matching of Settlement Instruction Data sent from settlement agents such as banks and securities companies who perform custody operations for Japanese securities traded by non-residents, is utilized **(Figure JP12)**.

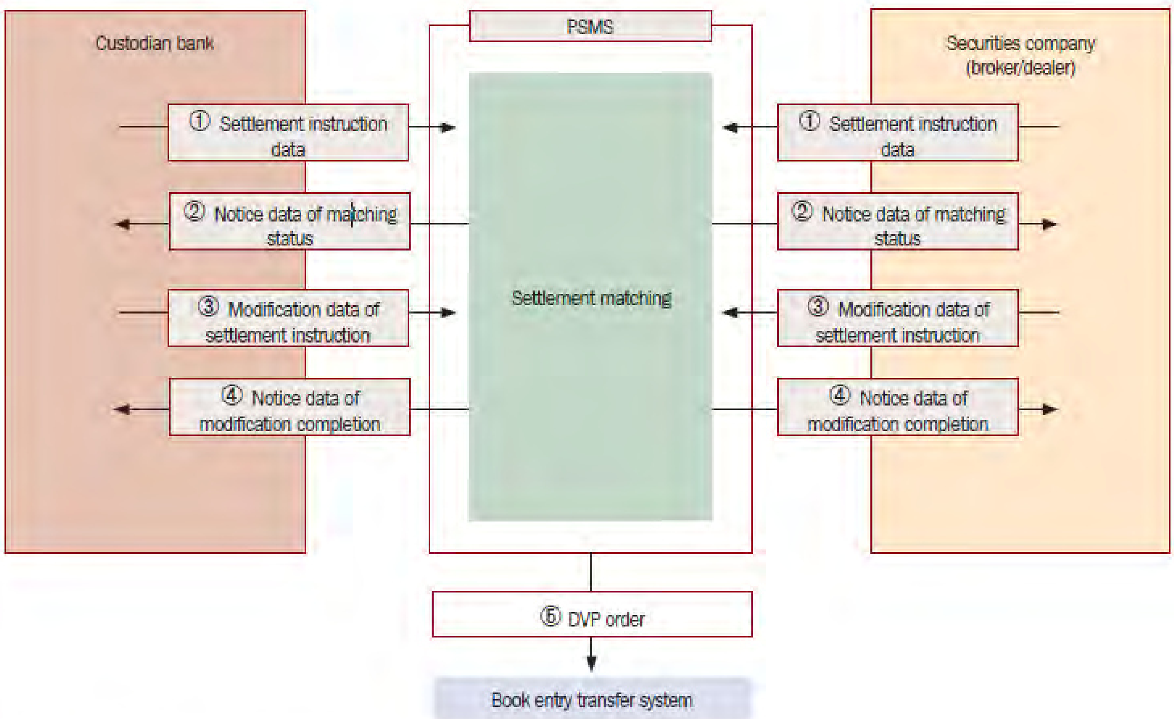
B. Outline of the Matching Process

(i) **Transmission of Settlement Instruction Data or Notice Data of Settlement Matching Status (Figure JP12 ① and ②).** When Settlement Instruction Data (MT540 to 543) are received from settlement agents, such as banks and securities companies who perform custody operations **(Figure JP12 ①)**, PSMS searches for the data to be matched in accordance with the matching logic. When the data to be matched are specified, the matching procedure takes place and Notice Data of Settlement Matching Status (MT548) are transmitted to both the deliverer and receiver in real-time with the following corresponding status: Unmatched when there is one or more unmatched items; Matched (settlement not executable) when all items are matched but with Release Flag, which carries the information whether the settlement is executable or not, on either deliverer or receiver side stays Release Not Executable; or Matched (settlement executable on settlement date) when all items are matched and Release Flags on both sides stay Release Executable **(Figure JP12 ②)**.

(ii) **Transmission of Settlement Instruction Modification Data or Notice Data of Settlement Instruction Modification Completion Data (Figure JP12 ③ and ④).** When the Release Flag in the Settlement Instruction Data states Release Not Executable, settlement agents resend the correction data (MT599) to change the Release Flag to Release Executable after checking the balance of securities or funds, which caused the delivery to be suspended, and making the delivery to be executable **(Figure JP12 ③)**. When the modified data are received, PSMS rewrites the Release Flag of Settlement Instruction Data already recorded, and transmits the modification completion data (MT548 or 578) with the corrected status to both deliverer and receiver **(Figure JP12 ④)**. It should be noted that the modification data could be issued not only to change the Release Flag but to correct the settlement amount.

(iii) **Generation of DVP Order (Figure JP12 ⑤)**. When the Settlement Instruction Data carrying LINK/DVP is matching, PSMS immediately generates a DVP Order from the matched settlement instruction data of both deliverer and receiver and transmits the order to the Book-Entry Transfer System **(Figure JP12 ⑤)**.

Figure JP12: Non-Residents' Transactions



DVP = delivery versus payment; PSMS = Pre-Settlement Matching System

Source: Japan Securities Depository Center, Inc.

IV. Network and Connection with Users

A. User Connection Format

The formats of connection to PSMS by users can be in one of two ways. The first is to connect the user's own system directly (Central Processing Unit Direct Connection) to PSMS and the other is to use a personal computer with a web browser as a terminal of PSMS (Terminal Connection). The former can utilize either of two types of processing: online real-time processing or batch processing by file transfer. For online real-time processing and batch processing by file transfer, users can choose either connect their own systems to PSMS, or have the systems of their computer service subcontractors connected to PSMS. In the case of online real-time processing, dedicated lines are commonly used; for file transfer and terminal connection, Integrated Services Digital Network lines are used.

B. Terminal Functions

For users who have large volume of trades, direct online real-time connection of their systems to PSMS is efficient in view of the possibility to further shorten the settlement cycle in the future. However, for users who do not have large volume of trades and wish to curtail the initial investment for system development, Terminal Connection to PSMS is convenient. To utilize the services provided, users only need to prepare a PC with certain specifications and a web browser, and log on to the web server of PSMS. The transmission or receipt of data explained above is possible by means of this terminal function. For data transmission, users may choose either key-input through the form on-browser or comma separated value file transfer.

Appendix 2: OTC Market DVP Transactions of Government Bonds

JSDA sets out the guideline concerning fails for government bonds. Portions of this Appendix were taken from the Japanese Government Securities Guidelines for Real-Time Gross Settlement published by JSDA.

1. Definition of a Fail

A Fail means a situation whereby a party receiving government securities has not received delivery of the relevant securities from the delivering party after the end of the scheduled settlement date.

2. Good-Faith Efforts to Resolve Fails

Fails are not recommendable situations and the frequent occurrence thereof may hinder the primary objective of facilitating smooth transactions and securing market liquidity. Market participants therefore should avoid fails as much as possible Upon the unavoidable occurrence of fails, parties to the relevant transaction will be required to deal with such situations in good faith to resolve the fail as soon as possible. In addition, upon the occurrence of a fail, the delivering party who caused the fail shall endeavor to give the receiving party who suffered from the fail an explanation about the situation leading to the fail, if so requested by the receiving party.

3. Conditions to Guidelines Concerning Fails

(i) Market participants should note that in view of the policy regarding costs incurred under fails as described below, they can treat situations as Fails only with respect to the DVP transactions (including the settlements of government securities against the payments of funds on the same date, in the cases where an agreement to that effect has been made between the parties to the transaction while their mutual claims and debts being preserved explicitly). DVP transactions include overseas DVP settlements, such as those settled in Euroclear or Clearstream.

(ii) Transactions subject to the guidelines concerning fails are purchase and sale transactions, and repo transactions; that is, the starting legs of transactions and the closing legs of transactions in conditional purchase and sale transactions, and the lending and returning in lending transactions, which are hereafter referred to as being the same.

(iii) Delivery in the purchase and sale transactions and the repo transactions shall be conducted according to the manner stipulated in Article 4 of the Regulations Concerning Handling of Short Sale and Lending Transaction of Bonds in the case of short sale in the purchase and sale transactions, and according to the manner stipulated in Article 11 of the Regulations Concerning Handling of Short Sale and Lending Transaction of Bonds or Article 13 of the Regulations Concerning Handling of Conditional Sale and Purchase of Bonds, etc. in the case of repo transactions.

(iv) Market participants shall not exercise the right of cancellation on the grounds of the occurrence of fails.

(v) It is not acceptable that parties receiving government securities leave settlements incomplete as a result of a shortage of funds.

(vi) Market participants should mutually deal on their own with all settlements remaining incomplete other than the fails prescribed in these guidelines.

4. Policy Regarding Costs Incurred under Fails

(i) A party causing a fail will, since it is unable to receive funds payable by the party receiving government securities, have to incur some funding costs for holding the government securities and will further have to give up profit that could be earned by investing such funds. Moreover, accrued interest to be received by such failing party will only be for the period up to the scheduled settlement date.

(ii) A party suffering from a fail will, contrary to the above, be able to receive interest accrued from the scheduled settlement date to the date of actual receipt of the government securities and will further also be entitled to invest funds in hand retained due to the uncompleted settlement.

(iii) Under the circumstances of a low interest rate, the economic rationality stated in (i) and (ii) may not work effectively, and there may be a concern about frequent occurrence of fails. Therefore, the receiving party suffering from a fail will be entitled to claim a fails charge (a certain monetary burden imposed on the delivering party causing a fail, hereinafter meaning the same) against the delivering party causing the fail.

(iv) Therefore, no specific penal provisions have been established for fails, and no payments of default interest will be required.

5. Handling of Fails Charges

(i) Preparations before the introduction of fails charges, and the practice concerning calculation and claim, payment and receipt, and other operations of fails charges shall be conducted according to the Practical Guidelines for Handling of Fails Charges (hereinafter referred to as Guidelines for Fails Charges), which is established separately.

(ii) Market participants can claim fails charges in connection with all transactions on a DVP basis.

(iii) In introducing fails charges, market participants shall note that a prior agreement shall be made between the parties to the transaction by giving a prior notice to their counterparties as prescribed in the Guidelines for Fails Charges or by any other means.

(iv) Fails charges shall be calculated according to the following formula (See the Guidelines for Fails Charges for the definitions of terms and other explanations used in the calculation formula):

$$\sum 1/365 \times \max(3\% - \text{Reference rate}, 0) \times \text{Amount of funds delivered Fail period}$$

6. Applications to Fails Based on Cut-off time

(i) Any transactions that have not been completed with regard to transmissions of securities transfer messages at the point of cut-off time shall be defined as fails unless it is agreed in advance to extend the delivery deadline by the parties involved. In case a prior agreement has been made between the parties, market participants can treat any transaction as being in a settlement fail even before the cut-off time if the transaction has not been completed with regard to transmissions of securities transfer message. In addition, even in the case of making prior agreements for extended delivery, market participants should note that they have to treat transactions remaining unsettled by the closing time of the BOJ-NET JGB Services as fails.

(ii) Market participants to whom the provision of (i) applies should deal with such situations in good faith to avoid the frequent occurrence of fails.

7. Guidelines for Payments and Receipts in where Coupon Payment and/or Redemption Occur Prior to Resolution of Fails

(i) In the case where a coupon has been paid prior to resolution of a fail, the receiving party shall claim against the delivering party for an amount equivalent to the coupon payment receivable by the receiving party. And the delivering party shall pay the amount to the receiving party.

(ii) Where the securities are redeemed prior to resolution of a fail, the receiving party shall claim against the delivering party for an amount equivalent to the coupon payment and redemption amount receivable by the receiving party. And the delivering party should then pay such amount to the receiving party on behalf of receipt of the original contract amount for the relevant securities. In the case where the securities are redeemed prior to resolution of fails, market participants should note that the contract between the parties is regarded as completed by this payment.

Cambodia (KH)

Bond Market Infrastructure

Overview of Bond Market

The Government of Cambodia has undertaken comprehensive economic and structural reforms, beginning in 2001 when it adopted a Financial Sector Blueprint for 2001–10. The strategy outlines a sequence of policy reforms, including plans for the establishment of a securities exchange in 2007, and the legal and regulatory framework needed for market infrastructure. It also outlines the development of money market instruments, treasury bills, and the need to establish a bond market. Currently, Cambodia is in the second phase of implementation of the Financial Sector Blueprint.

The Ministry of Economy and Finance (MEF), through the National Bank of Cambodia (NBC), has issued treasury bills, recapitalization bonds, and certificates of deposit. No negotiable instruments has been issued yet. The Law on Government Securities and Law on Issuance and Trading of Non-Government Securities were adopted in 2007, and have both been enforced.

Regarding possible future market infrastructure, please refer to **Part 3 KH01 (Government Bond Market Infrastructure Diagram)** and **Part 3 KH02 (Corporate Bond Market Infrastructure Diagram).**

Description of Related Organizations

Ministry of Economy and Finance (MEF)
MEF is delegated by the government to perform the mission of guidance and administration of the economic and financial policies of Cambodia, including

(i) participate in the organization, implementation, and monitoring of the performance of economic and financial policies of the Royal Government;
(ii) administer and coordinate the structural reform of the economic and financial institutions;
(iii) promote good governance as to the administrative aspect of economy and public finance;
(iv) allocate and re-allocate national revenues through the collection of income and programming and budgeting of public expenses;
(v) establish a financial system;
(vi) establish a national, uniform financial system and ensure a proper application of the law on the financial system and finance law, as well as other relevant laws and regulations;

(vii) prepare draft laws and regulations, either of annual or permanent nature, for macroeconomic and financial management;
(viii) prepare and administer the national budget;
(ix) prepare and implement the policy of the national revenue budget;
(x) collect tax revenues and non-tax revenues, and deposit them in the public accounts; prepare balance sheets and statements of accounts for state financial operations;
(xi) control and endorse the expenses made by the ministry and other public institutions;
(xii) administer public properties;
(xiii) analyze, monitor, and predict economic situations in the short-, medium- and long-term, and formulate measures for regulating and improving economic administration;
(xiv) participate in developing, administering, and controlling industrial and financial activities, including insurance, market, bonds, lotto games, lotteries, casinos, retirement funds, and other financial reserves;
(xv) cooperate with other relevant ministries and institutions for management purposes and participate in the organization and implementation of the Royal Government's strategic policy in terms of international economic and financial cooperation, and the integration of the Cambodia economy into the world economy, in particular economic integration with the Association of Southeast Asian Nations (ASEAN);
(xvi) participate in lobbying for aid and the preparation of plans for borrowing and payment of foreign loans, and follow-up and monitor the performance of such plans;
(xvii) manage and control public procurement transactions of ministries and institutions, provinces and municipalities, and state-managed and autonomous institutions;
(xviii) participate in the formulation of policy and management of investments;
(xix) undertake inspection tasks on public finance; and
(xx) conduct regular training for improvement of economic and financial skills and management of public property for ministerial officials and relevant institutions.

Securities and Exchange Commission of Cambodia (SECC)
SECC is established under the Law on The Issuance and Trading of Non-Government Securities (Securities Law). SECC regulates the securities industry in Cambodia to contribute to socio-economic development through capital mobilization from securities investors to meet the demand for financing.

The mission of SECC includes

(i) develop and maintain the confidence of public investors in Cambodia by protecting their lawful rights and ensuring that the offer, issue, purchase, and sale of securities is carried out in a fair and orderly manner;
(ii) promote the effective regulation, efficiency, and orderly development of the securities markets;
(iii) encourage a variety of saving tools through the buying of securities and other financial instruments;
(iv) encourage foreign investment and participation in the securities markets in Cambodia; and
(vi) assist in facilitating the privatization of state-owned enterprises in Cambodia.

National Bank of Cambodia (NBC)
NBC is the central bank of Cambodia. The bank was established in 1954. NBC is referred to as the Government Securities Management Agency, whose authority is delegated by MEF, and it deals with operational matters related to government securities.

Cambodia Securities Exchange (CSX)
In March 2009, the government, represented by MEF and Korea Exchange (KRX), signed a joint-venture agreement to establish CSX as a public enterprise in accordance with the Law on the General Statutes of Public Enterprises. Cambodia Securities Exchange was then incorporated on 23 February 2010. In accordance with the agreement, CSX was capitalized by both parties, with MEF owning 55% of the registered capital and KRX the remaining 45%. In accordance with the Securities Law, CSX had been granted approval to function as market operator, clearing and settlement facility operator, and depository operator. CSX's primary mandate is to establish and operate a securities market, a clearing and settlement facility, and a depository, in accordance with the

Law on Issuance and Trading of Non-Government Securities and its subsequent regulations. For information about securities exchange, please refer to **Appendix 1**.

Overview of Government Bonds

Trading

Over-the-Counter Trading
There is no government bond market in Cambodia.

Exchange Trading
There is no government bond market in Cambodia. However, government securities trading in the secondary market will be under the regulation and supervision of SECC.

Clearing and Central Counterparty

There is no clearing and central counterparty for government bonds in Cambodia.

Bond Settlement

The Government of Cambodia has issued government bonds before when it implemented a book-entry system, though the system does not operate now. Regarding the book-entry system, please refer to **Appendix 2.**

Cash Settlement

Government bonds were previously settled through the account in NBC, although there are currently no transactions.

Overview of Corporate Bonds

There is no corporate bond market in Cambodia. Though corporate bonds are not yet either issued or traded, Cambodia already has laws and regulations to guide and develop the bond market, and the issuance and trading of debt securities will be under the regulation and supervision of SECC.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

There is no government bond market in Cambodia.

Interest Payment and Redemption of Corporate Bonds

There is no corporate bond market in Cambodia

Typical Business Flows

Cambodia does not have a bond market.

DVP Flow of Government Bonds for Domestic Trade

There is no government bond market in Cambodia.

For information about flows within the book-entry system, please refer to **Part 3 KH03 (Government Bond Transaction Flow for Domestic Flow)**.

DVP Flow of Corporate Bonds for Domestic Trades

There is no corporate bond market in Cambodia.

For reference, please refer to **Part 3 KH04 (Corporate Bond Transaction Flow for Domestic Flow)**.

DVP Flow of Cross-Border Bond Transactions

There are no cross-border bond transactions in Cambodia.

Interest Payment and Redemption of Government Bonds

There is no government bond market in Cambodia.

For information about interest payment and redemption with BES, please refer to **Part 3 KH05 (Interest Payment Flow of Government Bond)** and **Part 3 KH06 (Redemption Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

There is no corporate bond market in Cambodia.

Message Standard

There is no rule about message standards. Message standards may also accommodate the standards for ASEAN Trading Linkages.

Market Practices

Settlement Cycle

As the bond market does not yet exist in Cambodia, there is no settlement cycle.

Other Market Practices

Market practices such as operating hours (opening time, cut-off time, and closing time) and fail rules are to be discussed.

Numbering and Coding

Numbering and Coding for the OTC Market

Securities Numbering
Current securities numbering and use of International Securities Identification Number (ISIN) are to be discussed. A National Numbering Agency (NNA) is also to be identified.

Financial Institution Identification
Current financial institution identification and use of the international Business Identifier Code (BIC) is to be discussed.

Securities Account
Current securities account structure is to be discussed.

Cash Account
Current cash account structure is to be discussed.

Character Code and Language
Current character code set and language for payment system are to be discussed.

Medium- to Long-Term Strategies

The Government of Cambodia has been making efforts to develop financial sector infrastructures, including bond markets. Current infrastructures may be utilized where possible. Also, possible future best practices that are applicable in Cambodia may be included as much as possible since bond markets and their infrastructures are not fully developed in Cambodia yet.

Medium- to long-term strategies are based on the Financial Sector Development Strategy 2011–20.

Development of the Government Bond Market and Operation of a Government Securities Market

(i) **Short-Term (2011–14):** Develop the government securities market.
- Develop the legal and regulatory framework to support the issuance and trading of government securities.
- Consider issuing short-term treasury bills denominated in riel based on a pre-determined borrowing program with NBC to determine the timing of market distribution for investment and reserve purposes.
- Develop bidding procedures and an auction system for issuance of government securities.
- Establish a system for accreditation of primary market dealers in government securities.

(ii) **Medium-Term (2014–17):** Monitor and strengthen the government securities market's performance.
- Review performance of primary market dealers and develop performance-based accreditation procedures on the basis of incentives and penalties.
- Consider issuing treasury securities with maturities of more than 1 year.

(iii) **Long-Term (2017–20):** Deepen the development of the government securities market.
- Consider issuing government bonds.

Support for infrastructure

(i) **Short Term (2011–14)**
- SECC is the lead agency in the establishment of support infrastructure for securities market depositories and securities clearing and settlement facilities, and payment system linkups with national payment systems, with the participation of the Ministry of Economy and Finance and the National Bank of Cambodia.

(ii) **Medium Term (2014–17)**
- Conduct due diligence on operating systems to ensure they are operating smoothly and safely.

(iii) **Long Term (2017–20)**
- Review and upgrade as needed depending upon market developments.

Compliance with Principles for Financial Market Infrastructures (PFMI)

(i) **Short-Term (2011–14)**
- Conduct a self-assessment.

(ii) **Medium-Term (2014–17)**
- Include review system in the next Financial Sector Assessment Program (FSAP).

(ii) **Long-Term (2017–20)**
- Review regulatory framework and SECC structure to ensure they remain relevant to market conditions.

Secondary Market Regulation

(i) **Short-Term (2011–14)**
- The Securities Market Rule, Securities Clearing and Settlement Rule, Securities Depository Rule, Listing Rule, and Membership Rule of the Cambodia Securities Exchange (CSX) were approved by the SECC in 2011.
- Introduce rules used for licensing/authorizing/accrediting examinations for all securities market participants including fit and proper testing.

(ii) **Medium-Term (2014–17)**
- Oversee renewal of licenses to all securities market participants

Market Mechanism and Instruments

(i) **Short-Term (2011–14)**
- Consider the procedures to allow securities borrowing and lending.
- Conduct feasibility study for setting up a securities financing mechanism.

- Conduct feasibility study for setting up a sovereign wealth fund.

(ii) **Medium-Term (2014–17)**
- If feasible, develop securities borrowing and lending mechanism.
- If feasible, set up a securities finance corporation.
- If feasible, set up a sovereign wealth fund.

(iii) **Long-Term (2017–20)**
- Implement securities borrowing and lending mechanism.

Information Technology

(i) **Short-Term (2011–14)**
- Consider IT systems for information disclosure.

(ii) **Medium-Term (2014–17)**
- Consider IT systems for surveillance of securities market operations.

(iii) **Long-Term (2017–20)**
- Develop IT systems for information disclosure and surveillance of securities market operations.

Corporate Bond Market Development

(i) **Short-Term (2011–14)**
- Establish legal and regulatory framework for the development of a corporate bond market.

(ii) **Medium-Term (2014–17)**
- Implement regulations for the development of a corporate bond market.

(iii) **Long-Term (2017–20)**
- Review the impact of the regulations on market development and develop a broad corporate bond market.

Payment System

(i) **Short-Term (2011–14)**
- Commission "full solution" phase of the national payment system, including electronic transfers to effect DVP, ACH implementation, centralized settlement, defining settlement cash, introduction of direct credit operation, development of money market operations for US dollar–riel traders cash settlement, shared switch implementation, intraday settlement, and introduction of direct debit operation.
- Enact the law on the national payment system.
- Harmonize payment system arrangements with the SECC and sign the MOU.

(ii) **Medium-Term (2014–17)**
- Consider the establishment of a Real-Time Gross Settlement (RTGS) system depending on market developments.
- Adopt the sub-decree and accompanying regulations for implementing the law on the national payment system.
- Prepare the oversight principles, policies, and guidelines based on the BIS Core Principles for Systematically Important Payment Systems (SIPS).
- Conduct self-assessment against BIS Core Principles of SIPS.
- Consider SWIFT connectivity for high value transactions.

(iii) **Long-Term (2017–20)**
- Establish RTGS if the market demands.
- Extend payment services to all parts of the country and encourage greater use of electronic payments to replace cash, including the use of a network of third-party service providers, mobile phone banking services, prepaid cards, and SMS billing arrangements.
- Arrange to join the ASEAN Payment System Network.

Appendix 1 Cambodia Securities Exchange

Cambodia launched its stock exchange in 2011. The Cambodia Securities Exchange (CSX) was established as a joint venture between the Cambodian Ministry of Economy and Finance and Korea Exchange.

Overview of Securities Trade and Settlement
A secondary market has not fully developed yet. The mechanism for clearing and settlement from trade to settlement is shown in Figure KH01.

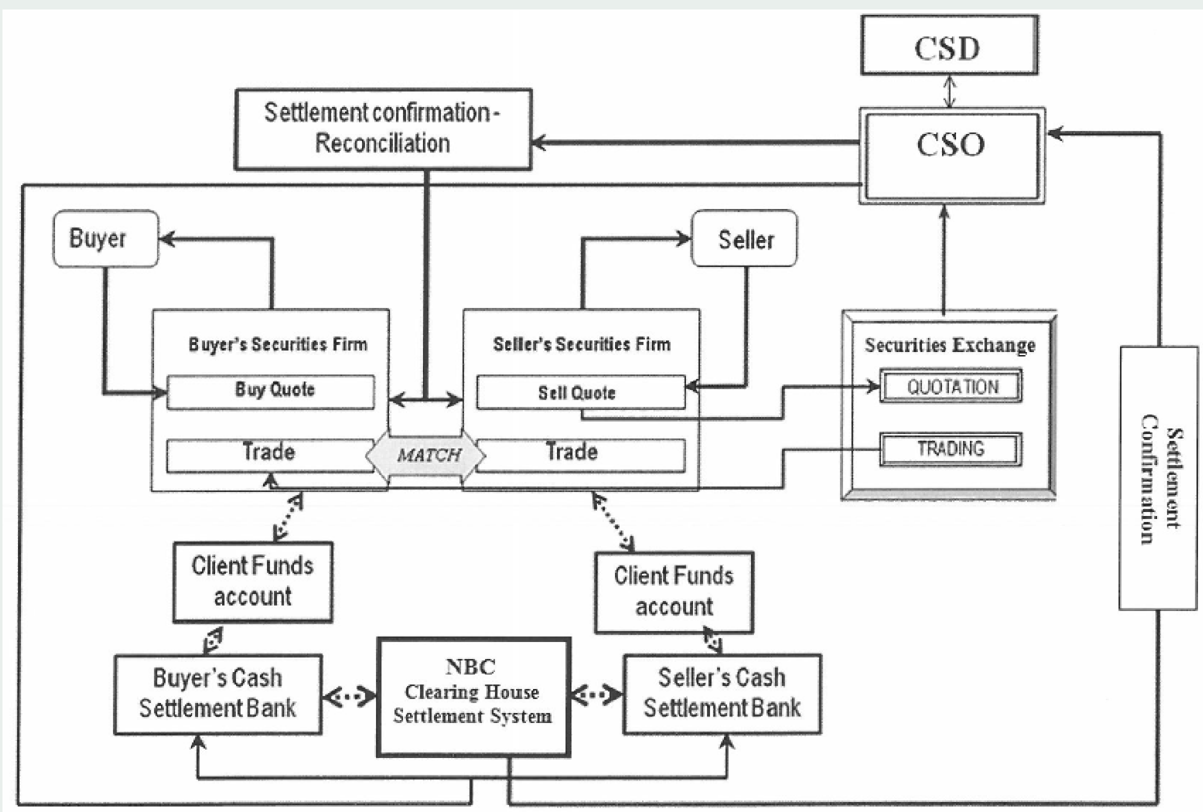
1.1 **Trading**
Over-the-Counter Market
There is no over-the-counter (OTC) trading.

Exchange Market
Currently, there is only one company listed on CSX: Phnom Penh Water Supply Authority. Its shares are traded in the secondary market.

1.2 **Clearing and Central Counterparty**
CSX performs as the clearing and central counterparty (CCP) in the Cambodia Securities Market.

Securities Settlement
CSX performs as the central securities depository (CSD). The settlement method of CSX is the Bank for International Settlements (BIS) Delivery-versus-Payment (DVP) Model 3, which is the process of delivery of securities simultaneously with payment on a net basis (net stock, net payment). It occurs at the end of the processing cycle. Settlement time is 8:30 on T+2.

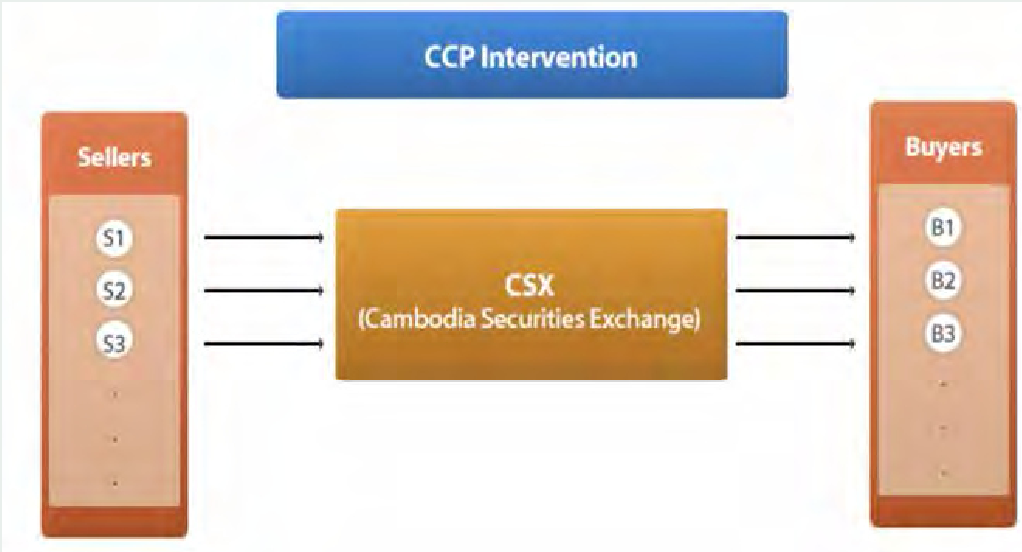
Figure KH01: Mechanism of Clearing and Settlement



- **Securities Exchange:** Operator of Securities Market
- **CSO:** Operator of a Clearing and Settlement Facility
- **CSD:** Cambodian Securities Depository
- **SFs** Licensed Securities Firms
- **CSAs** Cash Settlement Agents
- **NBC** National Bank of Cambodia

Source: Securities and Exchange Commission of Cambodia.

Figure KH02: CSX Clearing and Central Counterparty



CCP = Clearing and Central Counterparty.
Source: Cambodia Securities Exchange

The member shall transfer the securities and cash to be settled to the accounts of CSX before 8:30 on T+2, and CSX shall settle those securities and cash to the counterpart members after 8:30 on the same settlement date.

Cash Settlement

ACLEDA Bank Plc., Canadia Bank Plc., and the Bank for Investment and Development of Cambodia have been accredited as cash settlement agents by the Securities and Exchange Commission of Cambodia (SECC). Settlements between members and CSX are carried out through the three participating banks.

Market Practices

Settlement Cycle
Settlement shall be conducted 2 trading days after the securities-traded day (T+2). The closing day(s) will not be included in the trading days.

Operating hours
The operating hours of CSX are from 8:00 to 11:30, with trades executed six times a day: 9:00, 9:30, 10:00, 10:30, 11:00, and 11:30.

Appendix 2 Government Bond Procedure in Cambodia with Book-Entry System

There is currently no government bond market in Cambodia. The Government of Cambodia previously issued government bonds with maturities longer than 10 years, and it implemented a book-entry system, though the system no longer operates. A summary description of the former book-entry system is given below.

Book-Entry System
Overview of Book-Entry System
The Book-Entry System (BES) is a computerized registry for government bonds developed by the International Monetary Fund (IMF). It can process participant's details, auction outcomes, and secondary market transactions. BES also handles information on interest and redemption.

Registration of Participant with BES
Each commercial bank needs to create three accounts: securities account, customer account (one account for all customers of each bank that are trading on behalf of customers), and collateral account.

For a large non-bank corporation that intends to participate in bond auctions on a regular basis, a security account can be created, and a collateral account is also created when required.

Overview of Procedure

Auction (Bids)

All submissions for bond auctions must be made on a standard physical form issued by the National Bank of Cambodia (NBC). After all bid forms are validated, NBC enters all bid submissions in BES one time. Then, accepted bids are picked. The settlement date is 3 days (72 hours) after auction.

Sales and Transfers

In its roles as agent of the treasury, NBC provides a registry service to existing holders of government securities. The service includes the maintenance and update of ownership records.

The transfer forms for government securities must be completed and signed by both the sell side and buys side as the source for the data entry into BES. This form also allows the NBC to debit the buy side' clearing account and credit the sell side's clearing account by the agreed value of the transaction. NBC must check that the transfer form for government securities is correctly filled in.

There are three patterns mainly of sales and purchases in Cambodia: (i) between a bank and its customers, (ii) between two banks, and (iii) repo and reverse repo.

For sales and purchases between a bank and its customers, the bank's securities account and bank's customer account are involved. The bank's customer account is one separate account whose current balance can be monitored by NBC. From time to time, NBC requires a complete disclosure of a customer's particulars and the amount of securities held, the total of which must reconcile with the BES book-entry account held at NBC.

Interest Payment

All interest payments on bonds issued at face value with an annual rate of interest and a fixed maturity date are shown in BES. Interest can be paid to bond holders either ones or twice per year depending on the terms of issuance.

On the due date, NBC processes a fund transfer arising from interest payment by debiting a treasury account. NBC types and sends a letter to subscribers and also sends copies of an interest payment due report for to NBC's Internal Audit Department.

Redemption

At maturity, securities are repaid (bought back by the treasury) by debiting treasury accounts held at NBC in favor of the bond holder.

NBC processes funds transfer following a list of all current holders displayed in the system. Then, it sends copies of redemption to NBC's Internal Audit Department. Next, all records of redeemed securities are cleared out. Securities that have been redeemed should be kept in BES for at least 3 months before they are purged from the system.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Republic of Korea (KR)

Bond Market Infrastructure

Overview of Bond Market

The Korean bond market is comprised of the over-the-counter (OTC) market and the exchange market operated by Korea Exchange (KRX).

According to Asian Development Bank's (ADB) *AsianBondsOnline* website, the amount of local currency (LCY) government bonds outstanding in the Republic of Korea at the end of 1Q13 reached USD560.27 billion, while LCY corporate bonds totaled USD892.58 billion.

In the Republic of Korea, four types of bonds are traded: (i) Korea Treasury Bonds (KTBs), (ii) corporate bonds, (iii) commercial paper, and (iv) certificates of deposit (CDs). About 80% of bond trades are performed on the OTC market, whereas other bonds are traded on the exchange market. For trade matching, KRX executes matching in the exchange market and the Korean Securities Depository (KSD) executes it for trades in the OTC market. KRX is also designated to provide clearing services in the exchange market. For settlement, KSD is in charge of securities settlement for all kinds of bonds, while The Bank of Korea (BOK), as the central bank, is in charge of cash settlement.

Please refer to **Part 3 Figure KR01 (Government Bond Market Infrastructure Diagram)** and **Part 3 Figure KR02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Strategy and Finance (MOSF)
MOSF controls and directs the Korean financial industry through overall policy formation and implementation. It is primarily responsible for the establishment of economic and financial development policies.

Financial Supervisory Service (FSS)
FSS acts as the Financial Services Commission's (FSC) executive arm. The main objective of the FSS is to provide supervision and conduct examination and investigation of financial institutions to ensure sound and fair trading practices in the financial markets for the protection of investors.

The Bank of Korea (BOK)
BOK was created on 12 June 1950 under The Bank of Korea Act. BOK conducts the typical functions of a central bank.

Korea Exchange (KRX)
Three former exchanges in the Republic of Korea—Korea Stock Exchange (KSE), Korea Futures Exchange (KOFEX), and Korean Securities Dealers Automated Quotations (KOSDAQ) Market—were

merged into KRX effective 27 January 2005. KRX maintains a fair and orderly market for trading securities; it also regulates and supervises its member firms through the establishment of market operations rules.

Korea Securities Depository (KSD)
KSD was established in 1974 to act as the central depository of the Korean market. KSD is the single central securities depository (CSD) in the Republic of Korea. In 1994, KSD became a nonprofit organization and increased its base of shareholders. The shareholders of KSD are various market participants, KRX, banks, and other banking corporations.

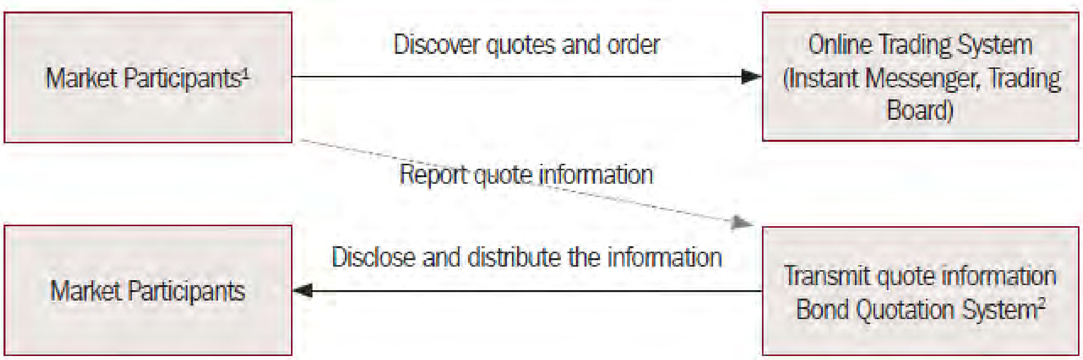
Korea Financial Investment Association (KOFIA)
KOFIA was launched on 4 February 2009 through the merger of three associations representing the securities, asset management, and futures industries, as set forth by the Financial Investment Services and Capital Markets Act (FISCMA), which took effect the same day. To provide transparent and accurate information to participants, KOFIA established FreeBond and manages the OTC market.

Overview of Government Bonds

Trading

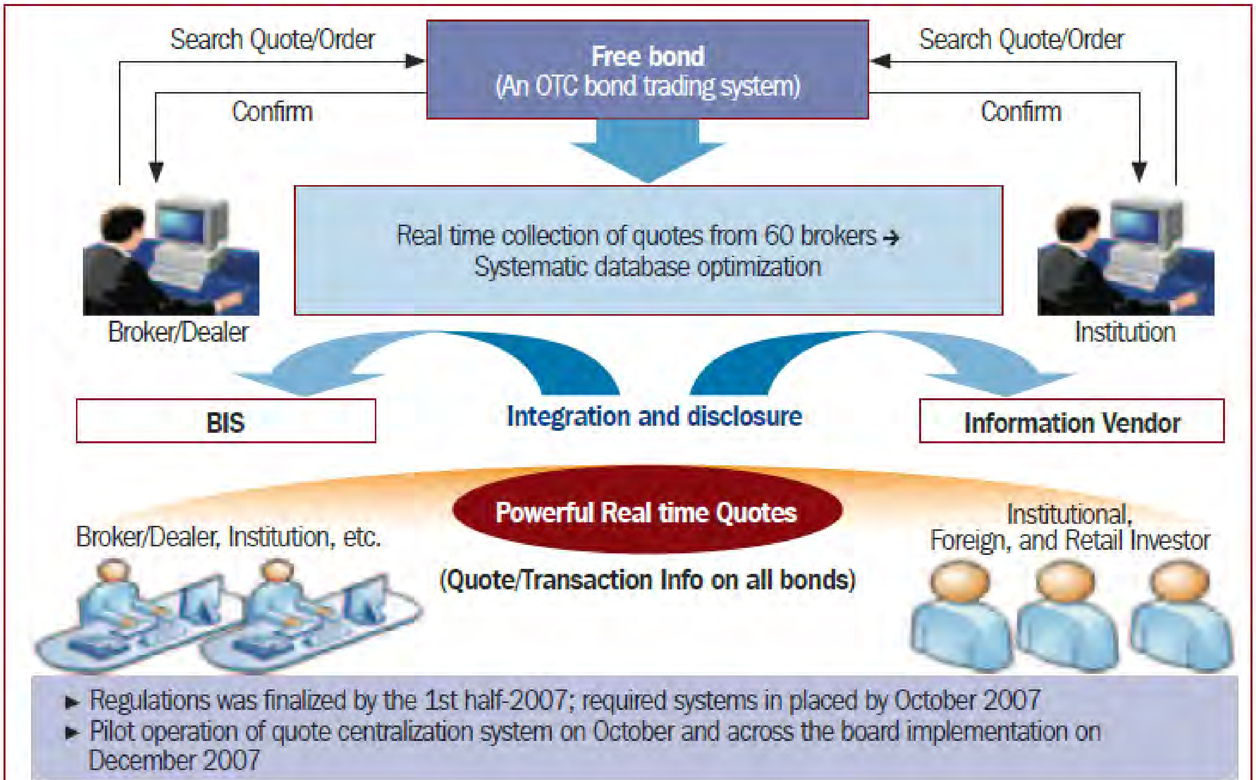
OTC Trading
In the Korean OTC market, the sell side and buy side trade bonds mostly via a private messenger and partly through FreeBond, which is run by KOFIA and enables financial investment firms and major market practitioners to search bid or ask prices for trading and intermediation in the OTC bond market. FreeBond also supports negotiations among trading counterparties. It consists of two components: Trading-Board (T-Board) and messenger. T-Board has many functions, such as searching bid prices, ordering, negotiating, confirming trades, providing real-time information on bid prices, and conducting analysis. Messenger actualizes one versus N-chatting, storing and using chatting frame layout, and chatting room services. The operations of FreeBond are illustrated in **Figure KR01**.

Figure KR01: Operation of FreeBond



1. Market participants discover bid or ask price on FreeBond and execute orders.
2. Quote information is transmitted to the Bond Quotation System (BQS).
Source: The Korea Financial Investment Association.

Figure KR02: Centralization and Disclosure of Over-the-Counter Quotations



BIS = Bond Information Service
Source: The Korea Financial Investment Association.

KOFIA is planning and working on adding matching services and linking FreeBond to the settlement system when related laws and regulations in the country change. The centralization and disclosure of OTC quotations is illustrated in **Figure KR02**.

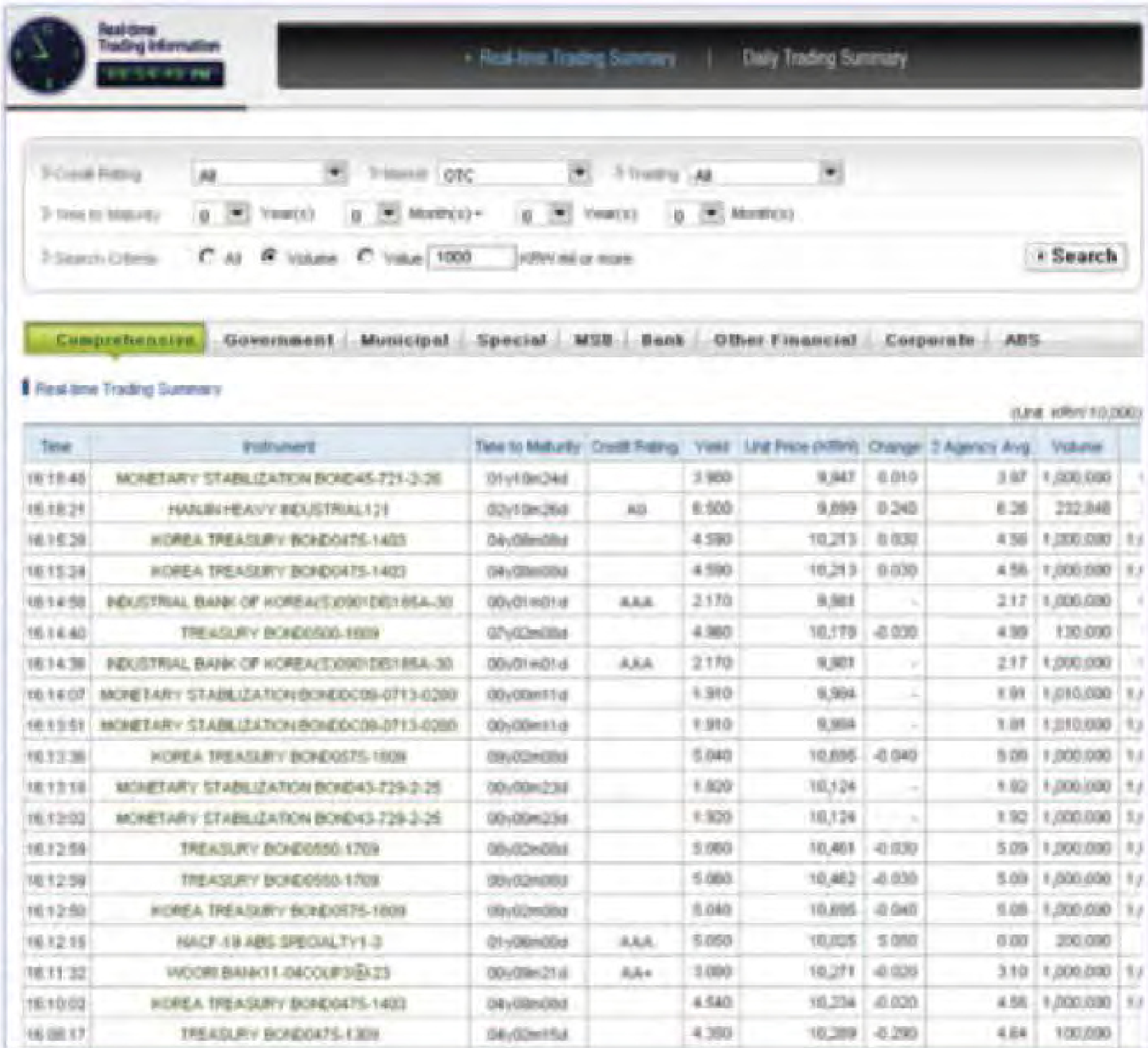
If the client is a foreign investor, the sell side and/ or the buy side of securities companies transfer order information to the FSS via the Foreign Investment Management System (FIMS). After receiving order information, FSS determines whether to accept or reject the order. If holding is enough, the FSS transfers order information to the sell side and/ or the buy side of securities companies and KRX.

A screen image of the Bond-Trade Report and Information Service (B-TRiS) is shown in **Figure KR03**.

A financial investment company engaging in bond trading shall report to KOFIA the details related to such trading within 15 minutes from the execution of the sales agreement, using B-TRiS to enhance transparency when trading or brokering bonds with investors in the OTC market. After reporting, KOFIA discloses this information on its website.

Trade matching for OTC bond transactions can be done through KSD's Bond Institutional Settlement System (**Figure KR04**). However, the Bond Institutional Settlement System performs matching in the course of processing a series of bond settlement operations consisting of entering trade data, trade matching, generating settlement data, and delivery-versus-payment (DVP) settlement (delivery of securities and cash). It means the system is not exclusively for trade matching. In addition, matching is

Figure KR03: Screen Image of the Bond-Trade Report and Information Service



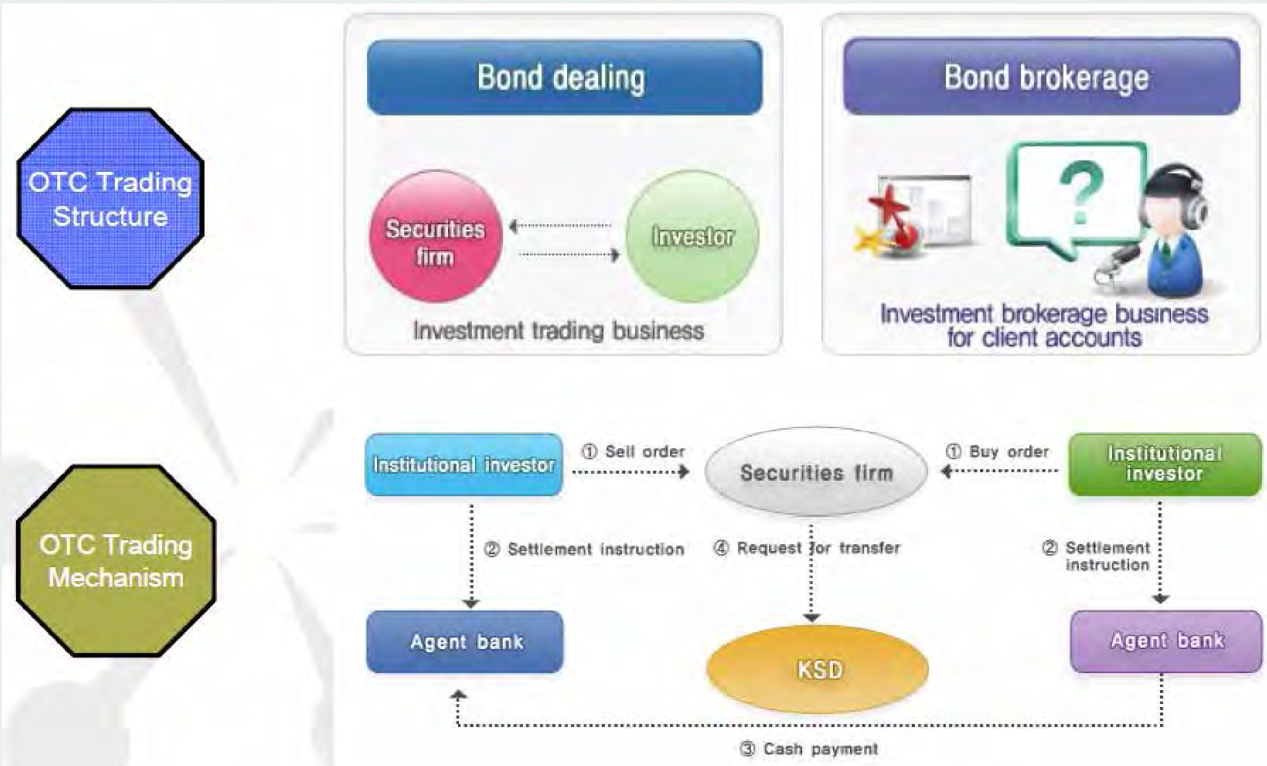
Source: The Korea Financial Investment Association

done in a conventional and standard method, without especially distinctive features. KSD's Bond Institutional Settlement System begins processing trade matching immediately after the participant submits their trade data. In a T+1 settlement cycle, the matching is completed by 20:00 on the trade date (T). In instances of foreign investors' holdings with custodian banks, it is completed by 14:00 on the settlement day (T+1).

Exchange Trading

KRX provides the Electronic Trading System for Government Bonds (KTS) browser to market participants. Participants are directly connected with KTS using the browser without any additional cost, provided that Internet access is available. There are currently 67 market participants, of which 40 are regular members and 27 are bond

Figure KR04: OTC Market Overview



Source: Korea Securities Depository.

members. By function, the number of primary dealers are 21, and the number of secondary dealers are 46.

Securities such as KTBs, Monetary Stabilization Bonds (MSBs) issued by BOK, and Deposit Insurance Fund Bonds (DIFBs) issued by the Korea Deposit Insurance Corporation are traded on KTS (**Figure KR05**). Trading hours are from 9:00 to 15:00 and the trading lot is KRW1 billion.

Since KRX is an order-driven market, bonds are traded through a competitive bidding system. The bid–ask orders placed by eligible participants are automatically executed by a centrally matching system. If the client is a foreign investor, the sell side and/or the buy side of securities companies transfer the order information to FSS.

The KTS market structure is illustrated in **Figures KR06, KR07**.

Clearing and Central Counterparty

Clearing and Central Counterparty for the OTC Market

There is no clearing and central counterparty (CCP) function for the OTC bond market.

CCP for the Exchange Market

Acting as a CCP, KRX owns and operates the netting system for the trades in the exchange market. Through KRX debt assumption without responsibilities, multilateral trading in the Republic of Korea's market has shifted to a bilateral trading relationship between KRX and its members. This guarantees the legal validity of multilateral netting. Netting is a process that confirms the securities and charges to be delivered by members to KRX on the settlement date. The quantity of securities to be delivered is calculated from the balance (net) between the selling and buying quantities per issue and members. For charges, the net single position is calculated by finding the net between buying

Figure KR05: Korea Exchange Bond Market (Overview)

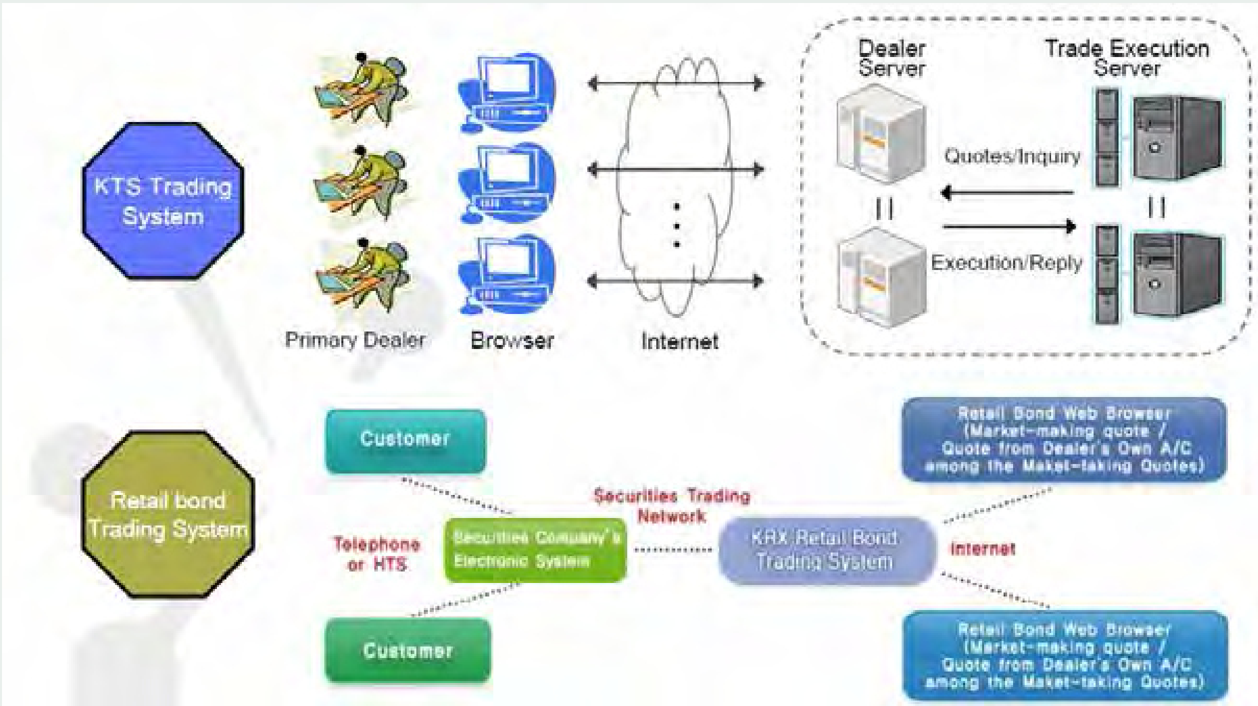
Market Division		Purpose	Eligible Bonds	Participants
Institutional Investors Market	KTS	Stimulation of GB Issuance & Trading; Establishing fair price by constructing benchmark yields	KTBs; MSBs; KDIC bonds	Securities companies; Banks; Institutional investors(pension, insurance companies)
	Repo Market	Funding through collateral bonds; Facilitating bond lending & borrowing	KTBs, MSBs, KIBs & corporate bonds(AA or higher)	
Ordinary Bond Market	Retail Bond Market	Stimulating individual investors' bond investment	Bonds whose quotation amount is less than KRW 5 bn.	Retail Primary Dealers; Ordinary investors
	Small-lot Public Bond Market	Providing liquidity to the non-voluntarily holding bonds	National Housing Bonds; Seoul Subway Bonds; Regional Development Bonds	Exclusive members for buying small-lot bonds; The general public
	Others	Trading equity-linked bonds etc.	Equity-linked bonds; Other corporate bonds	Securities companies; Ordinary investors

Source: Korea Securities Depository.

Figure KR06: Market Structure of KRX Electronic Trading System for Government Bonds)

KTBs = Korea Treasury bonds; KTS = KRX Electronic Trading System for Government Bonds; MSBs = Monetary Stabilization Bonds
Source: Korea Exchange.

Figure KR07: KRX Market System



Source: Korea Securities Depository.

and selling charges per member. In order for settlements to be accomplished according to the calculated settlement positions, KRX gives settlement orders to member firms and KSD. Bond trades in the exchange market are cleared by KRX on a multilateral netting basis. In this process, KRX acts as the CCP.

Bond Settlement

Bond Settlement in the OTC Market

All bonds, including Korean government bonds, are deposited in registered form in KSD. At the end of 2013, KSD participants included 298 institutions: 61 brokers–dealers, 51 banks, 143 asset management companies, 21 insurance companies, 5 pension funds, and 17 institutions classified as others. KSD conducts simultaneous security and cash settlement on a trade-by-trade basis, or DVP Model 1 of the Bank for International Settlements (BIS) definition.

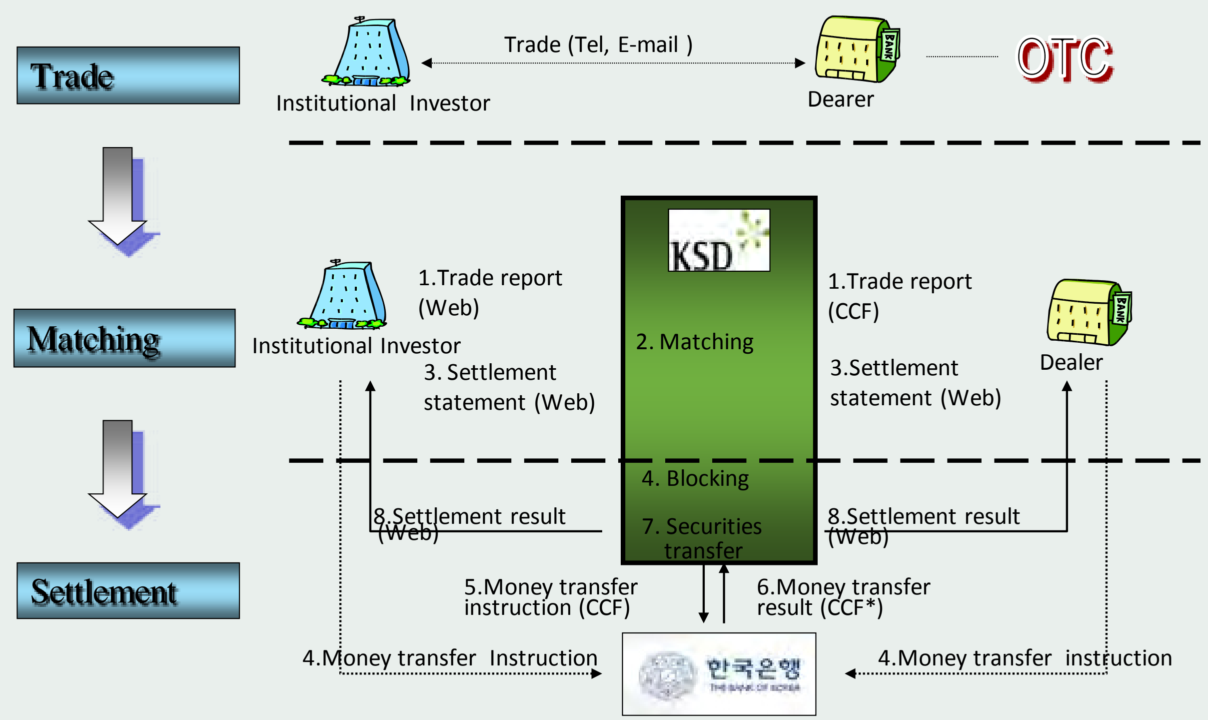
The trading parties must deliver the securities or make payments to KSD settlement accounts during BOK-Wire+ business hours on the settlement date, and in accordance with the notified details. Settlement occurs between T+1 and T+30 for bonds and on T for CDs and commercial paper. As soon as the trading parties have delivered their securities and funds to their securities accounts with KSD and KSD's account with BOK, KSD simultaneously settles the securities and funds through the parties' securities accounts at KSD and funds accounts held with BOK **(Figures KR08, KR09)**.

Bond Settlement in the Exchange Market

KSD also provides DVP settlement for bonds traded on KRX. KSD launched a new bond settlement system in February 2012. The new system introduces DVP Model 1 of the BIS definition after netting, while the previous system adopted DVP Model 3 of the BIS definition. The new system connects KTS and the New Bank of Korea Financial Wire Network System (BOK-Wire+).

In cases of exchange transactions, there is no limit on the transaction value, but there is

Figure KR08: Bond Trade and Settlement (Institutional Investors)



Source: Korea Securities Depository.

*Computer to Computer Facility

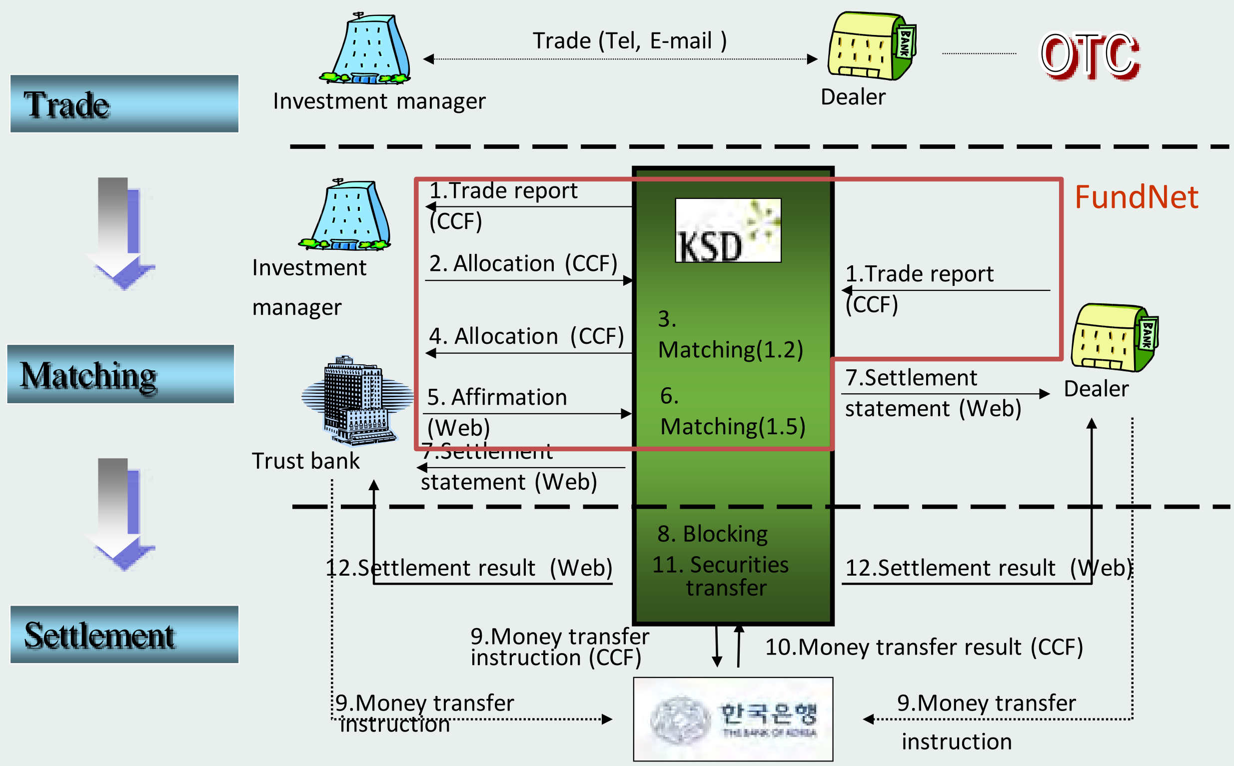
a ceiling of KRW10 billion for settlement. For example, a single trade of KRW25 billion worth of government bonds would be settled in three tranches: KRW10 billion, KRW10 billion, and KRW 5 billion. On the other hand, there is no limit to trading and settlement values in the OTC market.

Cash Settlement

BOK owns and operates BOK-Wire+ for cash settlement. The previous BOK-Wire, introduced in December 1994, was a large-value payment system. Through this system, BOK provided funds-transfer services via participants' current accounts with BOK. In November 1999, BOK also began providing DVP service, and in December 2004 it connected with the Continuous Linked Settlement (CLS) system to enable payment-versus-payment (PVP) service for foreign exchange settlement involving Korean won. In its early days, BOK-Wire processed fund transfers based solely on its Real-Time Gross Settlement (RTGS) mechanism. As BOK-Wire settlement volumes surged, however, liquidity burdens on participants increased. In May 2005, BOK launched a 4-year project to develop a new system (BOK-Wire+) that would use not only the pre-existing RTGS mechanism, but a hybrid settlement mechanism as well. BOK-Wire+ has operated stably since its launch in April 2009. The BOK-Wire+ hybrid system provides bilateral and multilateral offsetting settlements for liquidity savings. BOK also provides intraday overdraft with KRX for settlement of government bond transactions.

BOK-Wire+ settlement procedures are sub-classified into those using the RTGS system and those using the hybrid system with its bilateral and multilateral offsetting features added to the RTGS system. Participants hold two types of accounts with BOK: current accounts and deposit accounts for settlement. The former are used for transactions carried out through the RTGS system and the latter for those through the hybrid system.

Figure KR09: Bond Trade and Settlement (Fund)



Source: Korea Securities Depository.

Funds transfers involving BOK loans, government and public bond transactions, CLS, and Retail Payment System (RPS) net settlement are handled through the RTGS system, while those related to general funds transfers, call transaction settlements, and DVP settlements are processed through the hybrid system.

The online operating hours of BOK-Wire+ are 9:00 to 17:30 from Monday to Friday. But market participants can use the commercial banking system for money transfers after BOK-Wire+ closes. BOK may extend its operating hours temporarily if it deems it necessary due to an error in the BOK-Wire+ system, delays or concentrations of funds settlement, or any other unavoidable reasons.

Overview of Corporate Bonds

Trading

OTC Trading
In the Republic of Korea, there are two major corporate bond markets. Most corporate bonds are traded in the OTC market.

Exchange Trading
The exchange market is operated by KRX. Equity-linked corporate bonds are traded in the exchange market.

CCP

CCP for the OTC Market
Corporate bonds traded in the OTC market are settled through KSD's settlement system (KSD SAFE+) without netting.

CCP for the Exchange Market
Exchange trading of corporate bonds is settled through clearing in KRX. That means the settlement detail volume after netting is smaller than the trade volume. In this process, KRX is acting as CCP.

Bond Settlement

Bond Settlement in the OTC Market
Most corporate bonds are traded in the OTC market. The processes for corporate bond trades are similar to those of government bonds **(Figure KR10)**.

Bond Settlement in the Exchange Market
KSD plays the same role with respect to exchange-traded bond settlement as it does in the OTC market.

Cash Settlement

For cash settlement in OTC market trading, BOK acts as the cash settlement bank. For cash settlement in exchange trading, participants can use one of two commercial banks (Shinhan or Woori).

Interest Payment and Redemption

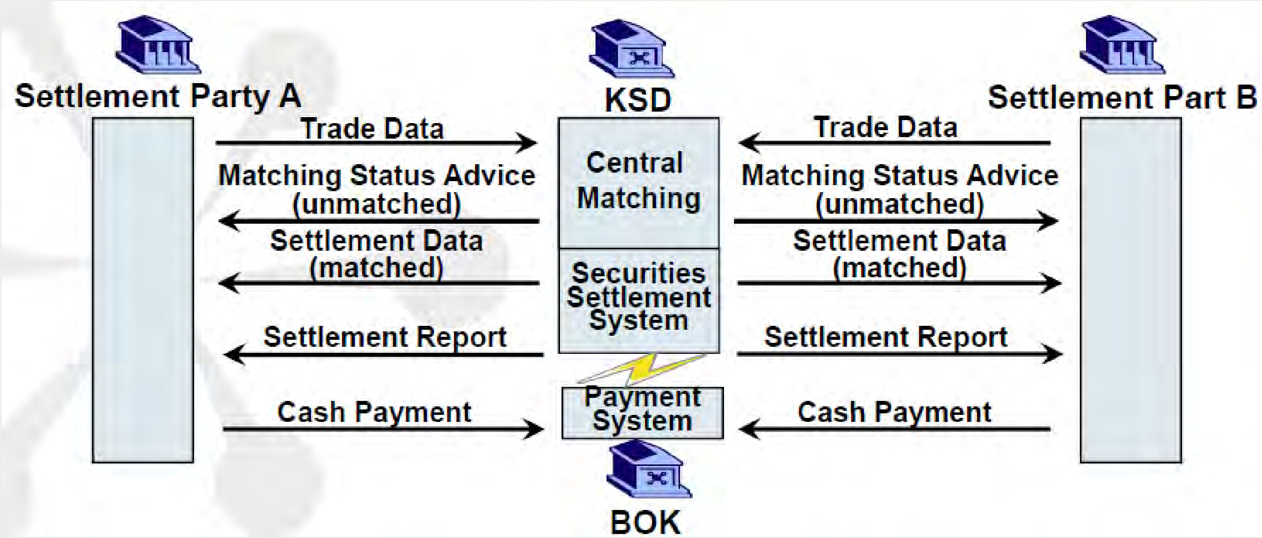
Interest Payment and Redemption of Government Bonds

BOK, as the registrar of government bonds, pays interests and redemption to KSD on behalf of an issuer. Interest on all government bonds is paid by KSD directly into the respective custodian's cash account with BOK. Upon receipt of interest payment from KSD, the custodian credits the interest amount to a client's cash accounts after deduction of the relevant taxes **(Figures KR11, KR12)**.

In cases of investment by a non-resident (vs. a resident), there are three different procedures to be followed:

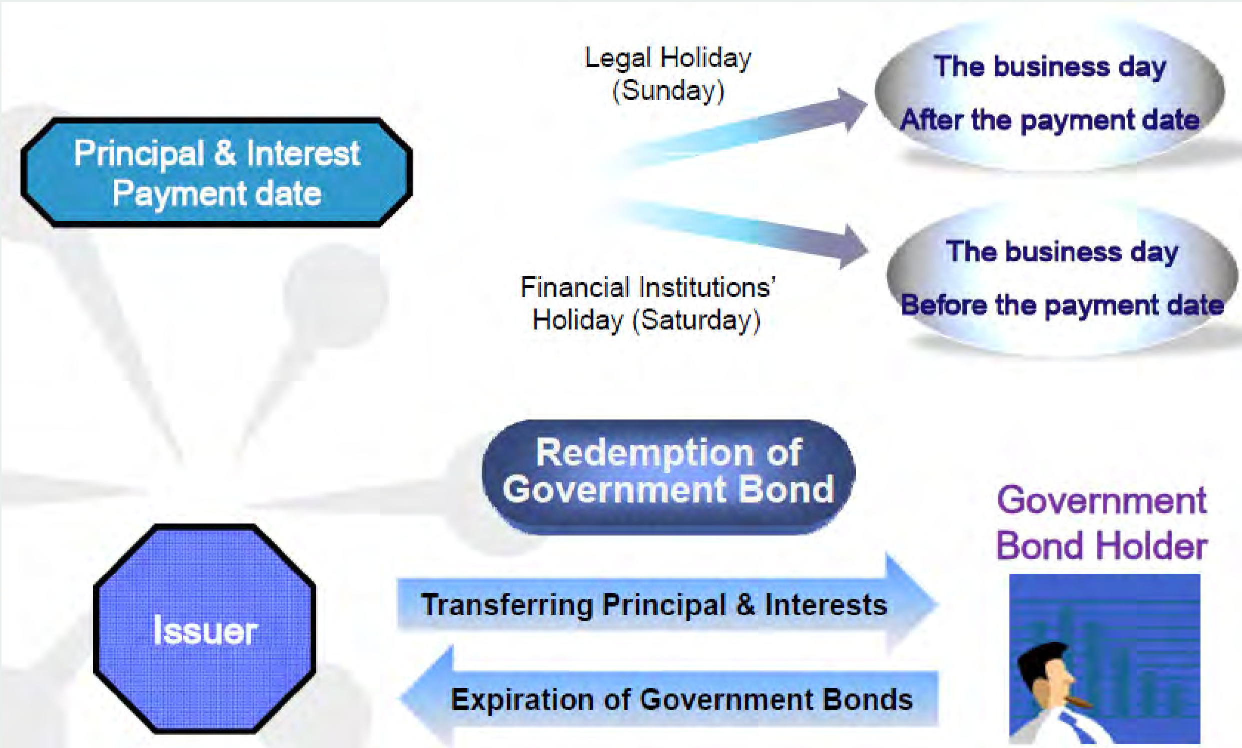
(i) IRC (investor's registration with FSS),
(ii) appointment of a custodian for mandatory deposit of bond, and
(iii) maintenance of exclusive investment LCY and foreign exchange (FX) accounts through which cash transfers should be made.

Figure KR10: Corporate Bond Trade & Settlement in OTC Marketv



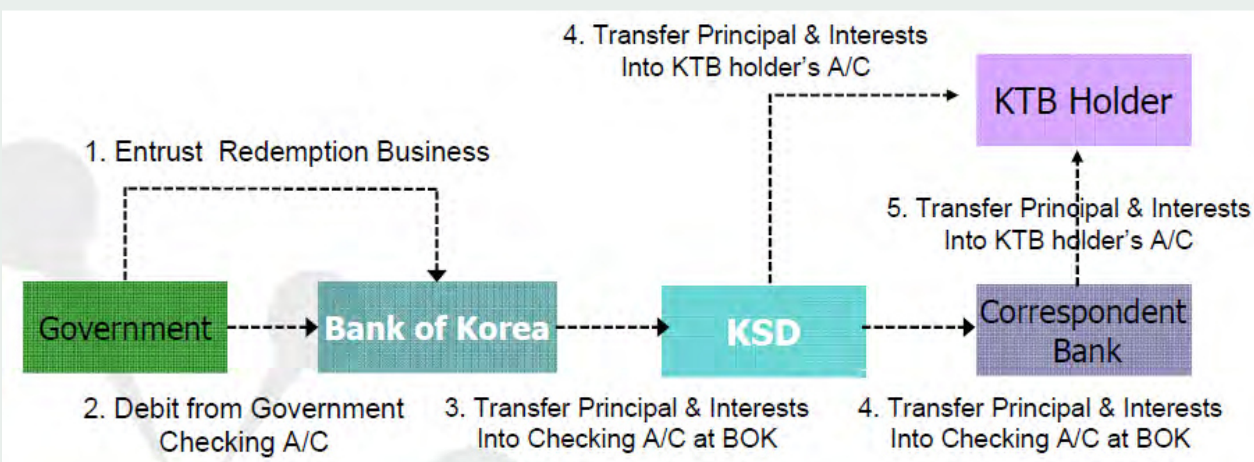
Source: Korea Securities Depository.

Figure KR11: Overview of KTB Redemption



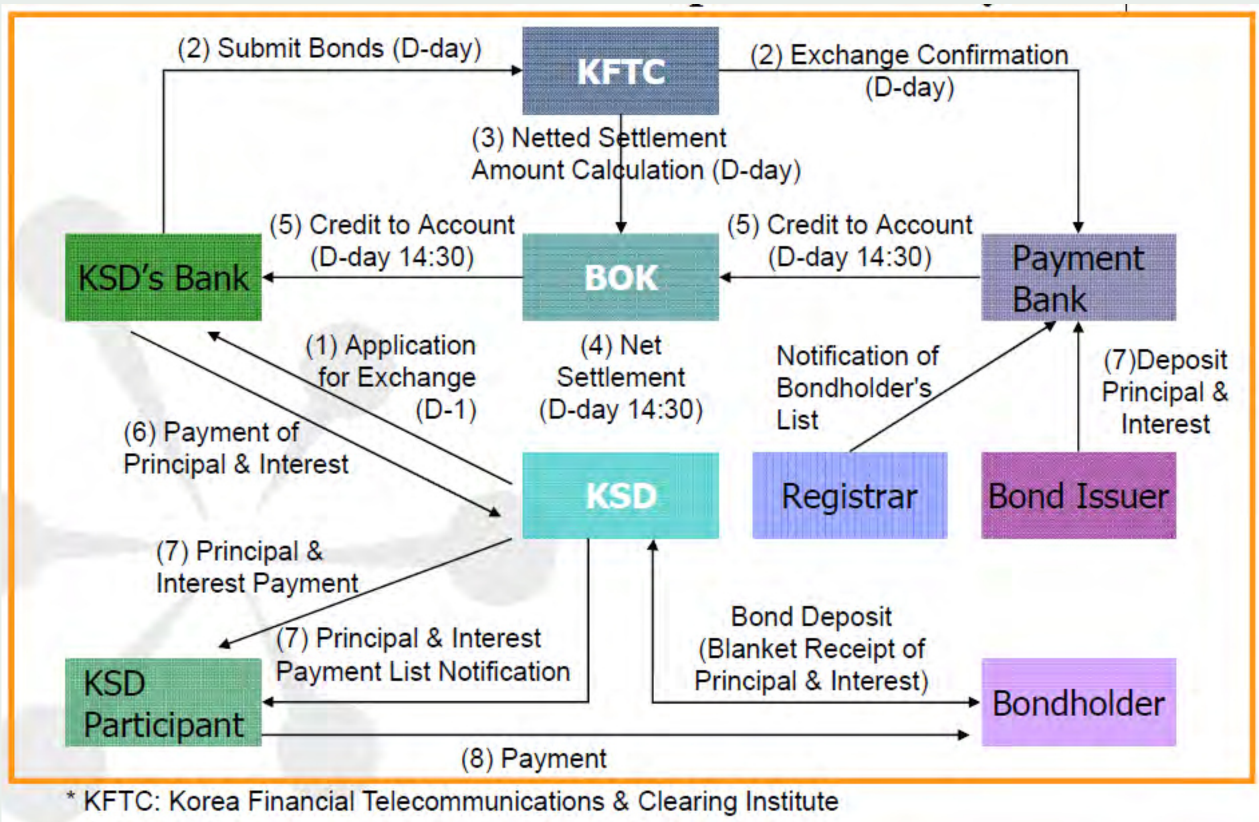
Source: Korea Securities Depository.

Figure KR12: KTB Redemption Procedures



Source: Korea Securities Depository.

Figure KR13: Flow Chart of Corporate Bond Redemption and Payment



Source: Korea Securities Depository.

Interest accrues on an actual (365-day) basis. The redemption amount of a government bond is fully paid back on the maturity date and interest is paid every 6 months until maturity.

Interest Payment and Redemption of Corporate Bonds

Commercial banks play a role as payment bank on behalf of issuers. Interest and redemption are remitted from an issuer's account to a bond holder's account through a payment bank's account, KSD's account, and a custodian's account **(Figure KR13)**.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

Business flows in the Korean government bond OTC and exchange markets are analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are given below.

(i) **Pre-settlement Matching**
There is no automated pre-settlement matching system (PSMS) in the Korean bond market, but both the sell side and buy side send settlement instruction to KSD's book-entry system on S-1 day, and the system matches settlement instruction. On the other hand, settlement instruction is cleared and thus there is no need to perform

pre-settlement matching in the exchange market.

(ii) **Bond Settlement**
The book-entry system requires settlement instruction. There are two ways to obtain instruction data: manual input and data interface.

In the OTC market, there is no system interface between the trading platform and the book-entry system, SAFE+, thus market participants input settlement instruction into SAFE+. On the other hand, Exture, which is the Korean trading and clearing system, sends settlement instruction data to SAFE+. In the exchange market, SAFE+ does not require any confirmation from the sell side or buy side because settlement instruction has been netted.

SAFE+ adopts central matching and sends matching confirmation to both the sell side and buy side. SAFE+ performs DVP settlement on a real-time basis (DVP Model 1 of the BIS definition) if instruction derives from an OTC trade. However, when a transaction derives from the exchange market, SAFE+ adopts DVP Model 3 of the BIS definition (Net-Net).

(iii) **Cash Settlement**
BOK, as the central bank in the Republic of Korea, plays a role as a cash settlement bank. SAFE+ sends cash settlement instruction to BOK-Wire, the cash settlement system owned and operated by BOK. If the transaction derives from OTC trading, BOK-Wire sends a payment request to the buy side, and the buy side affirms it and sends back cash settlement instruction to BOK-Wire.

After DVP settlement, BOK-Wire sends cash settlement instruction to both the sell side and buy side.

For further details, please refer to **Part 3 KR03 (Government Bond Transaction Flow for Domestic Trades (OTC))** and **Part 3 KR04 (Government Bond Transaction Flow for Domestic Trades (Exchange))**.

DVP Flow of Corporate Bonds for Domestic Trades

Business flows in the Korean corporate bond OTC market are analyzed using a typical DVP flow. Key findings of the analysis are given below.

(i) **Pre-Settlement Matching**
PSMS for corporate bonds is similar to that of government bonds in the Republic of Korea.

(ii) **Bond Settlement**
Bond settlement for corporate bonds is similar to that of government bonds in the Republic of Korea.

(iii) **Cash Settlement**
There are two types of cash settlement in the Republic of Korea. BOK plays a role as a cash settlement bank if cash settlement instruction derives from the OTC market. On the other hand, commercial banks play a role as cash settlement banks if instruction derives from the exchange market. For instruction from the OTC market, SAFE+ and BOK-Wire+ performs DVP settlement on a real-time basis. In this case, BOK-Wire+ receives settlement instruction from SAFE+ and performs cash settlement. After settlement, BOK-Wire+ sends confirmation back to SAFE+ and also sends a settlement report (cash) to both the sell side and buy side.

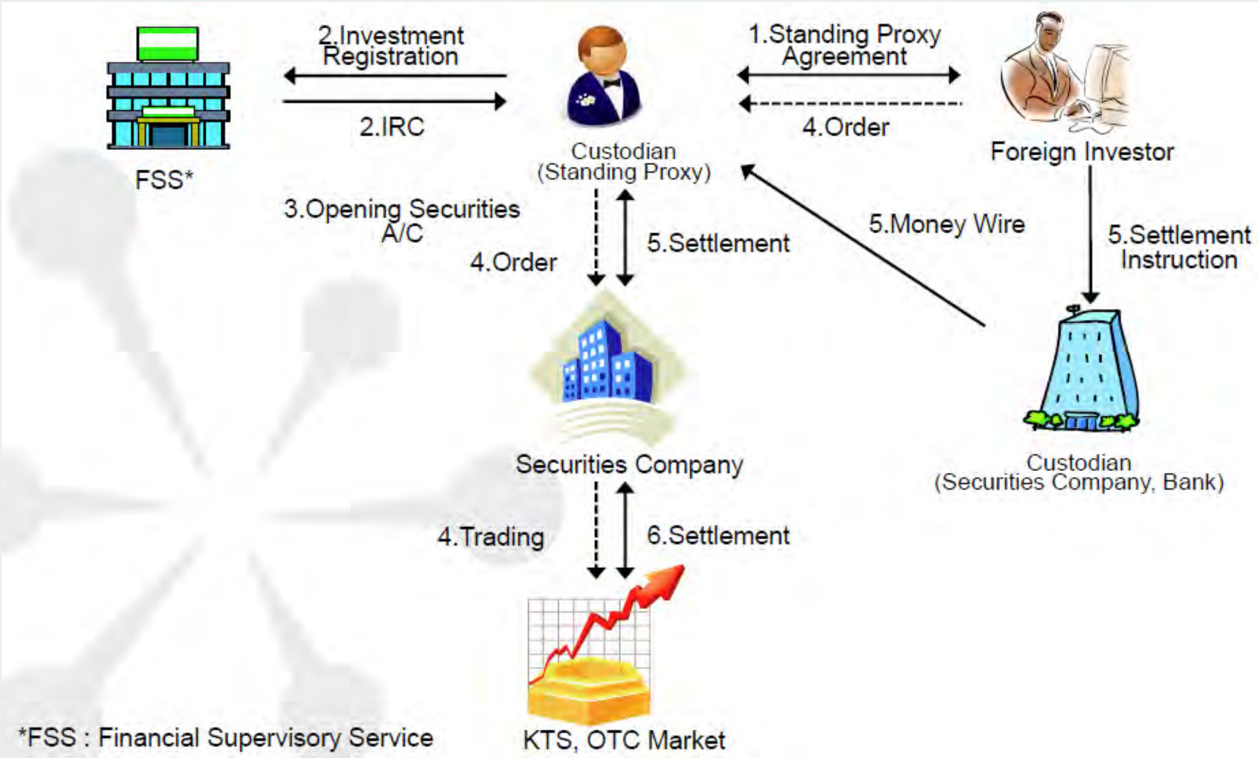
For instruction from the exchange market, SAFE+ and commercial banks performs DVP settlement. SAFE+ sends cash settlement instruction to commercial banks and commercial banks send it back to SAFE+.

For further details, please refer to **Part 3 KR05 (Corporate Bond Transaction Flow for Domestic Trades (OTC))** and **Part 3 KR06 (Corporate Bond Transaction Flow for Domestic Trades (Exchange))**.

DVP Flow of Cross-Border Bond Transactions

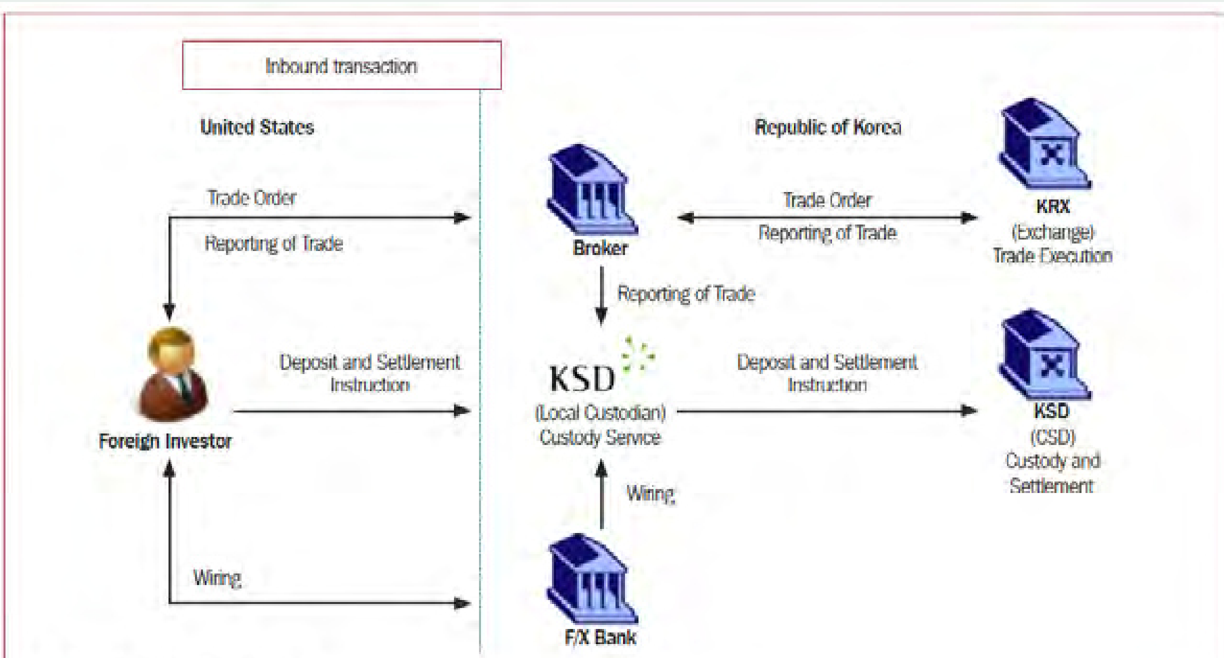
Although there are some barriers to cross-border bond transactions in ASEAN+3 economies, especially with regard to FX and cash controls, few barriers exist in the Korean money market.

Figure KR14: Foreign Investment Procedures on Secondary Market



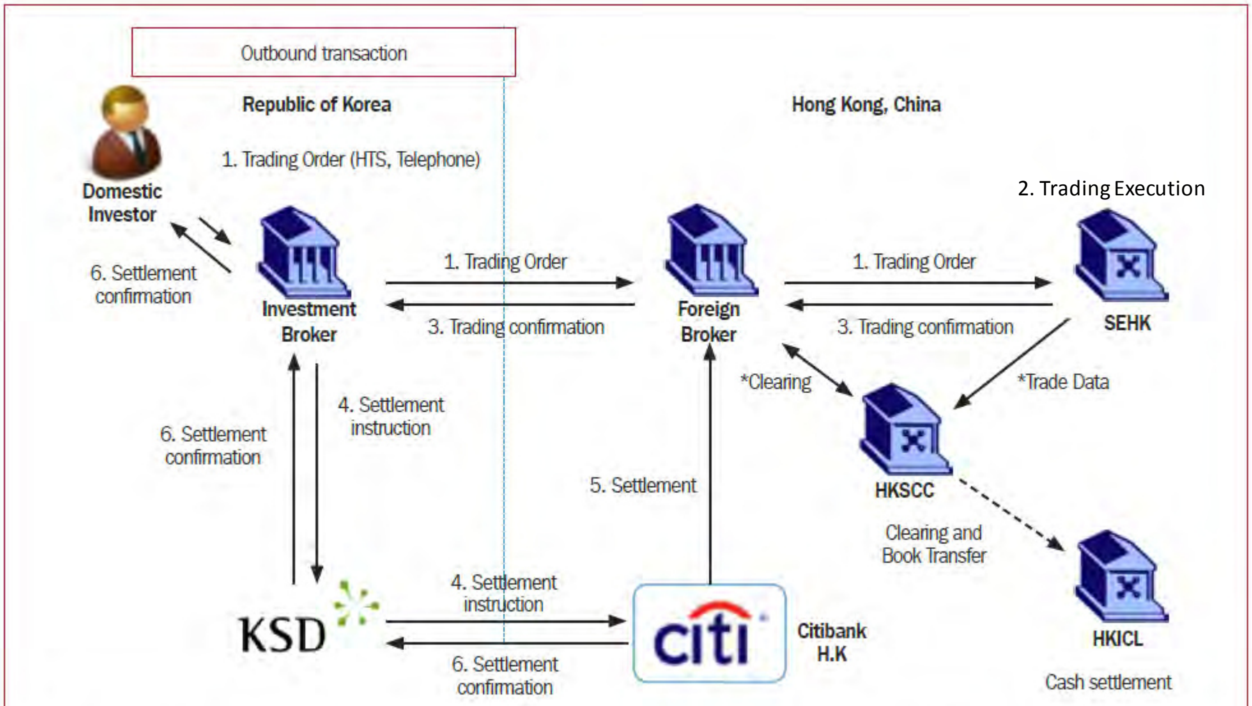
Source: Korea Securities Depository.

Figure KR15: Sample of Inbound Transactions in the Korea Bond Market



Source: Korea Securities Depository.

Figure KR16: Sample of Outbound Transactions in the Korea Bond Market



HK = Hong Kong; HKICL = Hong Kong Interbank Clearing Limited; HKSCC = Hong Kong Securities Clearing Company; HTS = Home Trading System; KRX = Korea Exchange; KSD = Korea Securities Depository; SEHK = Stock Exchange of Hong Kong

Source: Korea Securities Depository.

Some examples of cross-border transactions are shown in **Figures KR14, KR15, KR16**. Foreign investors are not subject to any restrictions on FX trades with underlying investment or pre-funding, or FX reporting. Offshore FX trading and repatriation is permitted for foreign investors. Third-party FX trading is legally permissible, but not used in practice.

For further details, please refer to **Part 3 KR07 (Bond Transaction Flow for Foreign Investors OTC Market / DVP)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payment and redemption of government bond is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **Paying Agent (PA)**

Generally, a PA has four functions:

(a) payment request for issuer,
(b) interest and redemption payment on behalf of issuer,
(c) receiving bond-holder list from central securities depository (CSD), and
(d) interest calculation.

In the Korean government bond market, BOK and KSD share a role as PAs because the Korean MOF entrusts interest payments to BOK.

KSD, as the government bond market CSD in the Republic of Korea, sends a payment request to BOK, which calculates interest payment and pays interest and redemption to a custodian.

(ii) **CSD**
Within ASEAN+3, many central banks are charged as the CSD in the government bond market. Nevertheless, KSD, an exchange-related entity, is the CSD in the Korean government bond market. Although KSD does not have a banking license, it has cash accounts with BOK-Wire+ for interest and redemption payment.

KSD receives a bond-holder list from CSD participants in order to calculate withholding tax. CSD participants manage their own bonds and customers' bonds separately.

(iii) **Payment Flow**
A central bank cash settlement system is used in the case of interest and redemption payment.

(iv) **Tax**
In the Republic of Korea, residents and non-residents must pay income tax. As the CSD, KSD withholds tax for residents, while custodians withhold tax for non-residents.

For further details, please refer to **Part 3 KR08 (Interest Payment Flow of Government Bond)** and **Part 3 KR09 (Redemption Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

Business flows for interest payment and redemption of corporate bond are analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
The functions of a PA for corporate bonds are the same as those for government bonds.

In the Korean corporate bond market, commercial banks play a role as PAs, paying interest and principal to custodians on the issuer's behalf. Issuers instruct PAs to pay them based on an issuer's initiative and without a payment request from the PA. PAs also confirm bond-holder lists and calculate interest.

(ii) **CSD**
KSD is charged as the CSD in the Korean bond market. Although KSD does not have a banking license, it has cash accounts in BOK-Wire+, which is BOK's RTGS system, and uses them for payment. CSD receives the bond-holder list and tax data from CSD participants.

(iii) **Payment Flow**
BOK-Wire+, as the central bank cash settlement system in the Republic of Korea, is used in the case of interest payment and redemption.

(iv) **Tax**
Both residents and non-residents must pay tax on interest payments **(Figure KR17)**. For residents, KSD's bank withholds the tax. Custodians withhold tax for non-residents.

For further details, please refer to **Part 3 KR10 (Interest Payment Flow of Corporate Bond)** and **Part 3 KR11 (Redemption Flow of Corporate Bond)**.

Message Standards

Message Format

KSD adopts proprietary message format for bond settlement; it does not adopt the ISO standard.

Message Items

Typical message types of bond settlement are settlement instruction and settlement confirmation. Securities Market Practice Group (SMPG) has defined 10 common elements of these two message types. These typical message items are compared with that of ISO20022, (sese.023, and sese.025).

Figure KR17: Taxation on Individual and Corporation

	Individual Investor	Institutional Investor
Applicable Act	Income Tax Act	Corporate Tax Acts
Taxable Income	Coupon payments	Coupon payments + Capital gains
Withholding Tax	Coupon payments are subject to withholding tax. (The tax amount is calculated by length of holding period.)	
Withholding Tax Rate	14% (The inhabitant tax equivalent to 10% of the income tax will be levied.)	
Collection of Withholding Tax	When the coupon is paid or when the bonds are sold, the withholding tax on the coupon will be withheld according to the length of the holding period.	
Withholding Agent	•When the bonds are sold, in principal, the seller collects the tax. If the seller is an individual, the buyer (corporate) instead withholds it. •When the coupon is paid, the bond coupon payer collects tax.	

Source: Korea Securities Depository.

Message items of settlement instruction and confirmation adopted by KSD do not include Place of Settlement and Client of Receiving or Delivering Agent.

Market Practices

Operating Hours

For on-exchange transactions, the settlement cut-off time is 16:00. Trades taking place after this time are not immediately processed as fails, and settlement continues to be processed. After the cut-off time, the deadline for securities delivery is 19:00 and for cash it is 17:00. In cases of OTC transactions, the cut-off time has two stages. The initial deadline is 17:30, the closing time for BOK-Wire+. (This is referred to as closing DVP settlement and switching over to free-of-payment [FOP].) KSD's Bond Institutional Settlement system closes at 18:30. (This is referred to as the closing of Bond Institutional Settlement.) Thus, the reversal time is between 17:30 and 18:30, and BOK-Wire+ cannot be used.

Settlement Cycle

In the Republic of Korea, the settlement cycle for OTC bond transactions is from T+1 to T+30, as decided by agreement between the seller and buyer. However, repurchase agreements, retail bond transactions, and bond transactions by collective investment vehicles can be settled on the trade date, T, per the Regulation on Financial Investment Business. The settlement cycle for OTC bond transactions are decided without relevance to nationality of participants or type of bond (government or corporate), and is usually T+1.

On the other hand, the settlement cycles for on-exchange bond transactions are as follows. The settlement cycle for the Inter-Dealer Market for KTBs, MSBs, and Deposit Insurance Fund Bonds is T+1, and that of the general bond market for small-lot transactions of government bonds and retail bond transactions (e.g., convertible bonds, corporate bonds) is T.

Fails

The approach to fails differs between the exchange and OTC markets. Generally, fails mean that the selling member has been unable to deliver the securities by the designated deadline on the settlement day, resulting in the non-receipt of securities on the part of the buyer.

In case of on-exchange bond settlement, KRX regulations provide the guidelines for resolving fails. The first method is to use a Securities Delivery Bill. With the consent of the receiving member, the seller can issue a Securities Delivery Bill to be delivered in lieu of the securities. In this case, the member must post cash amounting to 130% of the securities' value (closing price on the day before issuance of the bill), and also pay compensation for the delay.

In case of Bond Institutional Settlement, there are no set guidelines, and fails are processed according to an agreement between the trading parties.

Bilateral Netting

On-exchange transactions are netted multilaterally and bilateral netting is not applicable. Therefore, only OTC bond transactions that are settled as gross transactions are applicable.

Basically, the settlement of OTC bond transactions is DVP Model 1 of the BIS definition (gross securities and cash), which is RTGS, and bilateral netting is seemingly not applicable. However, the function provided by the institutional settlement system for bonds is technically similar to bilateral netting. This is referred to as consecutive settlement (or technical netting).

For example, in the first transaction, securities company A sells KRW 10.0 billion (face value) of 3-year benchmark KTBs at KRW10.1 billion, which are bought by securities company B. In a second transaction, B sells A the same issue securities with face value of KRW10.0 billion for KRW10.1 billion. In this case, when the securities companies submit the trade data for both transactions into the Bond Institutional Settlement system, after trade matching and settlement data creation, these transactions are processed as cross-trades. That is, (Transaction 1) A→B, (Transaction 2) B→A ⇨ Settlement data A→B. Therefore, these trades are processed without delivery of securities or cash.

A more complicated example is if securities company A sells 3-year benchmark KTBs with a face value of KRW10.0 billion to B at the price of KRW10.1 billion, and B sells the same issue securities of the same face value to securities company C for KRW10.2 billion. In this case, B, in the middle of the transaction chain, can process these trades with consecutive settlement; that is, A→B, B→C is merged into A→B→C. There is no need for B to deliver cash or securities. A delivers the securities and C delivers KRW10.1 billion and KRW100 million to A and B, respectively. Hence, the netting conducted by the Bond Institutional Settlement system (netting through consecutive settlement or technical netting) is somewhat different to bilateral netting.

Since the Bond Institutional Settlement system handles OTC bond trading, these examples do not apply to settlement of securities lending or repo transactions. Also, it only applies to transactions with the same settlement date (same execution period), and when the settlement method is DVP. Merging multiple transactions for settlement is possible when submitting the trade data, and also after settlement data has been created.

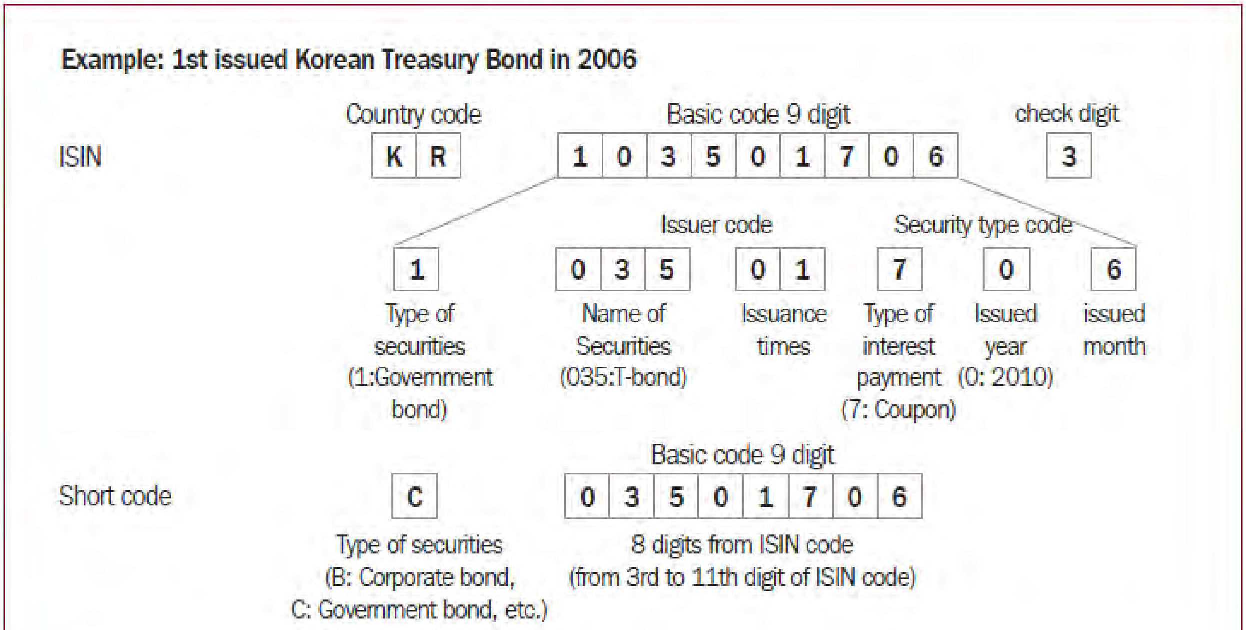
Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering

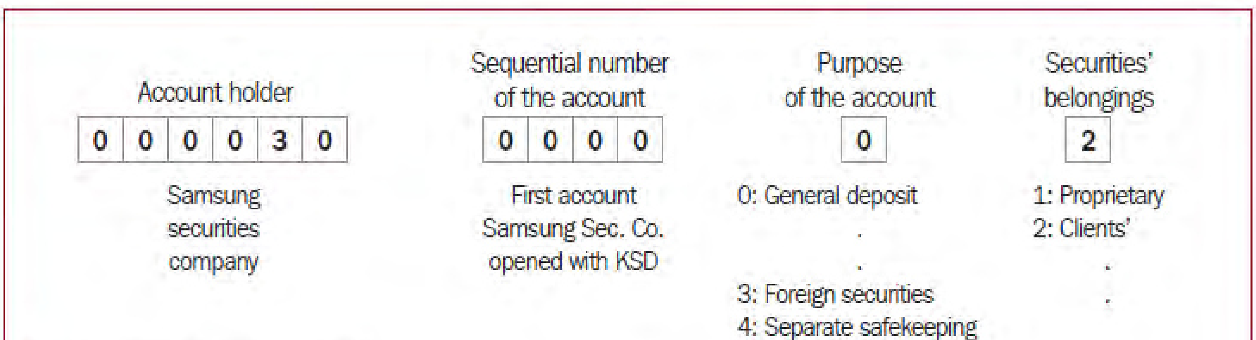
KRX is responsible for issuing International Securities Identification Number (ISIN) in the Republic of Korea. As the national numbering agency, KRX is authorized by ISO for securities numbering. ISIN is adopted as the numbering standard by KRX. In the domestic market, short-code is also used to identify bond name, which is composed of nine digits. The first digit is an alphabetical code, which denotes type of security. An example of the first issued KTB is shown in **Figure KR18**.

Figure KR18: Sample of First Issued Korean Treasury Bond in 2006



Source: Korea Securities Depository.

Figure KR19: Korea Securities Depository Code Structure



Source: Korea Securities Depository.

Financial Institution Identification

Each institution such as KSD, KRX, and BOK has a proprietary code for each financial entity. KSD uses an account number as an identification number. All of KSD's participants have one or more account number. The account number has 12 digits. The first six digits signify the account holder, the next four digits in the middle signify the purpose of the account, and last digit reflects whether the securities are proprietary or a client's. KSD's code structure is presented in **Figure KR19**.

In case of conversion between the Business Identifier Code (BIC) and the local code, the BIC is mapped into the local code and vice versa.

Securities Accounts

KSD has adopted a segregated and single-layer account structure. CSD participants manage their own bonds and customer's bonds separately in the SAFE+ book-entry system operated by KSD. A securities account number is used as a financial institution identification code in KSD.

Cash Account

Proprietary account numbers from BOK and commercial banks are used for cash accounts. If necessary, the International Bank Account Number (IBAN) is mapped into the proprietary code and vice versa.

Character Code and Language

Unicode and UTF-8 are used for the character code while the Korean language is used for bond settlement Infrastructure.

Medium- to Long-Term Strategies

In the future, a complete bond Alternative Trading System (ATS) will be introduced, equipped with a settlement function for the OTC market. The introduction of a bond ATS will bring innovations to the secondary bond market, thereby reducing trading costs, enhancing the price discovery function of the bond market, and improving market efficiency.

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Korea Securities Depository. http://www.ksd.or.kr/eng/main.home

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Lao PDR (LA)

Bond Market Infrastructure

Overview of Bond Market

The Lao People's Democratic Republic (Lao PDR) is in the process of developing a bond market. The domestic bond market is still in the preliminary stages, with only government bonds being issued.

Since the 1990s, there have been two types of bonds issued by the government: Treasury Bills and Arrears Clearance Bills. Treasury bills are issued on a regular basis for financing the budget deficit. The amount of each issue is limited to LAK50–LAK60 billion, which is equivalent to USD5–USD6 million, with maturities ranging from 3 months to 1 year and an average coupon rate of 15%. The Ministry of Finance (MOF) started issuing Treasury bills as a means to meet Lao PDR's fiscal deficits.

Arrears Clearance Bills are issued on a non-regular basis for clearing government debt accumulated by state-owned enterprises (SOEs). The amount of each issue is limited to LAK25 billion, with an annual interest rate of 16% and a maturity of up to 3 years.

Since a majority of Treasury bills are sold to commercial banks, these banks also work as agents in the sale or transfer of Treasury bills, although there is no law supporting such functions. Treasury bills are allocated among commercial banks in accordance with their capacity. Such capacity is based on their network, such as the number of branches, and willingness and ability to advance coupon payments on behalf of the government. Most Treasury bills are allocated for distribution or sales to the following banks: Banque Pour Le Commerce Exterieur Lao (BCEL), Lao Development Bank (LDB), and Agriculture Promotion Bank (APB).

No business firm, such as a public limited company, besides a bank has thus far issued and sold corporate bonds through public offering. The Business Law broadly stipulates that only a business firm (public limited company) is entitled to issue and sell corporate securities such as shares and bonds to the public.

Please refer to **Part 3 LA01 (Government Bond Market Infrastructure Diagram)** and **LA02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF is the authority responsible for any matter relating to the financial sector. MOF participates

in research to resolve banking problems related to public finance, currencies, credit, and stocks market in order to fulfill its financial management functions with regard to banking and monetary credit. Also, MOF oversees state banks, commercial banks, insurance, lotteries, accounting, auditing, and other financial services, as well as co-manages the sale of Treasury bills and bonds, and various types of social insurance.

Department of Domestic and Foreign Investment (DDFI)
Operating under the Prime Minister's office, DDFI administers the foreign investment system and reviews investment applications. Its primary functions include promoting Lao PDR as an investment destination, screening investment proposals, offering investment incentives, and facilitating foreign investment. To support and encourage investment, the government offers incentives to investors in various forms, including reduced corporate profit taxes, reduced duties and turnover taxes on imported capital equipment and inputs to production, and investment permission and guarantees.

Bank of the Lao PDR (BOL)
BOL, as the central bank, has regulatory authority to control the commercial banks, banking system, money supply, and foreign currency exchanges. BOL is responsible for issuing licenses to establish banks and other financial institutions. BOL is given the duties and authority to establish and improve the state and commercial banking systems for sustainable growth, and to manage and inspect the activities of all banks and financial institutions under its authority to ensure the stability and expansion of the banking system and financial institutions. BOL has the following rights and duties:

(i) issuing notes and coins with the approval of the Government of Lao PDR, and managing the domestic circulation of the currency;

(ii) administering monetary policy, supervising commercial banks and financial institutions, and serving as the final lender to such commercial banks and financial institutions with the objective of implementing monetary policy;

(iii) implementing foreign currency control and exchange rate policies;

(iv) issuing its own bonds to carry out monetary policy, buying and selling bonds directly with other commercial banks and financial institutions; and

(v) authorizing the establishment of local commercial banks, foreign commercial banks, and financial institutions under its supervision based on the approval of the government.

MOF and BOL have cooperated with each other when necessary. As an example, BOL monitors economic and monetary conditions, and advises MOF on the ceiling rate for Treasury bill auctions.

Lao Securities Exchange (LSX)
LSX is the primary stock exchange in Lao PDR. Its mission is to provide up-to-date and modern services characterized by transparent practices. Opening LSX was done to propel economic development and offer new opportunities to individual, institutional, and foreign investors.

Overview of Government Bond

Trading

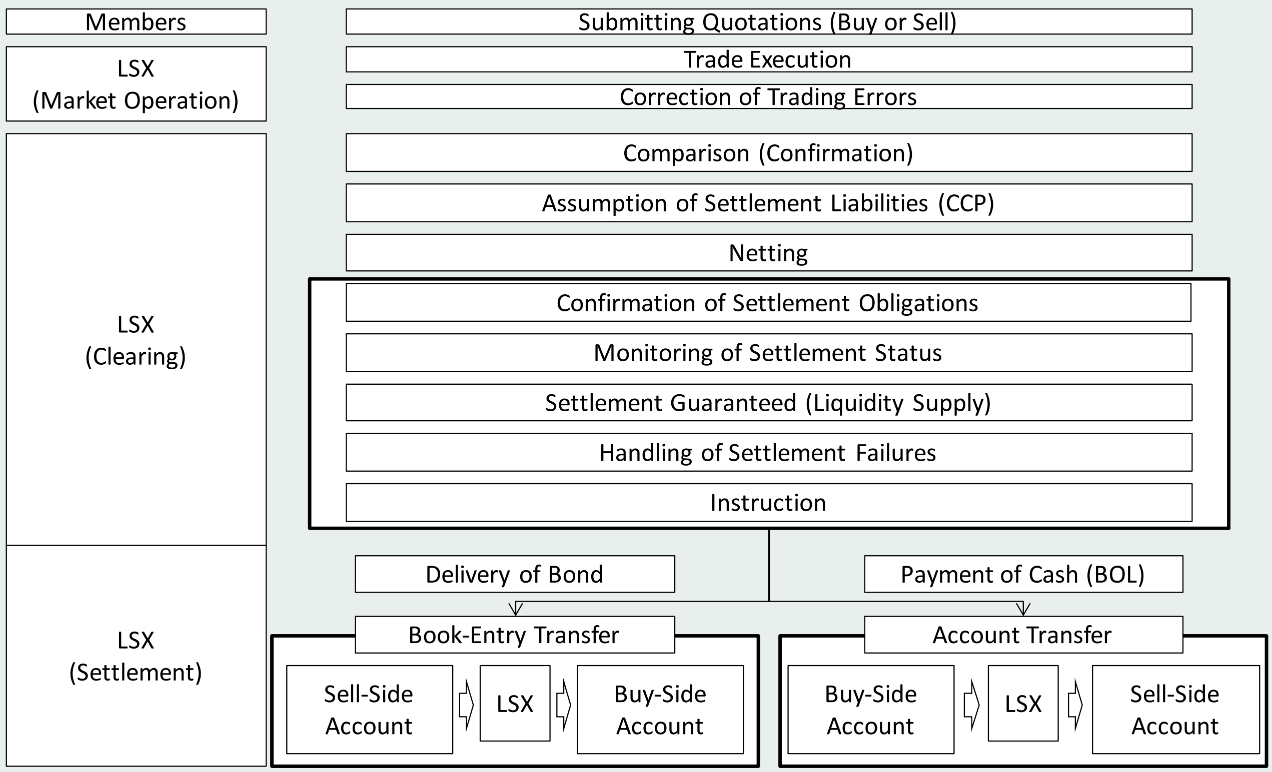
Over-the-Counter Market Trading
The over-the-counter (OTC) market in Lao PDR is in the early stage of development. The sell side and buy side trade via OTC market by telephone or FAX.

Exchange Trading
There is no exchange trade for government bond in Lao PDR secondary market although Lao PDR formally established its stock exchange in January 2011.

Clearing and Central Counterparty

There is no clearing and central counterparty (CCP) for the government bond market in Lao PDR.

Figure LA01: Trading Life Cycle in LSX



Source: LAO Securities Exchange (LSX).

Bond Settlement

Lao PDR does not adopt DVP settlement for government bonds. The settlement of bonds is done within 2 business days (T+2). The sell side delivers a physical certificate as evidence of trade to BOL. At the same time as registration of the trade, BOL completes cash settlement with the participant's accounts held at BOL. Then, the buy side receives he physical certificate from BOL.

Cash Settlement

BOL makes cash settlement with the participant's accounts held at BOL.

Overview of Corporate Bonds

As described above, the Business Law permits public limited companies to issue and to sell corporate securities, but there are no corporate bonds issued in Lao PDR. In the event of corporate bond issuance, it would be handled with the same flow as stocks.

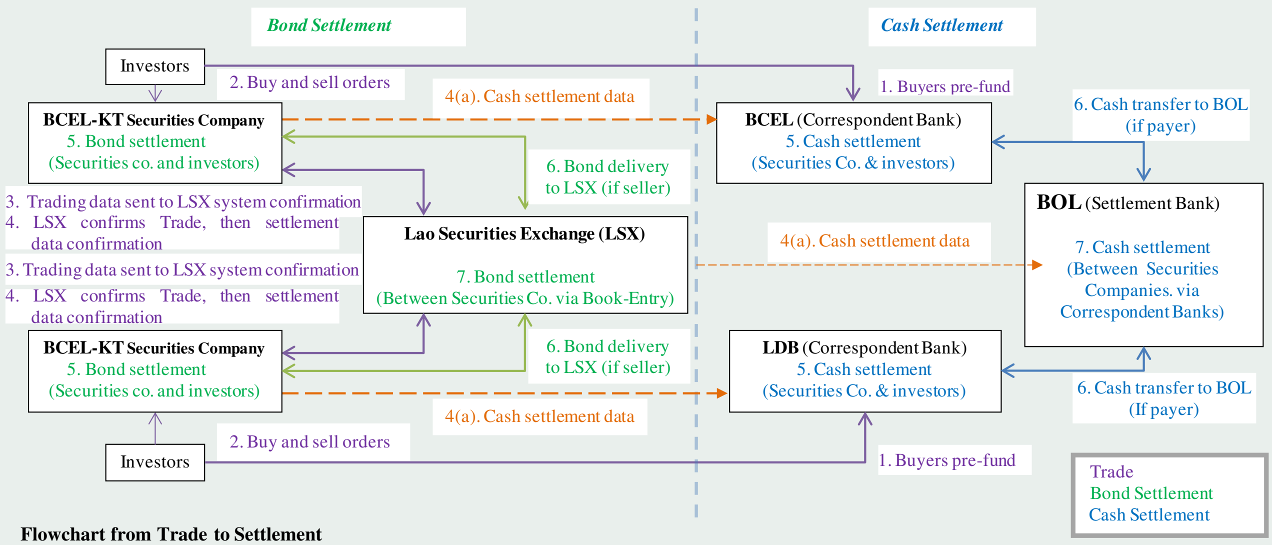
Trading

There are no corporate bonds issued in Lao PDR.

CCP

There are no corporate bonds issued in Lao PDR.

Figure LA02: Flowchart of Listed Corporate Bond Settlement



Flowchart from Trade to Settlement

1. Buyer shall have cash available in the bank before placing the buying order (good faith deposit in cash 100%).
   Seller shall have bonds available before placing the selling order (good faith deposit in bonds 100%).
2. Investor places buying or selling order.
3. Securities companies send trading data to LSX trading system for execution.
4. LSX sends trade confirmation and then sends settlement data to securities companies.
   4(a). LSX and securities companies send cash leg settlement data to BOL and correspondent banks respectively.
5. Cash settlement between securities companies and investors operated by correspondent banks at 10:00 am on T+2.
   Bond settlement between securities companies and investors operated by securities companies at 10:00 am on T+2.
6. A correspondent bank transfers cash leg to its bank account at BOL according the settlement data.
   Either both or one of securities companies deliver(s) bonds to LSX to their securities account(s) at LSX according the settlement data received from LSX.
7. Cash settlement between securities companies operated by BOL via correspondents' bank accounts by 2:00 pm on T+2.
   Bond settlement between securities companies operated by LSX via book-entry by 2:00 pm on T+2.

Source: LAO Securities Exchange (LSX) (modified by ADB Consultant).

Bond Settlement

There are no corporate bonds issued in Lao PDR.

Cash Settlement
There are no corporate bonds issued in Lao PDR.

Interest Payment and Redemption

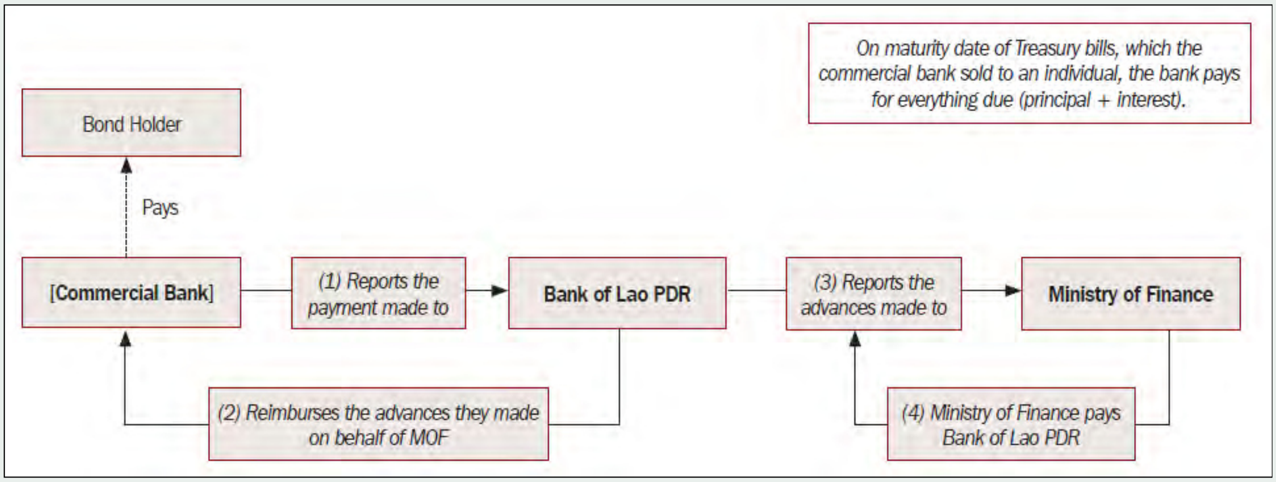
Interest Payment and Redemption of Government Bonds

For interest payments where Treasury bills have been sold or transferred by commercial banks to non-banks, the commercial bank advances the interest to bond holders. After that, commercial banks report to BOL about the advance payment they made on behalf of MOF, and BOL records the advance payment and later on reports to MOF. The report is made on a quarterly basis for the purpose of a reminder.

MOF, before making payments, reconciles the details with BOL, particularly on the amount for payment.

MOF informs BOL of which Treasury bills are subject for redemption. Commercial banks go to BOL seeking Treasury bill redemption. BOL then advances payment to the commercial banks on behalf of MOF. After that, MOF issues a letter similar to a promissory note stating when they can pay for the advances BOL made on their behalf for particular Treasury bills **(Figure LA03)**.

Figure LA03: Process of Redemption of Treasury Bills Issued to Commercial Banks



Source: ABMF Sub-Forum 1.

Interest Payment and Redemption of Corporate Bonds

There are no corporate bonds in Lao PDR. However, it is expected that the flow of interest payment and redemption for listed corporate bond would be similar to the flow of listed equities. **Figure LA04** is the expected flowchart of interest payment and redemption of listed corporate bonds.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

Lao PDR does not adopt DVP settlement for government bonds.

(i) **Pre-Settlement Matching**
Lao PDR does not adopt DVP settlement for government bonds.

(ii) **Bond Settlement**
Lao PDR does not adopt DVP settlement for government bonds.

(iii) **Cash Settlement**
Lao PDR does not adopt DVP settlement for government bonds.

For the flow of government bonds, please refer to **Part 3 LA03 (Government Bond Transaction Flow for Domestic Transfer)**.

DVP Flow of Corporate Bonds for Domestic Trades

There are no corporate bonds issued in Lao PDR.

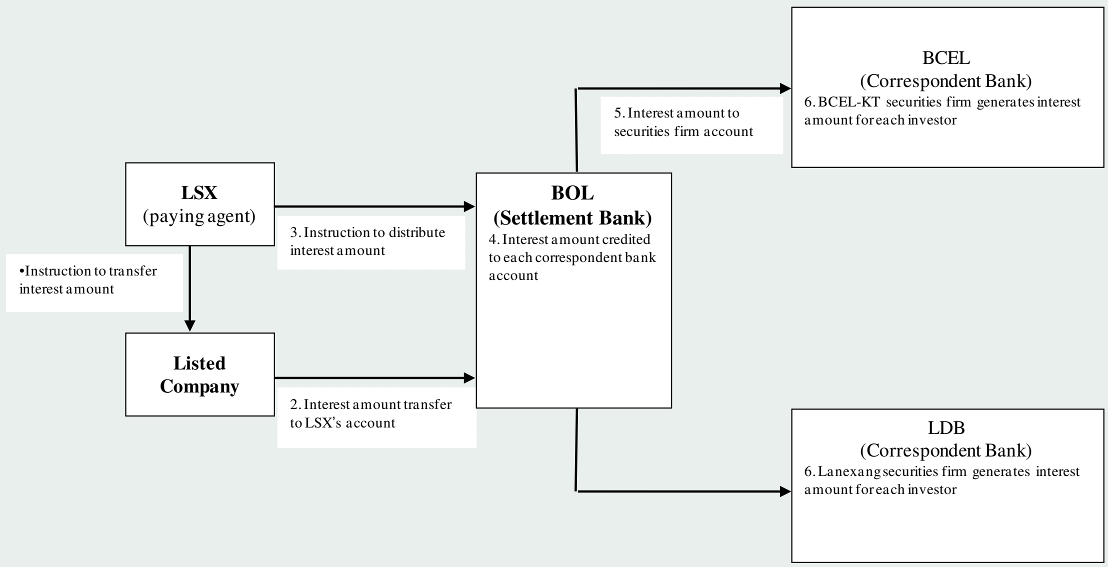
For a possible future flow of corporate bonds, please refer to **Part 3 LA04 (Corporate Bond Transaction Flow for Domestic Transfer)**.

DVP Flow of Cross-Border Bond Transactions

There is no DVP flow of cross-border transactions. BOL regulates cross-border capital and money market transactions. Inward remittances and repatriation of portfolio investments are principally allowed for both residents and non-residents.

For capital inflows, all capital transactions are subject to authorization from BOL. Foreign investors are allowed to repatriate profits, capital gains, and other income upon full payment of

Figure LA04. Flowchart of Interest Payment for Listed Corporate Bond



1. LSX calculates and instructs listed company to transfer interest amount to LSX's account at BOL.
2. Listed company transfers interest amount to LSX's account at BOL.
3. LSX instructs BOL to distribute interest amount BCEL and LDB accounts at BOL.
4. BOL debits LSX's account and credits interest amount to each correspondent bank account (BCEL and LDB).
5. BOL transfers interest amount to securities firms' accounts.
6. Securities firms generate interest amount for each investor on the payment day.

Source: LAO Securities Exchange (LSX) (modified by ADB Consultant).

duties, taxes, and other fees. Repatriation of funds can be done through banks in Lao PDR.

Interest Payment and Redemption of Government Bonds

(i) **Paying Agent**
BOL acts as the paying agent (PA).

(ii) **Central Securities Depository (CSD)**
There is no central securities depository (CSD) in Lao PDR since MOF issues a physical certificate.

(iii) **Payment Flow**
Interest and principal redemptions are transferred from MOF's account to a commercial bank account through BOL's account, and then credited to an investor's account.

(iv) **Tax**
According to the Tax Law of 2005, interest from bonds or government debentures, as well as those from deposits, are exempted from income tax.

For more information, please refer to **Part 3 LA05 (Interest Payment Flow of Government Bond)** and **Part 3 LA06 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

(i) **Paying Agent**
There are no corporate bonds issued in Lao PDR.

(ii) **Central Securities Depository**
There are no corporate bonds issued in Lao PDR.

(iii) **Payment Flow**
There are no corporate bonds issued in Lao PDR.

(iv) **Tax**
There are no corporate bonds issued in Lao PDR.

Message Standard

Message Format

There is no settlement system in Lao PDR.

Message Items

There is no settlement system in Lao PDR.

Market Practices

Operating Hours

There are no particular operating hours in the Lao PDR bond market.

Settlement Cycle

The standard settlement cycle in Lao PDR is T+2.

Fails

There is no particular rule related to fails in the Lao PDR bond market.

Bilateral Netting

There is no particular rule related to bilateral netting in the Lao PDR bond market.

Taxation

Article 30 of the Tax Law states that lending interest and bond and share interest are all included in the list of tax-exempt income. Interest paid is considered an expense that can be deducted from annual taxable profits. Detailed descriptions of Lao PDR's tax system and the special tax regime for foreign investors are accessible through the Department of Domestic and Foreign Investment (DDFI) website.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering
Not applicable.

Financial Institution Identification
Not applicable.

Securities Account
Not applicable.

Cash Account
Not applicable.

Character Code and Language
Not applicable.

Medium- to Long-Term Strategies

A core goal of Lao PDR's bond market development plans is to establish primary and secondary markets for government securities. Lao PDR is in the process of establishing a regulatory framework and supervisory body. Lao PDR is restructuring its capital market by diversifying access to funding sources. Currently, the banking system remains dominant in Lao PDR's financial system, while other financial markets still have limited impact on the country's economy. The aims of the Comprehensive Services Strategy 2020 include

(i) cultivating employees to be moral and to be experts in their technical skills and knowledge to provide appropriate services to investors;

(ii) raising the knowledge level of investors and potential listing companies seeking raise funds through the stock market, including on-site training and through media campaigns; and

(iii) testing the information technology system to guarantee its quality to be ready for short- and long-term securities trading services.

Lao PDR intends to list corporate bonds at a later stage.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Myanmar (MM)

Bond Market Infrastructure

Overview of Bond Market

The Government of Myanmar started the process of financial liberalization in the early 1990s by allowing private sector participation in financial activities. In 1996, Myanmar Securities Exchange Center Co., Ltd. (MSEC) was established to help develop an organized capital market in Myanmar. Legal infrastructure is also being improved, including enactment of the Myanmar Companies Act and Myanmar Companies Rules. The Ministry of Finance (MOF) and Attorney General's Office are jointly drafting a Myanmar Securities Exchange Law.

The Central Bank of Myanmar (CBM) has issued 3- and 5-year local currency (LCY) government treasury bonds since 1993 to promote public savings and develop the capital market in Myanmar. In 2010, 2-year LCY government treasury bonds were issued to the public. There is also a 3-month treasury bill in Myanmar. Bonds are registered manually by CBM.

For an overview of recent government bond issuance trends in Myanmar see **Figure MM01**.

In order to develop efficient market infrastructure and a secondary government bond market, Myanma Economic Bank (MEB) and MSEC were appointed as underwriters for government bonds on 1 January 2010.[1] Banks generally do not sell their government bonds until maturity. Retail investors sometimes sell their government bonds at MSEC or MEB, but trading activities are quite small for now.

The government bond is the only investment vehicle in the Myanmar bond market, as there are no other investment instruments such as corporate bonds. Government bonds can be traded on the stock exchange, but the majority of government bonds are traded in the over-the-counter (OTC) market.

Please refer to Part 3 **MM01 (Government Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF has played a major role in the development of Myanmar's economy. MOF comprises five functional departments and seven institutions. The departments include the Budget Department,

[1] The underwriter in this instance is the organization that is allowed to sell treasury bonds to retail investors.

Figure MM01: Trends in Government Bond Issuance

(Kyat bn)		FY 2007		FY 2008		FY 2009		FY 2010		FY 2011		FY 07-10 CAGR
			% Share		% Share		% Share		% Share		% Share	
Total Government Bond Issuance Outstanding (by Holder Category)		179.8	100.0%	297.4	100.0%	939.2	100.0%	1,272.3	100.0%	1,855.3	100.0%	92.0%
Two-year Bonds	Public sector	-	-	-	-	-	-	1.4	0.1%	51.4	2.8%	-
	Private sector	-	-	-	-	-	-	12.2	1.0%	290.7	15.7%	-
Three-year Bonds	Public sector	0.6	0.3%	0.6	0.2%	0.7	0.1%	0.5	0.0%	2.5	0.1%	-7.2%
	Private sector	121.1	67.3%	196.8	66.2%	755.9	80.5%	767.8	60.3%	746.4	40.2%	85.1%
Five-year Bonds	Public sector	5.3	2.9%	6.9	2.3%	11.8	1.3%	13.2	1.0%	15.1	0.8%	35.6%
	Private sector	52.8	29.4%	93.0	31.3%	170.8	18.2%	477.3	37.5%	749.2	40.4%	108.3%

Source: Myanmar Central Statistical Office
Note: FY2007-2010: April-March, 2011: April-December

Internal Revenue Department, Customs Department, Revenue Appellate Tribunal, and Pension Department.

To achieve the objectives of its political, economic, and social policies, MOF performs the following activities:

(i) collecting, maintaining, and allocating public finances to increase tax revenue;

(ii) lowering inflation;

(iii) stabilizing general prices; and

(v) mobilizing domestic resources and financing the needs of the private sector.

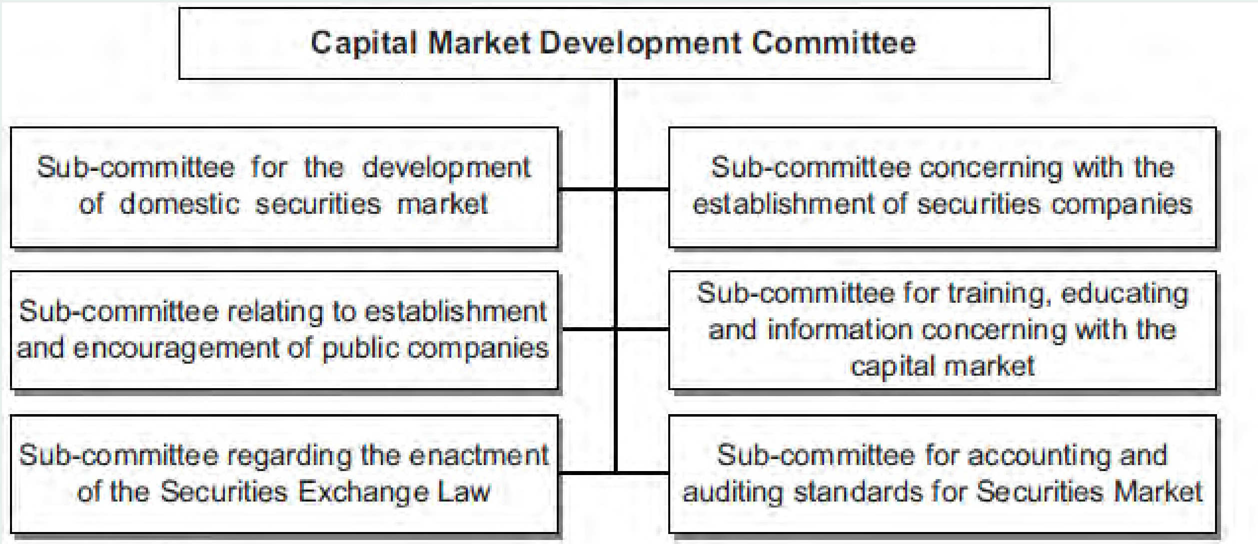
Central Bank of Myanmar (CBM)
CBM, under control of MOF, is stipulated as the regulatory body of the banking sector under the CBM Law. CBM is also responsible for supervising non-banks, including the Myanmar Insurance Corporation, Microfinance Supervisory Enterprises, Myanmar Oriental Leasing, and MSEC. The aim of CBM is to preserve the internal and external value of Myanmar's currency, the kyat. In accordance with this aim, CBM also endeavors to attain such objectives as to promote efficient payment mechanisms; facilitate the liquidity, solvency, and proper functioning of a soundly based financial system; and foster monetary, credit, and financial conditions conductive to orderly, balanced, and sustained economic development.

CBM is responsible as the sole institute issuing LCY and serves as the bank of the government by controlling its accounts as well as being the bank of other financial institutions. CBM operates monetary policy to maintain macroeconomic stability, mainly through the setting of interest rates. CBM has the authority to implement necessary legal enforcement and to grant banking licenses. Finally, CBM sells government bonds directly to banks and is responsible for registering and managing them.

Capital Market Development Committee CMDC
CMDC was formed by MOF with the approval of the Prime Minister's office in 2008. The committee was assigned to prescribe the Securities and Exchange Law and to set up the Securities and Exchange Commission and other infrastructure needed to develop the capital market. To carry out these objectives, the committee is split into six subcommittees **(Figure MM02)**.

The committee was assigned responsibility for designing and implementing a capital market development plan in line with the Association of Southeast Asian Nations (ASEAN) Capital Market Vision. CMDC submitted a development roadmap with a precise schedule of itemized tasks and policies to be implemented in three phases in 2008–15. This roadmap covers various policy

Figure MM02: Capital Market Development Committee



Source: Central Bank of Myanmar.

items in capital market development, including stipulating the necessary legal framework and establishing regulatory authorities, relevant securities market institutions, and infrastructure **(Figure MM03)**.

Myanmar Securities Exchange Centre Co., Ltd. (MSEC)
MSEC was launched in April 1996 as a joint venture between MOF and Japan's Daiwa Institute of Research. Generally, MSEC's trading activities are low and investors hold the shares as another savings instrument. The securities sector is still in its early stage. Currently, there are only two companies listed on MSEC.

MSEC provides services related to assisting companies in going public, helping investors in securities investments, acting as an intermediary in securities trading, maintaining a fair and efficient market for shares and bonds, supplying information for investments, and advising foreign funds seeking to invest in Myanmar. Thus, MSEC's activities include brokering, dealing, underwriting and distributing securities; researching the national economy and domestic companies; publishing investment information; providing consultancy services; managing venture capital fund; and acting as an agent for joint ventures. MSEC also sells treasury bonds to retail investors as an agent for CBM and shares of Myanmar companies as an agent for those companies.

Myanma Economic Bank (MEB)
MEB is state-owned banking enterprise and provides a full range of traditional banking services, including foreign exchange transactions. MEB is one of four state-owned commercial banks in Myanmar.[2] MEB and MSEC are normally mediated when CBM sells new bonds to the public.

Overview of Government Bonds

Trading does not take place in a secondary government bond market because banks generally do not sell their government bonds until maturity. Retail investors sometimes sell their government bonds at MSEC or MEB. The

[2] Other state-owned banks include Myanma Foreign Trade Bank, Myanma Investment and Commercial Bank, and Myanma Agricultural Development Bank.

Figure MM03: Capital Market Development Roadmap

Phase 1 2008-09	Diversify treasury bonds issued by Central Bank of Myanmar
	Increase numbers of public companies and issuance of corporate bonds
	Constitute a committee of development for capital markets
	Promote and disseminate knowledge of securities through workshops, seminars, business talks and media
	Capacity building of local employees in financial sector
	Attend international conferences and seminars in ASEAN and the other countries
Phase 2 2010-12	Enforce the Securities and Exchange Law
	Issue municipal bonds
	Convert state-owned companies to a joint-stock corporations
	Educate institutional investors
	Establish an industry association for the securities market
Phase 3 2013-15	Establish a stock exchange
	Diversify methods of securities transaction

Source: Capital Market Development Committee

current government bond market structure and its salient features are shown in Figure MM04 and detailed below:

(i) Issued Treasury bonds are physical certificates registered in CBM. A bank has only own account (registration) in CBM. MEB has both own account and customer account (registration) in CBM. MSEC has only customer account (registration) in CBM.

(ii) Most Treasury bonds are owned by banks. The outstanding amount of bonds owned by retail investors (non-banks) is less than a few percent of total government bonds outstanding.

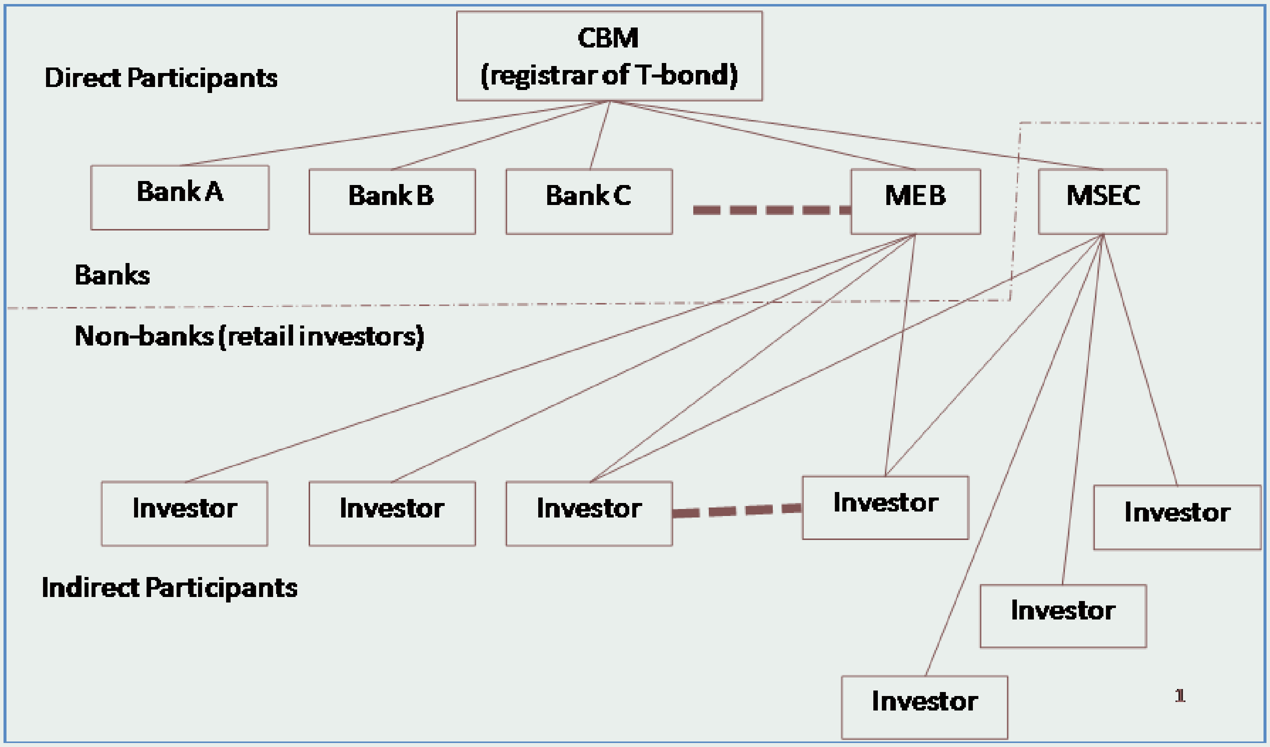
(iii) There are very little transactions in the secondary market, whether between banks or non-banks.

(iv) Bond settlement between banks is done by updating the record of ownership of the bonds registered in CBM.

(v) Cash settlement of Treasury bond trades can be done either by transferring money between CBM current accounts or by physically delivering banknotes and/or checks between banks. Cash settlement of Treasury bond trades for retail investors can be done either by using MEB accounts or by physically delivering banknotes and/or checks.

(vi) MSEC does not have a banking license.

Figure MM04: Government Bond Market Structure in Myanmar



(vii) MSEC acts as an intermediary in the OTC market for banks and securities companies.

Trading

OTC Trading
Myanmar's bond market is an OTC market. MSEC maintains a trading market for bonds on the OTC market. Government bonds are traded between banks and retail investors.

Exchange Trading
There is no exchange trading in Myanmar.

Clearing and Central Counterparty

Myanmar does not have clearing and central counterparty (CCP).

Bond Settlement

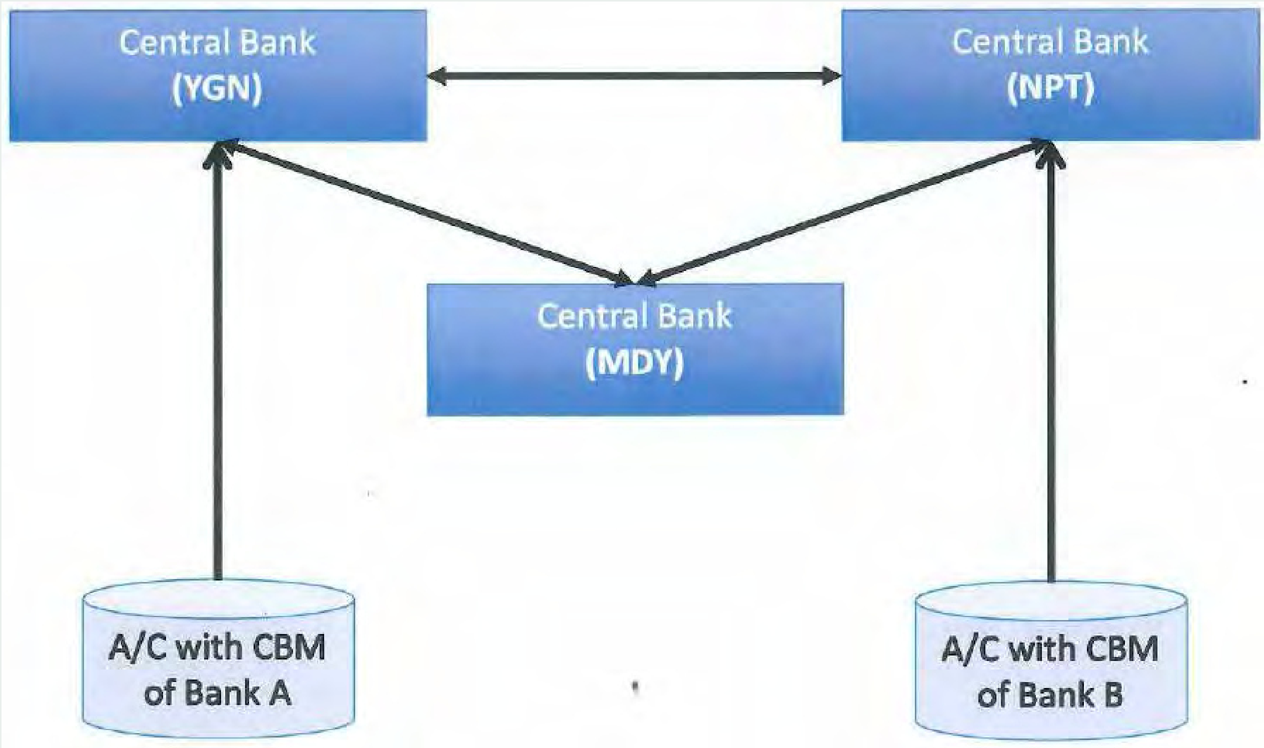
Myanmar does not have a book-entry system for government bonds. CBM registers each security on-book manually. Bond settlement is conducted by transferring the bond physically as well as registering the bond to transfer the ownership. Regarding retail investors, the registration of those bonds sold through MEB (and MSEC) is reported to CBM every week to enable it to keep track of the entire government bond market.[3] Bond settlement is also conducted in the form of a physical certificate.

Cash Settlement

Cash settlement between banks for bond settlement is conducted by CBM **(Figure MM05)**. Although CBM has begun processing electronic data transfer and implemented Banking Network for Electronic Fund Transfer (EFT) in 2011,

[3] MSEC is an indirect participant.

Figure MM05: Funds Transfer System



Source: Central Bank of Myanmar.

cash transfer is still conducted manually. Cash settlement between banks can be conducted through CMB's three clearing houses in Naypyidaw, Yangon, and Mandalay. The original application and facsimile also can be used for payment instruction. Myanmar has not adopted Real-Time Gross Settlement (RTGS), though the government is considering implementation of an RTGS system. Regarding cash settlement for retail investors, both the sell side and buy side open a cash account in MEB and conduct cash settlement through these accounts. Bank notes and checks are also used.

Overview of Corporate Bonds

There are no corporate bonds issued in Myanmar.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

On 1 April 2006, 3- and 5-year government treasury bonds were first issued bearing interest rates of 10.5% and 11.0%, respectively. Treasury bonds deposited by financial institutions in CBM are treated as a cash balance in calculating the reserve requirement.

Redemption is made on the maturity date along with the remaining interest due. For bonds sold by MEB and MSEC, interest and redemption are paid by the Budget Department through the account of MEB and MSEC on the due dates.

Interest Payment and Redemption of Corporate Bonds

There are no corporate bonds in Myanmar.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

Myanmar does not adopt DVP settlement for government bonds.

(i) **Pre-Settlement Matching**
Myanmar does not adopt DVP settlement for government bonds.

(ii) **Bond Settlement**
Myanmar does not adopt DVP settlement for government bonds.

(iii) **Cash Settlement**
Myanmar does not adopt DVP settlement for government bonds.

For more detail, please refer to **Part 3 MM02 (Government Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Corporate Bond for Domestic Trades

There are no corporate bonds in Myanmar.

DVP Flow of Cross-Border Bond Transactions

There is no DVP flow of cross-border transactions in Myanmar.

The kyat is non-convertible and non-negotiable outside of Myanmar. The import and export of kyat is prohibited. Non-resident domestic currency accounts are permitted only with CBM authorization. Non-resident foreign currency accounts of international organizations and diplomatic missions may be kept with the Myanmar Foreign Trade Bank. Prior approval is required for other non-residents.

Interest Payment and Redemption of Government Bonds

(i) **Paying Agent (PA)**
CBM acts as the paying agent (PA) for government bonds.

(ii) **Central Securities Depository**
CBM functions as the central securities depository (CSD) for government bond.

(iii) **Payment Flow**
Interest and principal redemption is transferred from MOF's Revenue Department Account to MEB and a CSD participant account. Then, they credit the funds to the investor's account.

(iv) **Tax**
Withholding tax rates are dependent on the types of payment. Payments on income from interest are subject to the following rates of withholding tax:
- There is no tax for resident citizens and resident foreigners.
- There is a 15% withholding tax for non-resident foreigners.

For more details, please refer to **Part 3 MM03 (Interest Payment Flow of Government Bond)** and **Part 3 MM04 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

There are no corporate bonds in Myanmar.

Message Standard

Message Format

There is no settlement system in Myanmar.

Message Items

There is no settlement system in Myanmar.

Market Practices

Operating Hours

There are no particular operating hours in Myanmar.

Settlement Cycle

There are no particular settlement cycles in Myanmar.

Fails

There are no particular rules related to fails in Myanmar's bond market.

Bilateral Netting

There are no particular rules related to bilateral netting in Myanmar bond's market.

Taxation

There are 15 types of taxes and duties under four categories: (i) corporate tax, (ii) commercial tax (value-added tax), (iii) withholding tax, and (iv) personal income tax.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering

There are no codes or numbers government bonds, which are differentiated only by year-to-maturity.

Financial Institution Identification

The financial institution's name is signed on the physical certificate.

Securities Account

Not applicable.

Cash Account

Not applicable.

Character Code and Language

UTF-8 and local codes are used.

Medium- to Long-Term Strategies

The financial system in Myanmar is strongly dominated by banks, while the insurance sector and the securities market are relatively small. Though banks and other parts of the financial sector are heavily regulated, these regulations are highly risk-averse. There is very limited opportunity for market liquidity risk. Most banks in the world have some foreign exchange (FX) risk, which can also trigger a liquidity crunch, but foreign banking is only permitted for state-owned banks in Myanmar.

An electronic trading system is being developed and Myanmar is also considering the introduction of an RTGS system, securities depository system, and electronic clearing house. An upgrading of the accounting system of MOF's Accounts Department will also be considered. The new system will have omnibus account and multi-layer structure, and will adopt ISO20022 as message standard. International Securities Identification Number (ISIN) and Business Identified Code (BIC) will also be implemented in the new system.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Malaysia (MY)

Bond Market Infrastructure

Overview of Bond Market

The bond market in Malaysia has developed significantly in recent decades in terms of market size, range of instruments, and efficiency. According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the amount of local currency (LCY) government bonds outstanding in Malaysia reached USD190.30 billion at the end of 1Q13, while LCY corporate bonds were valued at USD131.64 billion.

Malaysian government securities are marketable debt instruments issued by the Government of Malaysia to raise funds from the domestic capital market to finance public development expenditure and working capital. The central bank, Bank Negara Malaysia (BNM), in its role as banker and adviser to the government, advises on the details of government securities issuance and facilitates such issuance through various market infrastructures that it owns and operates. Government securities in Malaysia include

(i) Malaysian Government Securities (MGSs) are long-term interest-bearing bonds issued by the Government of Malaysia to raise funds from the domestic capital market for development expenditure.

(ii) Malaysian Treasury Bills (MTBs) are short-term securities issued by the Government of Malaysia for working capital.

(iii) Government Investment Issues (GIIs) and Malaysian Islamic Treasury Bills (MITBs) are long-term and short-term, non interest-bearing government securities, which are issued based on Islamic principles by the Government of Malaysia.

The corporate bond market is known by its generic term, the Private Debt Securities (PDS) market. It includes listed and unlisted debenture, conventional bonds, convertible bonds, and Islamic bonds. The sector is further divided into short-term debt, such as commercial paper, and medium- and long-term bonds. Corporations have turned their attention toward the bond market as a viable alternative to bank borrowing and the equity market. Investors are also able to adjust their risk-return profile through the trading of various securities available in the market.

Islamic bonds, which are based on *shari'a* principles, are also available and play a major role in Malaysia's capital market development.

Both government and corporate bond markets are active markets for conventional and Islamic bonds. Domestic and foreign investors can buy and sell conventional and Islamic debt instruments through the exchange and over-the-counter (OTC) markets.

Unlisted bonds are largely traded in the OTC market, while listed bonds are traded through Bursa Malaysia (exchange market). More than 95% of Malaysian bonds are traded in the OTC market. Trade data are entered into the electronic trading platform (ETP), which was launched by Bursa Malaysia in March 2008.

The Real-Time Electronic Transfer of Funds and Securities (RENTAS) system is the central securities depository (CSD) and Real-Time Gross Settlement (RTGS) system for government bond trades in Malaysia. RENTAS comprises a Scripless Securities Trading System (SSTS), which allows book-entry settlement and recording of holdings of scripless debt securities; and the Interbank Funds Transfer System (IFTS), which deals with large-value fund transfers. It is a delivery-versus-payment (DVP) Model 1 of the Bank for International Settlements (BIS) definition. BNM owns and operates RENTAS.

Please refer to **Part 3 MY01 (Government Bond Market Infrastructure Diagram)** and **Part 3 MY02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
The Ministry of Finance (MOF), or Treasury Malaysia, looks after the financial and economic affairs of the state of Malaysia. MOF formulates the financial and economic plans that are followed by the Malaysian national government to ensure overall economic improvement.

Securities Commission (SC)
The Securities Commission (SC) is the central authority responsible for the supervision, regulation, and development of the securities and futures industries in Malaysia. SC was established under the Securities Commission Act of 1993. It is a self-funding statutory institution and reports directly to MOF. It has investigative and enforcement powers.

Bank Negara Malaysia (BNM)
BNM is the central bank of Malaysia. BNM focuses on the three pillars of central banking: monetary stability, financial stability, and the payment system. In addition, BNM is responsible for the issuance, registration, and settlement and redemption of government bonds through in-house automated trading and settlement systems. BNM introduced a payment and bond settlement system called RENTAS.

Bursa Malaysia
Bursa Malaysia is an exchange holding company approved under Section 15 of the Capital Markets and Services Act of 2007. It operates a fully integrated exchange, offering a complete range of exchange-related services, including trading, clearing, settlement, and depository services.

Bursa Malaysia Securities Clearing Sdn. Bhd. (BMSC)
Bursa Malaysia Securities Clearing Sdn. Bhd. (BMSC) is a wholly owned subsidiary of Bursa Malaysia with paid-up capital of MYR300 million. It provides clearing and settlement facilities for contracts between clearing participants. BMSC was incorporated on 12 November 1983 and commenced clearing house operations in March 1984. BMSC is governed by the BMSC Rules, which came into force on 1 January 1997. On 11 November 2002, BMSC completed the acquisition of Bursa Malaysia Derivatives Clearing Bhd., thus making it a wholly owned subsidiary of BMSC.

MyClear
MyClear is an operator of key market infrastructure for the securities market and provides securities and payment services via RENTAS (CSD and RTGS) and the Fully Automated System for Issuing/Tendering (FAST), the issuing system for unlisted debt securities. MyClear was incorporated in October 2008 and commenced operations on 2 January 2009. It was established as a wholly owned subsidiary of BNM as a separate overseer and operator of the systematically important payment systems (SIPS). Facilitating cross-border securities payments and settlement is also one of the roles of MyClear.

Bursa Malaysia Depository (BMD)
BMD is a subsidiary of Bursa Malaysia and was established in 1990. It was incorporated under the Companies Act of 1965 and authorized to perform the role of a central depository by the Securities

Industry (Central Depositories) Act of 1991 (SICDA). SICDA provides the legal framework and safeguards for users and participants in the central depository system (CDS).

Overview of Government Bonds

Trading

OTC Trading

The Malaysian government bond market consists of listed and unlisted bonds. Unlisted bonds are largely traded in the OTC market, where most overall trading takes place in the OTC market. Quotes are typically obtained directly from money brokers and dealers over the phone. Financial institutions either have to be registered or licensed by the SC to trade in bonds for their own or their clients' accounts. An agreement concluded over the telephone is then followed up with a confirmation order in writing. An investor can place an order with a dealer at his desired price and amount. However, a trade is only concluded when the dealer can find a corresponding sell side in the OTC market.

Financial institutions maintaining their own bond inventories usually provide their market bid or offer prices to their clients. In addition, principal dealers are obliged to provide two-way quotes for benchmark government securities. Information on government securities and bond indices are also available on the tickers on Bloomberg and Reuters. All trading in the OTC market is reported on the ETP, where the sell side keys in the deal and the buy side confirms within the stipulated 10 minutes' cut-off time from trade execution. Normal business hours for a securities trade are as per standard settlement or value spot; that is, 2 business days (T+2) from 9:00 to 16:30 from Monday to Friday, excluding holidays. Some custodians prefer T+3.

Bursa Malaysia introduced the ETP on 10 March 2008 for the Malaysian bond market in line with the National Bond Market Committee's mandate to develop a single electronic reporting and trading platform for the domestic bond market. The ETP is operated by Bursa Malaysia Sdn. Bhd., a wholly owned subsidiary of Bursa Malaysia. ETP was introduced to boost transparency and liquidity, as well as to increase efficiency in bond trading. The launch of the ETP is in line with the ongoing commitment to further improve market accessibility and increases trading efficiencies via infrastructure enhancement initiatives. The decision to develop the ETP was made in February 2004 by the National Bond Market Committee, which includes MOF, SC, and BNM.

The ETP allows dealers to match bids with offers, negotiate deals, and access historical data through a common computerized network. The ETP offers investors real-time price quotation and facilitates the trading and reporting of all secondary market activities. The key business components that contribute to the business of ETP are

(i) central order book for matching, trade reporting, and negotiation;

(ii) a comprehensive dissemination system for price per yield and trade information dissemination;

(iii) data storage for market history data referential maintenance for exchange administrator; and

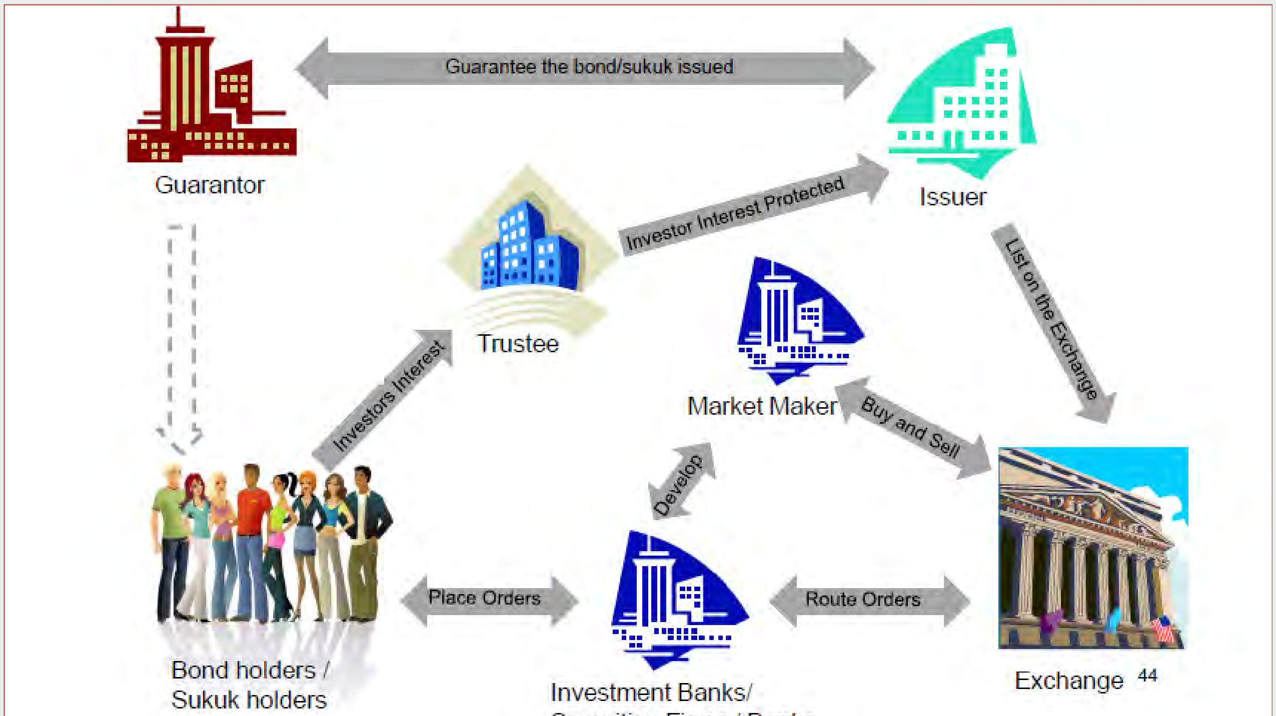
(iv) a real-time market surveillance system.

The ETP interfaces with other systems such as FAST and other information providers (e.g., Bloomberg and Reuters). However, 100% of the volume is conducted OTC via voice brokers and electronic message, and for the time being, there are almost no transactions processed by the ETP.

Exchange Trading

Bonds listed on Bursa Malaysia may be purchased through a dealer that is a member of the exchange, such as investment banks, or through *remisiers*. To trade in listed bonds, investors are required to open a depository account operated by BMD. The account is maintained by one of the member banks of the exchange acting as an authorized depository agent. The depository account works on the principle of a book-entry system or electronic clearing and settlement, and represents ownership and movement of the listed bonds. Institutional investors may open a depository

Figure: MY01 ETBS Landscape



Source: Bursa Malaysia

account directly with the BMD. Investors need to provide their depository account numbers when buying or selling listed bonds on the exchange. Listed bonds are normally traded in board lots of 1,000 units. Information on prices of listed bonds is readily available on the ETP.

The only bonds traded on the exchange are exchange traded bonds and *sukuk*, launched in early 2013 and specifically targeted to retail investors. At the moment, there is only one bond in this category **(Figure MY01)**.

CCP

CCP in the OTC Market
There is no CCP in the Malaysian OTC market.

CPP in the Exchange Market
BMSC is the clearing house for bond securities traded on Bursa Malaysia. BMSC provides the Bursa Clearing and Settlement System for participants on the exchange market, which electronically connects with the Bursa Trade System and Central Depository System.

Bond Settlement

Bond Settlement in the OTC Market
To subscribe or trade in debt securities, an investor must open an account with an authorized depository institution (ADI). ADIs are licensed financial institutions that are members of RENTAS and are allowed by BNM to hold SSTS securities on behalf of customers that are not members of SSTS. For members of SSTS, BNM is the authorized depository, crediting bondholders with scripless bonds for trading and transfers according to the Code of Conduct and Market Practices for Scripless Trading, and recording the holdings and transactions of each SSTS member institution. ADIs offer protection to investors with regard to payment of interest and redemption proceeds. They ensure secrecy of accounts, issue statutory acknowledgement receipts and monthly statements detailing

account holdings and transfers, and carry out the various responsibilities of depository institutions with regard to their customers. Dealers that act as ADIs maintain two accounts with SSTS: one for their own holdings and another for all the securities they hold in custody through which non-SSTS member transactions are cleared and settled. ADIs are required to maintain a separate account for each customer.

All securities trades are generally settled on a delivery-versus-payment (DVP) basis. For all government securities and scripless corporate debt securities, ownership and transfers are reflected as book entries in ADI custody accounts with BNM in RENTAS. For non-RENTAS members, such as institutional investors and other financial institutions, scripless securities can be transacted via their ADIs.

The settlement of primary and secondary market transactions in government securities and unlisted corporate debt securities take place through SSTS, which is part of RENTAS. RENTAS, established by BNM in 1999, comprises IFTS, which deals with large-value fund transfers, and SSTS, which allows the book-entry settlement and recording of holdings of scripless debt securities. A sale or purchase of securities between two parties involves a book-entry and intraday settlement of funds in the cash settlement account maintained with BNM. RENTAS—which has straight-through-processing (STP) capabilities—processes, transfers, and settles interbank funds and scripless transactions simultaneously in real time. It is a DVP Model 1 system based on the BIS definition; that is, securities and funds are settled gross throughout the day.

RENTAS provides local matching. The sell side transmits the unconfirmed sale advice to the buy side via RENTAS. The buyer shall, on receipt of an unconfirmed sale advice from the sell side, check the contents of the advice. If the contents are in order, the buy side shall confirm the deal immediately by transmitting to the sell side a sales confirmation advice, thereby concluding the local matching process. After confirmation, the sell side and buy side can access the confirmation report in RENTAS.

RENTAS contributes to the reduction of settlement risk in scripless securities transactions by providing a mechanism for DVP. This mechanism enables transfer instructions for both scripless securities and funds to be effected on a trade-by-trade basis, with final (unconditional) transfer of the securities from the sell side to buy side (delivery) occurring at the same time as the final transfer of the funds from the buy side to the sell side (payment). RENTAS utilizes the Corporate Information Superhighway (COINS), which is a nationwide, broadband network that supports multiprotocol and multimedia applications provided by Syarikat Telekom Malaysia Bhd., the communications network that links up participating financial institutions.

Bond Settlement in the Exchange Market

BMD operates CDS, which has created a scripless trading platform for trading bonds. CDS facilitates electronic securities transfer and trade settlement, and uses the book-entry form of recording ownership and movement of securities. BMD has been offering omnibus accounts since 2005. In the exchange market, a central matching facility was implemented in 4Q11 to cover only bonds traded on the exchange and settlement at BMD through the Institutional Settlement Service (ISS).[1]

Cash Settlement

The RENTAS IFTS is an RTGS system for the transfer and settlement of high-value, ringgit-denominated interbank funds and scripless securities transactions. RENTAS IFTS enables payment instructions between participants of the system to be processed and settled individually and continuously throughout the working day. All settled transactions are considered as final and irrevocable. Thus, the receiver can use the funds immediately without being exposed to the risk of the funds not being settled. This is in contrast to the former system, Sistem Pemindahan Elektronik Dana dan Sekuriti (SPEEDS), which was a deferred net settlement system, where payments were processed throughout the working day, but actual entries across the books of BNM were only affected at the end of the day. RENTAS IFTS,

[1] ISS is a service compliant with the Bank for International Settlements (BIS) DvP Model 2. BMSC acts as a CCP and guarantees payment and settlement.

being an RTGS system, can substantially reduce or eliminate settlement exposures for participants of the system. Besides reducing the settlement risk for interbank fund transfers, RENTAS IFTS can help reduce the risks in exchange for value settlement systems such as those for securities settlements. The system has the capacity to handle a higher volume of transactions than the former SPEEDS System, and incorporates better security features through the use of smart cards for authentication and transmission. A provision has also been made for international linkages to facilitate real-time DVP and real-time payment versus payment (PVP) should the need to directly connect with other LCY systems arise in the future.

Intraday credit is permitted in the market, and may depend on intermediaries' assessment of client standing. Overdraft is also available for technical reasons, such as time-zone differences, for up to 2 business days, and requires an advised credit line (or prefunding arrangement).

Overview of Corporate Bonds

Trading

OTC Trading

Corporate bonds are mainly traded OTC in Malaysia. In 1996, a mandatory requirement was imposed by BNM for all new issue of private debt securities to be in scripless form to improve the settlement process, thus there is no need to handle a physical certificate.

Exchange Trading

There are few listed corporate bonds in Malaysia.

CCP

There is no CCP in the OTC corporate bond market.

Bond Settlement

After trading, bonds are pre-matched by telephone and both sides of the trade must input trade data into the ETP. The sell side inputs settlement instruction into RENTAS-SSTS. RENTAS-SSTS performs settlement of listed and unlisted corporate bonds. Settlement in RENTAS is on a DVP basis. DVP settlement procedures are executed automatically on the value date once the buy side confirms settlement instruction, in the same manner as with government bonds.

Cash Settlement

RENTAS-IFTS performs cash settlement of corporate bonds in the same manner as with government bonds.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

Interest income is paid on fixed-income securities, and the terms and conditions are usually advised when the securities are issued. As such, the investor purchasing a security has complete information on the rate of interest and the frequency of payment. Interest payments are usually made annually or semi-annually, and are calculated on the actual number of days per 365-day cycle. For fixed-income securities dematerialized on the RENTAS-SSTS, interest and redemptions are credited directly into the RENTAS-SSTS participants' ADI accounts maintained with BNM on the payment date via RENTAS-IFTS. In turn, clients' accounts are credited with their entitlement on the same day.

Interest Payment and Redemption of Corporate Bonds

Interest on Malaysian corporate bonds is payable quarterly, semi-annually, or annually, depending on the cash flow of the issuer. Interest payments for corporate bonds are also managed by MyClear, where interest due is automatically credited to the RENTAS-SSTS participants' ADI account held with BNM via RENTAS-IFTS.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow of Malaysian government bonds has some differences with that of a typical DVP flow.

(i) **Pre-Settlement Matching**
There is no pre-settlement matching system in the Malaysian bond market.

(ii) **Bond Settlement**
Though there is trading report platform, ETP, in the Malaysian bond market, the platform does not send settlement instruction to a book-entry system. Instead of system linkage, the sell side inputs settlement instruction data into RENTAS-SSTS. After input, the buy side checks settlement instruction and sends affirmation back to RENTAS-SSTS if the contents are collect. RENTAS-SSTS adopts local matching and DVP Model 1 of the BIS definition. Since RENTAS consists of a book-entry system, RENTAS-SSTS, and a cash settlement system, RENTAS-IFTS, there is no need to send settlement instruction and confirmation between the book-entry system and RTGS system. In addition, RENTAS performs DVP simultaneously without locking the sell side's bond.

(iii) **Cash Settlement**
Therefore, cash settlement is performed within RENTAS, and there is no unique message between cash settlement system and the sell side and buy side. Settlement completion advice, sent from RENTAS to settlement participants, contains both bond and cash confirmation.

For further details, please refer to **Part 3 MY03 (Government Bond Transaction Flow for Domestic Trades (OTC))**.

DVP Flow of Corporate Bonds for Domestic Trades

The corporate bond transaction flow is similar to the government bond flow in Malaysia.

For further details, please refer to **Part 3 MY04 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

Scripless securities, including Malaysian government securities and selected debt securities, can also be settled internationally via major global custodian banks and international CSDs, such as Euroclear and Clearstream. Both of these international CSDs appoint selected ADIs, which are clearing members of RENTAS, as their clearing agents in Malaysia. Non-residents and offshore investors may also individually appoint ADIs that are RENTAS members as custodians of their investments. Most financial institutions are also members of the Society for Worldwide Interbank Financial Telecommunication (SWIFT), which facilitates the transmission and confirmation of cross-border payment and settlement instructions in foreign currencies.

For foreign investors, there are some restrictions in the Malaysian bond market, especially with regard to foreign exchange (FX) and cash controls. The Malaysian ringgit is a restricted currency and can only be traded onshore. There is no restriction on foreign participation in the FX market. Non-residents intending to purchase or sell ringgit must confirm that it is in relation to an underlying commitment, which may include purchases or sales of Bursa Malaysia securities. There is no restriction on the repatriation from Malaysia of capital, profits, and income earned. External accounts (EAs) are ringgit accounts held by non-residents in Malaysia and can be maintained at either a segregated or omnibus level. A non-resident may open and maintain any number of EAs, and there are no restrictions on the amount of ringgit funds that can be placed in the EAs.

For further details, please refer to **Part 3 MY05 (Bond Transaction Flow for Foreign Investors OTC Market / DVP)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payment and redemption of government bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **Paying Agent (PA)**
There are two types of agents: facility agent (FA) and paying agent (PA). FAs are licensed investment banks, commercial banks, Islamic banks, and other institutions approved by regulatory authorities that coordinate the issuance of debt securities. PAs are responsible for interest and redemption payments on behalf of an issuer. BNM, as the central bank, is appointed as a PA. FAs receive debit notification from RENTAS and payment instruction from issuers. FAs send payment instruction to PAs, which remit interest and redemption payment.

(ii) **CSD**
BNM has a CSD function and it possesses a book-entry system called RENTAS-SSTS. BNM also has its own account within RENTAS-SSTS for the purpose of interest and redemption payment. In Malaysia, a CSD does not need to arrange a tax holder list because there is no withholding tax for government bonds.

(iii) **Payment Flow**
RENTAS-IFTS, the central bank cash settlement system, is used for interest payment and redemption.

(iv) **Tax**
There is no withholding tax in Malaysia. Effective 11 September 2004, all fixed-income instruments (including debentures other than convertible loan stocks) approved by the Securities Commission and ringgit-denominated securities issued by the Government of Malaysia were made exempt from withholding tax for all categories of investors, including non-residents.

For further details, please refer to **Part 3 MY06 (Interest Payment Flow of Government Bond)** and **Part 3 MY07 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

The business flow of interest payment and redemption of corporate bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
A commercial bank is appointed as a PA. The PA requests interest payment instruction from the issuer and pays interest and principal to custodians on the issuer's behalf.

(ii) **CSD**
BNM has a CSD function and it possesses a book-entry system called RENTAS-SSTS. In Malaysia, there is no withholding tax for corporate bonds and CSD does not need to arrange a tax holder list.

(iii) **Payment Flow**
RENTAS-IFTS, the central bank cash settlement system, is used in the case of interest payment and redemption.

(iv) **Tax**
There is no withholding tax for corporate bonds in Malaysia.

For further details, please refer to **Part 3 MY08 (Interest Payment Flow of Corporate Bond)** and **Part 3 MY09 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

BNM adopts ISO15022 for its book-entry system.

Message Items

Typical message types are settlement instruction and settlement confirmation. Securities Market Practice Group (SMPG) defined 10 common elements of these two message types. Typical message items are compared with that of ISO20022 (sese.023 and sese.025).

For government and corporate bond settlement systems, the 10 common elements of RENTAS-SSTS are almost all the same as those of ISO20022.

Market Practices

Operating Hours

RENTAS opens at 8:00 and closes at 18:00 for ringgit bond and cash settlement.

Settlement Cycle

From an infrastructure viewpoint, same-day settlement is available in the Malaysian bond market. The standard settlement cycle is T+1 or T+2 for domestic transactions. For cross-border transactions, the settlement cycle is generally T+2. Nevertheless, some participants adopt T+3.

Fails

If the buy side has caused the delay or failure in settling the securities transaction, the sell side shall have the right to claim from the buy side the loss of interest on the amount due. On the other hand, if the sell side has caused the delay or failure to settle the securities transaction, the buy side shall have the right to claim from the sell side compensation on the amount due.

Intraday Liquidity Facility

The ringgit intraday credit facility in RENTAS is a credit line provided by BNM to participants during business hours to ensure that there is sufficient liquidity in RENTAS to effect settlements on a timely basis. BNM determines which participants are eligible for intraday credit. The intraday credit is granted in the form of collateralized borrowing against eligible securities. The eligible participants are provided with a collateral account (K account) to facilitate the earmarking of collateral securities for the intraday credit drawdown. The repayment of the intraday credit facility is automatically done whenever there are sufficient funds in the participant's settlement account to redeem the earmarked securities in their K account. At the ringgit settlement cut-off time (closing time), MyClear imposes a penalty on participants who fail to redeem their ringgit intraday credit facility.

Bilateral Netting

There is no bilateral netting scheme in Malaysia.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering
International Securities Identification Number (ISIN) is used for securities numbering, but local securities codes prevail.

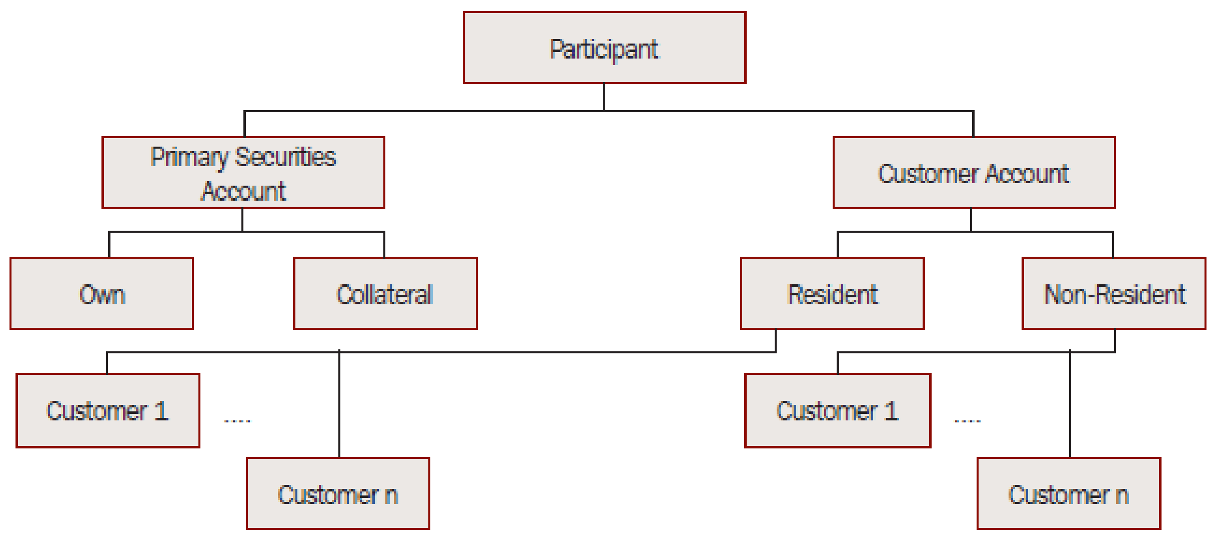
Financial Institution Identification
The Business Identifier Code (BIC) is used as part of a unique identifier code (UIC) for market participants.

Securities Account
RENTAS-SSTS is an omnibus account with a multi-layer structure. CSD participants manage their own and customer's bonds separately. The securities account structure in RENTAS-SSTS is illustrated in **Figure MY02**. Each participant has a primary securities account, a collateral account, as well as an unlimited number of optional customer sub-accounts. Securities belonging to domestic and foreign investors cannot be co-mingled in a single account.

Cash Account
The Cash Account Structure in RENTAS-IFTS is illustrated in **Figure MY03**. Every participant has a primary settlement account, a statutory reserves account, and an unlimited number of optional sub-accounts.

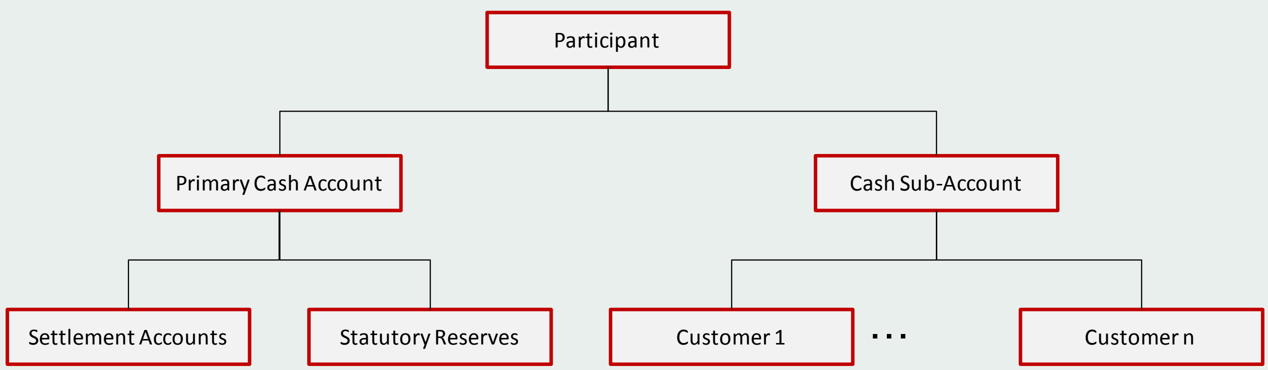
Character Code and Language
Unicode UTF-8 is adopted. The language used for payment and settlement systems is English.

Figure: MY02 Securities Account Structure in RENTAS



Source: Malaysian Electronic Clearing Corporation Sdn. Bhd.

Figure: MY03 Cash Account Structure in RENTAS



Source: Malaysian Electronic Clearing Corporation Sdn. Bhd.

Medium- to Long-Term Strategies

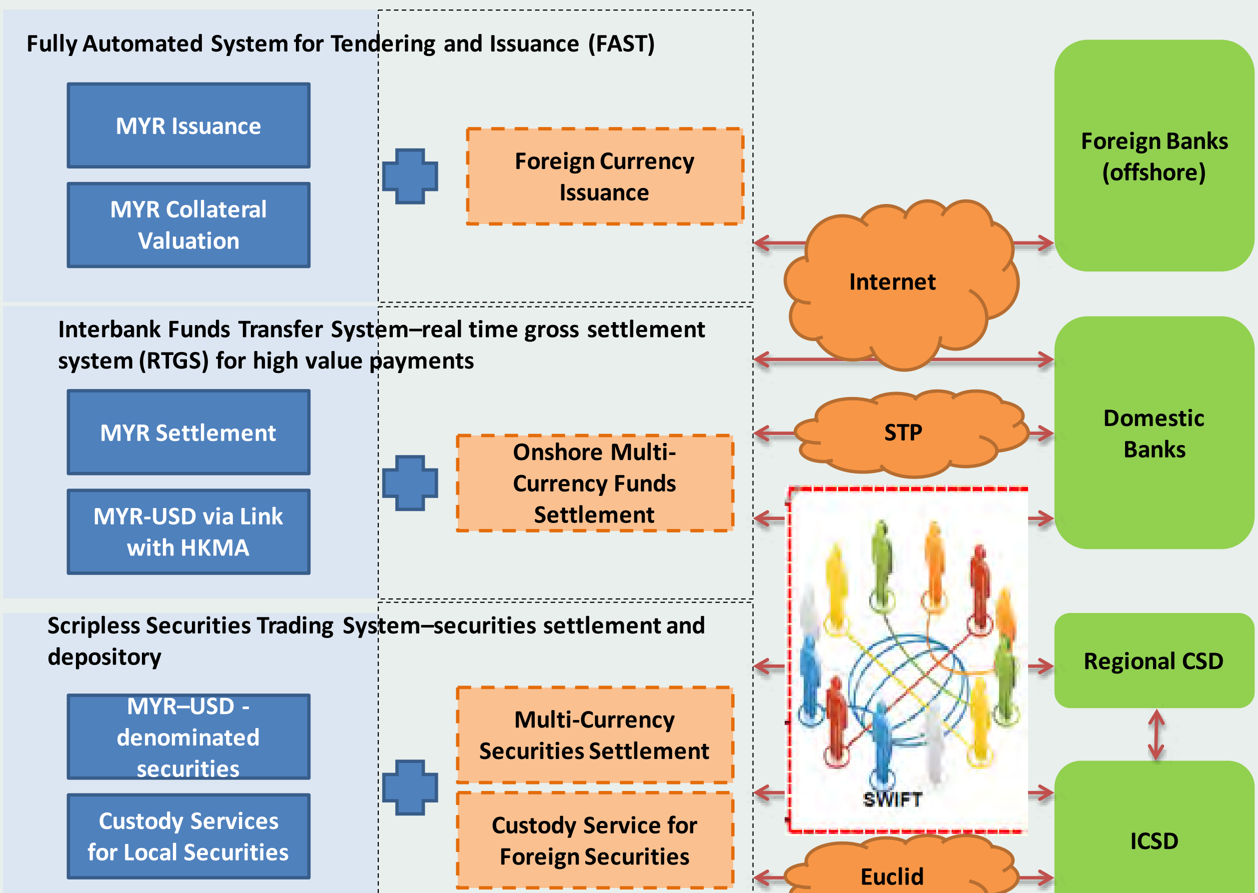
BNM has tried to enhance RENTAS. The present covers ringgit and United States (US) dollar-denominated securities, and provides custody services for local securities. On the other hand, the future RENTAS system will be able to settle multi-currency securities and supply custody service for foreign securities (**Figures MY04, MY05**). Connecting with regional CSDs and international CSDs will make these plans a real possibility.

SC Malaysia drew up a Capital Market Masterplan 2 (CMP2) in 2011. CMP2 is a comprehensive plan designed to provide clarity on the strategic direction of the Malaysian capital market for the next decade. CMP2 advocates the importance of a clear and holistic roadmap for the development of the information technology infrastructure needed to ensure greater synchronization of industry strategies and cost-effective investments in technology. The roadmap will cover

(i) benchmarking implicit and explicit transactions and post-trade costs to identify areas for improvement,

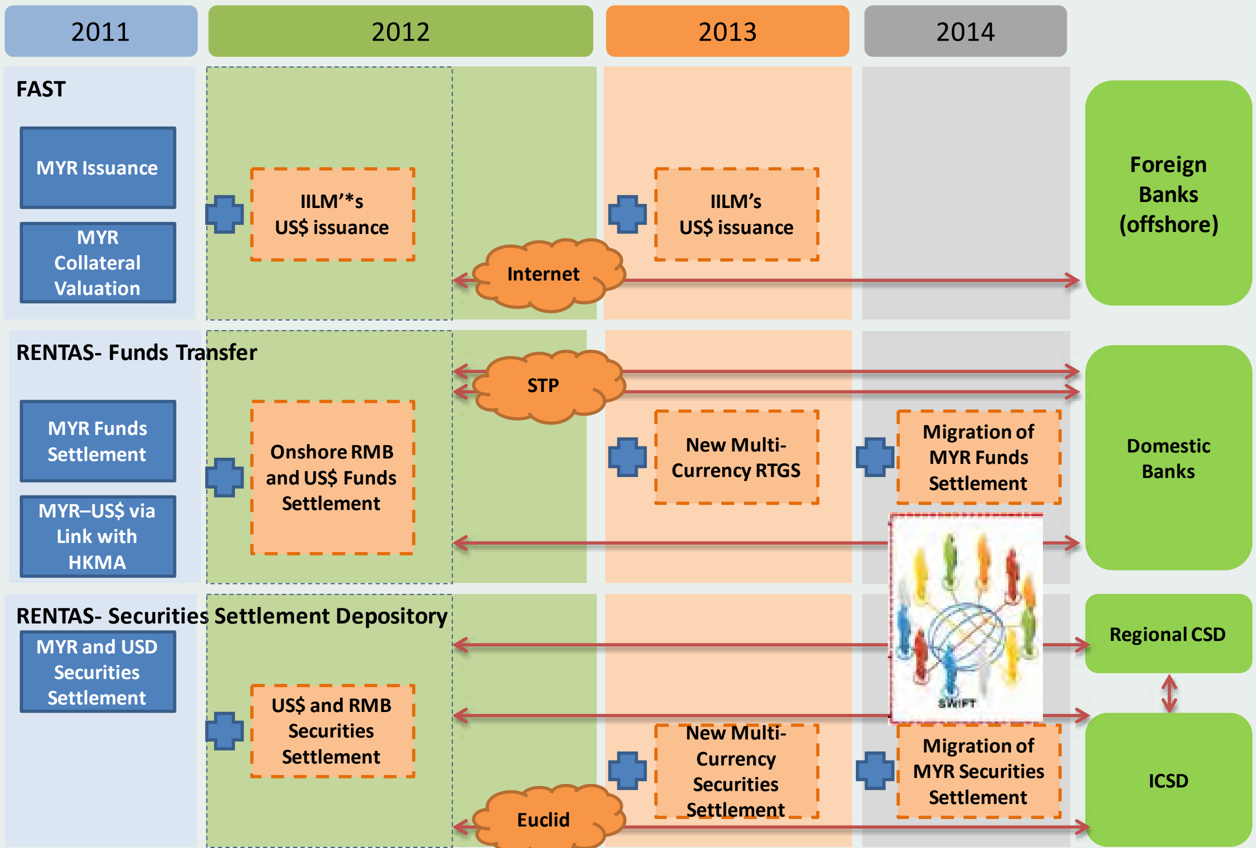
(ii) enhancing post-trade settlement efficiencies through the implementation of STP capabilities, including identifying required improvements in clearing and settlement; depository, custody, and collateral management practices; and the requirements to facilitate integration of clearing and settlement with the payments system;

Figure MY04 Overview of the future RENTAS System



Source: Bank Negara Malaysia.

Figure MY05 Overview of the future RENTAS System



Source: Bank Negara Malaysia.

*International Islamic Management

(iii) establishing the technological standards, protocols, and capacity requirements to ensure greater inter-operability across a broad range of systems, data environments, and entities in various market segments;

(iv) identifying infrastructure improvements to support technology-driven innovation and business strategies to enhance service capabilities, thereby enabling intermediaries and participants to undertake specialized functionalities in trading, products, and services on a cost-effective basis and supporting enhancements in customer interfaces and back-office connectivity;

(v) addressing information asymmetry challenges through strengthening the infrastructure for cost-effective and efficient data capture, information gathering, analysis, disclosure, and corporate communications; and

(vi) establishing a data framework for taxonomy with unified naming conventions while also developing data management policies to ensure data consistency and integrity to meet requirements for the aggregation and automation of data flows.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Philippines (PH)

Bond Market Infrastructure

Overview of Bond Market

The Philippine bond market is comprised of the over-the-counter (OTC) market and the exchange market. According to OTC rules in Philippines, secondary trading of government and corporate bonds must be conducted through self-regulatory organizations (SROs). Therefore, trading participants should be members of an SRO. To date, the Philippines Dealing and Exchange Corporation (PDEx) is the only SRO in Philippines and almost all transactions of government and corporate bonds take place in PDEx. It operates the Fixed-Income (FI) Trading System, which includes two types of trading platform for debt securities: the Negotiated Dealing Platform and the Auto Match Platform. The Negotiated Dealing Platform is primarily for professional markets with relatively large trading transactions while the Auto Match Platform caters to the public market (through broker participants) with smaller volumes.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the absolute amount of local currency (LCY) government bonds outstanding in the Philippines at the end of 1Q13 was US$85.18 billion, while LCY corporate bonds reached US$13.04 billion.

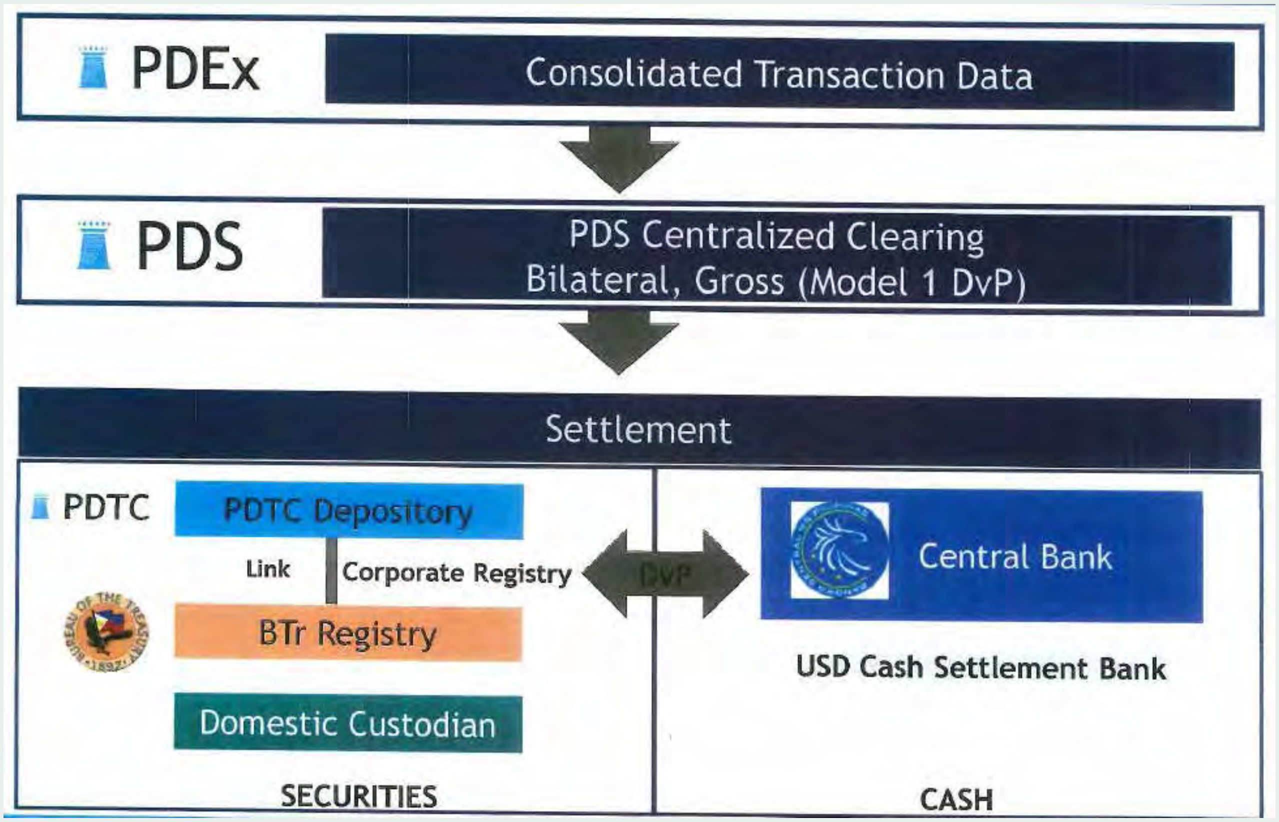
The Bureau of Treasury (BTr) is the central securities depository (CSD) for government bonds (Treasury bills and Treasury bonds). BTr owns and operates the Registry of Scripless Securities (BTr-RoSS), which is the official registry of absolute ownership, legal or beneficial titles, or interest in government bonds. Hence, all government bond transactions are settled in BTr-RoSS. The Philippines Depository and Trust Corporation (PDTC) is the CSD for corporate bonds. It also acts as a sub-registry for government bonds in some cases.

After the trade is executed in the FI Trading System, the trade data are sent to BTr-RoSS via the PDEx-RoSS straight-through-processing (STP) Facility or the electronic delivery–versus-payment (eDvP) System. The FI Trading System automatically chooses the system used for the settlement process—either through PDEx-RoSS or the eDvP System—according to the parties involved in a trade.

The PDEx-RoSS STP Facility is for government securities eligible dealers (GSEDs)[1] and transmits

[1] GSEDs are dealers licensed by the Securities and Exchange Commission to engage in both the purchase and sale of government securities. They are acknowledged by the BTr as eligible to participate in the auction upon application and proof of unimpaired capital of at least PHP100 million, compliance with statutory ratios, subscription of an electronic link to BTr's Automated Debt Auction Processing System and BTR-RoSS, and the existence of a demand deposit account with the BSP.

Figure PH01: Clearing and Settlement Environment of Philippine Bond Market



Source: Philippine Dealing System Holdings Corp. and subsidiaries.

trade data directly to BTr-RoSS. The eDvP System is for non-GSEDs[2] and transmits trade data to PDTC.

Cash settlement is performed in the Philippine Payment and Settlement System (PhilPaSS), which is owned and operated by the Bangko Sentral ng Pilipinas (BSP).

When trading participants do not have an account with BSP, other settlement banks are involved (**Figures PH01, PH02**).

Please refer to **Part 3 PH01 (Government Bond Market Infrastructure Diagram)** and **Part 3 PH02 (Corporate Bond Market Infrastructure Diagram)**.

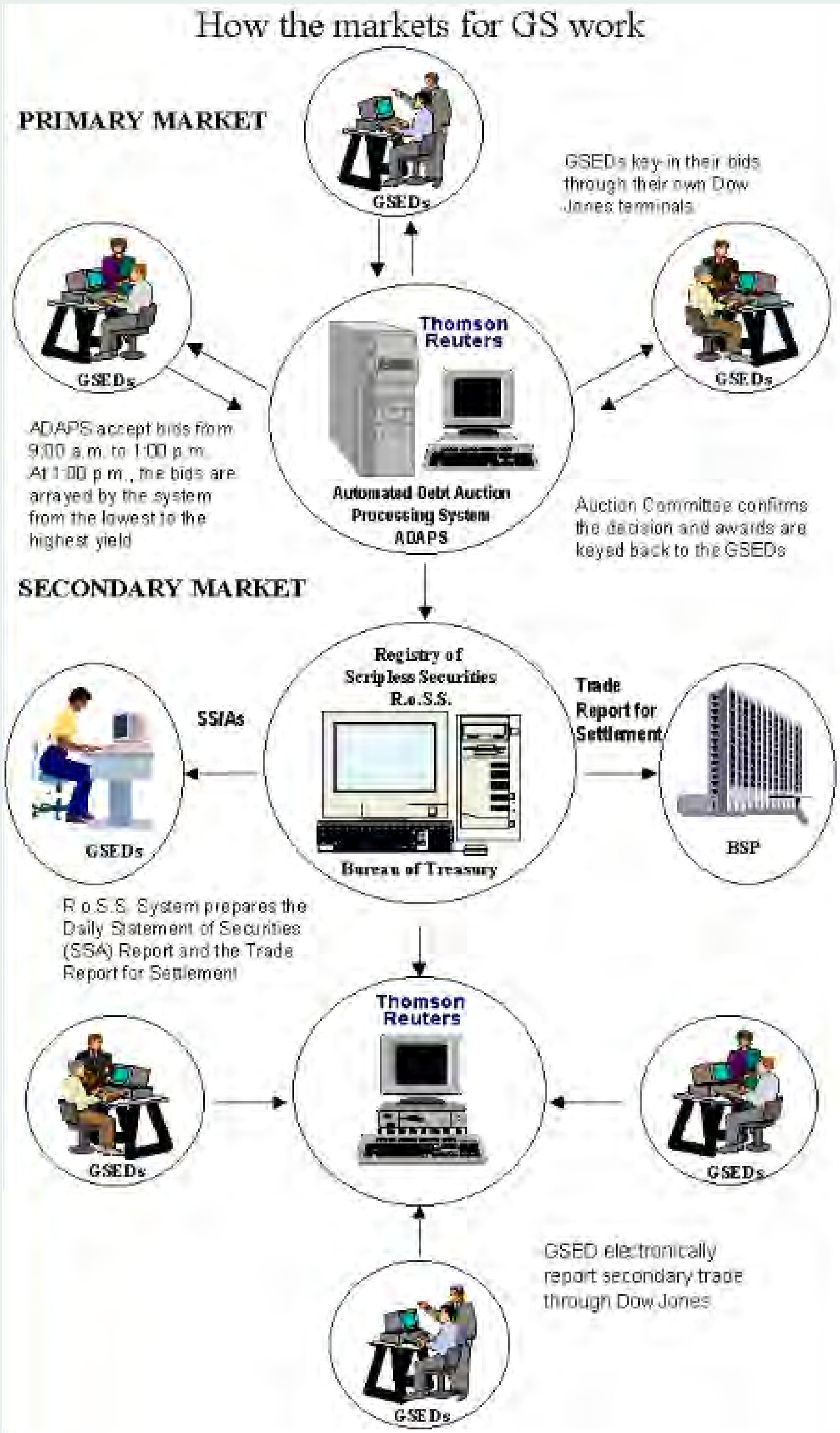
Description of Related Organizations

Bureau of Treasury (BTr)

BTr is the CSD for government securities (Treasury bills and government bonds), and BTr assists in the formulation of policies on investment and capital market development. It owns and operates BTr-RoSS, which is the official registry of absolute ownership, legal or beneficial titles, or interest in government bonds. BTr-RoSS monitors and maintains official records of ownership of government securities. In addition, BTr-RoSS monitors and administers government securities coupons and principal payments.

[2] Non-GSEDs are dealers that may also engage in the purchase and sale of government securities but only from and to GSEDs. Any institution may be accepted as a non-GSED after submission of proof that they are capable of buying and selling of securities via an application of membership to BTr-RoSS and accomplishment of an Oath of Undertaking that they will abide by all the rules and provisions governing the system.

Figure PH02: How the Markets for Government Securities Work



Source: Bureau of the Treasury.

Securities and Exchange Commission (SEC)
SEC was established on 26 October 1936 by virtue of the Commonwealth Act No. 83, also known as the Securities Act. SEC's establishment was prompted by the need to safeguard public interest in view of the local stock market boom at that time. Operations began on 11 November 1936. Its major functions included registration of securities, analysis of every registered security, evaluation of the financial conditions and operations of applicants for security issue, screening of applications for broker's or dealer's license, and supervision of stock and bond brokers as well as the stock exchanges. On 1 December 2000, SEC was reorganized as mandated by Republic Act 8799, also known as the Securities Regulation Code.

Bangko Sentral ng Pilipinas (BSP)
BSP is the central bank of the Republic of the Philippines. It was established on 3 July 1993. It administers PhilPaSS and acts as a cash settlement entity in the bond market.

Philippine Dealing and Exchange Corporation (PDEx)
PDEx is licensed by SEC as an exchange under the provisions of Securities Regulation Code. PDEx is an operating subsidiary of the Philippine Dealing System Holdings Corporation (PDS Group).

Philippine Depository and Trust Corporation (PDTC)
PDTC was founded as the CSD in the Philippine bond market in 1995. It is owned by the PDS Group. PDTC provides depository and settlement services for private bonds and government securities.

Overview of Government Bonds

Trading

OTC Trading
In March 2005, the Fixed-Income Exchange (FIE) was established in the Philippines. FIE is operated by PDEx, which is tasked to operate and maintain the trading system for fixed-income securities. It runs the FI Trading System (Negotiated Dealing Platform). Its member brokers and dealers are only allowed to engage in OTC transactions. When the sell side and buy side arrange or negotiate a trade outside the FIE, they have to execute the trade on the FI Trading System within 1 minute from conclusion of negotiation.

Traders can communicate, negotiate, and deal transactions from their respective offices and the system ensures that all information sent to each transacting party is kept confidential and cannot be viewed by the public.

Exchange Trading
In February 2008, PDEx launched the Auto Match Dealing Platform where broking participants can post orders received from retail investors. With this platform, retail investors are given equal access to the various fixed-income securities listed on the trading board. The transactions on this platform are captured automatically and broadcast on a real-time basis **(Figures PH03, PH04)**.

Clearing and Central Counterparty

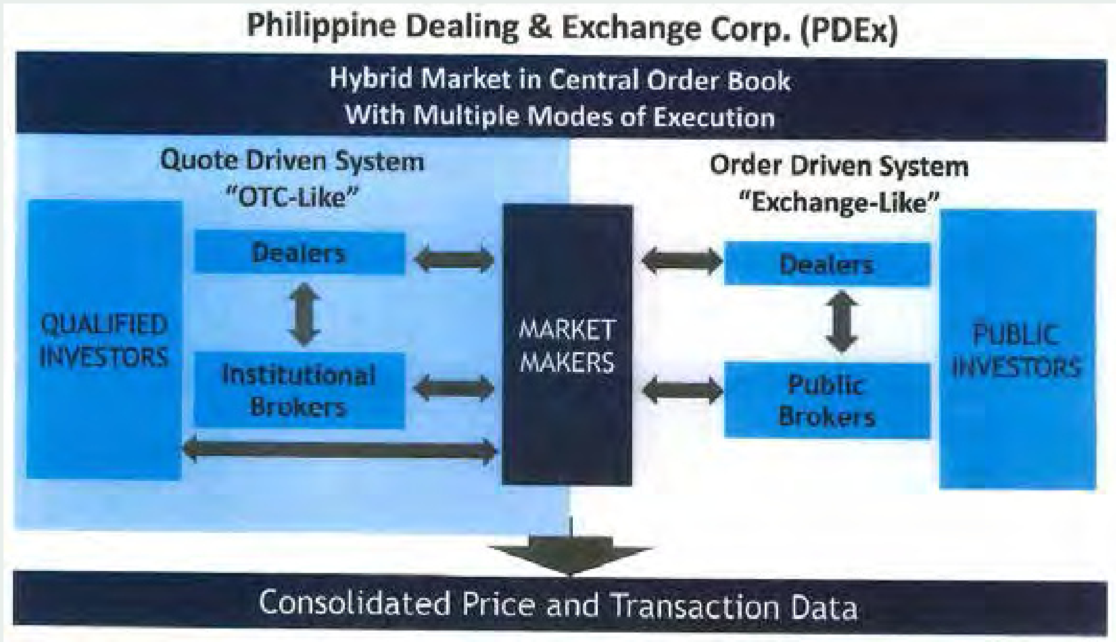
There is no clearing and central counterparty (CCP) in either the OTC market or the exchange market.

Bond Settlement

BTr is the CSD for government bonds. BTr established BTr-RoSS for depository and settlement of government securities in November 1996. BTr-RoSS settles transactions in delivery-versus-payment (DVP) Model 1 of the Bank of International Settlements (BIS) definition.

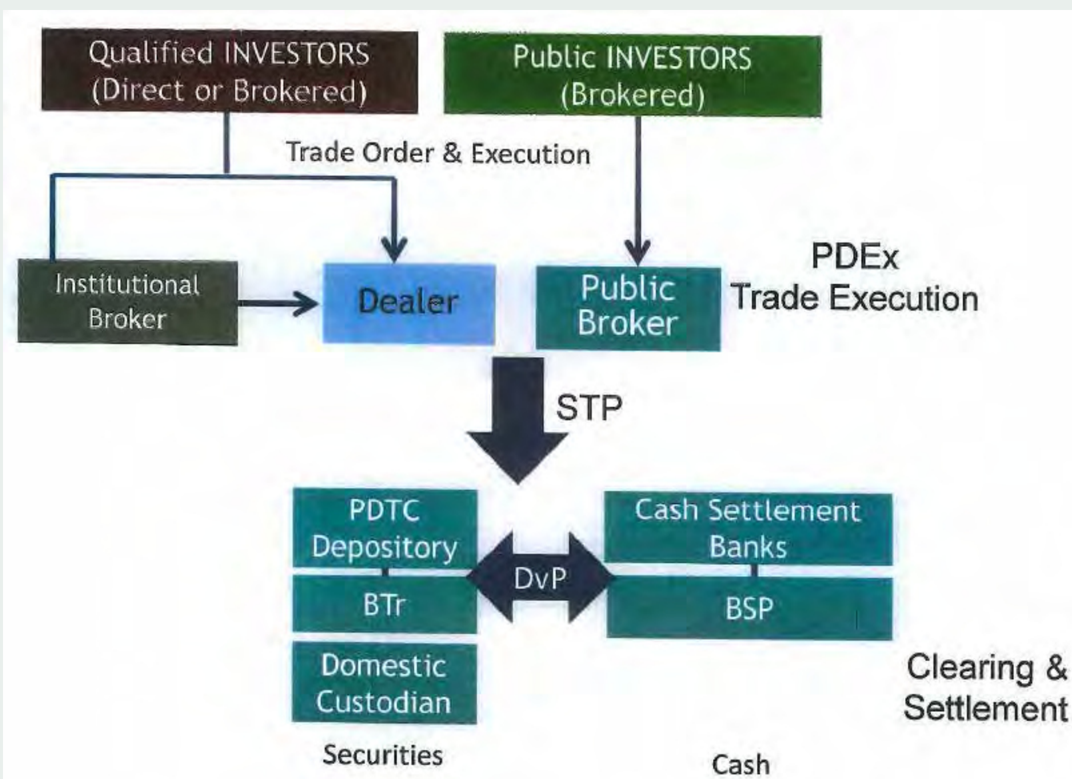
Under BTr-RoSS, GSEDs maintain a securities account for the official recording of scripless government securities. GSEDs also maintain securities sub-accounts in the name of their clients for the sake of segregating scripless government securities sold to clients in the secondary market under one account, provided that the GSED maintains complete records of ownership and other titles of their clients. GSEDs desiring to utilize DVP and Real-Time Gross Settlement (RTGS) systems in secondary market transactions shall open a settlement account

Figure PH03: Trading Environment of Philippine Bond Market)



Source: Philippine Dealing System Holdings Corp. and subsidiaries.

Figure PH04: Domestic Investment Process



Source: Philippine Dealing System Holdings Corp. and subsidiaries.

with BSP or any bank of their choice, which, like the BSP, shall agree to service their settlement of scripless securities trade immediately upon notice of a transaction concluded. All banks and financial institutions that have regular demand deposit accounts with BSP may serve as settlement banks in connection with the government securities transactions of BTr-RoSS account owners.

GSEDs have the option to (i) fund their settlement account before the start of trading hours at 9:30, or (ii) avail of an overnight credit line with the settlement bank, which shall be deemed drawn whenever a GSED's settlement account is negative or insufficient to settle a trade, otherwise the transaction shall be queued until sufficient funds are credited to the settlement account. Before the implementation of the familiarization period for Circular 266, trading starts at 9:30 and ends at 12:00. However under Circular 266, banks can now deal with BSP as well as among themselves until 15:00. GSEDs have until 14:00 to register their transactions with BTr-RoSS. This gives BTr-RoSS sufficient time until 16:00 within which to clear the scripless securities and settle the payment thereof. Trades can be settled manually or electronically.

BTr-RoSS checks securities in the sell side's securities account and earmarks these for transfer. After the cash settlement is processed, BTr-RoSS transfers the earmarked securities from the sell side's securities account to the buy side's account.

For non-GSEDs government securities trades, PDTC provides depository and settlement services as a sub-registry. PDTC also adopts DVP Model 1 of the BIS definition.

Cash Settlement

Trading between GSEDs is settled by a central bank account. BSP administers the Philippines's RTGS system, which is called PhilPaSS. All GSEDs have their BTr-RoSS accounts for bond settlement and BSP PhillPass accounts for cash settlement. In this case, the RoSS-PhilPass DVP system sends settlement data to BSP-PhilPass. Cash settlement is made through the debit or credit of GSEDs' accounts. BSP also provides an intraday overdraft facility **(Figure PH05)**.

When one or both parties of trade are non-GSEDs, and both do not have a BSP account, the trade is settled with a cash settlement bank.

Overview of Corporate Bond

Trading

OTC Trading
The Philippines has a quote-driven market for corporate bonds. Like the OTC market, trade participants negotiate before they input the trade data to PDEx.

Exchange Trading
In the Philippines, there is also an order-driven market for corporate bonds. Trade participants put orders into PDEx directly.

CCP

There is no CCP in the OTC market.

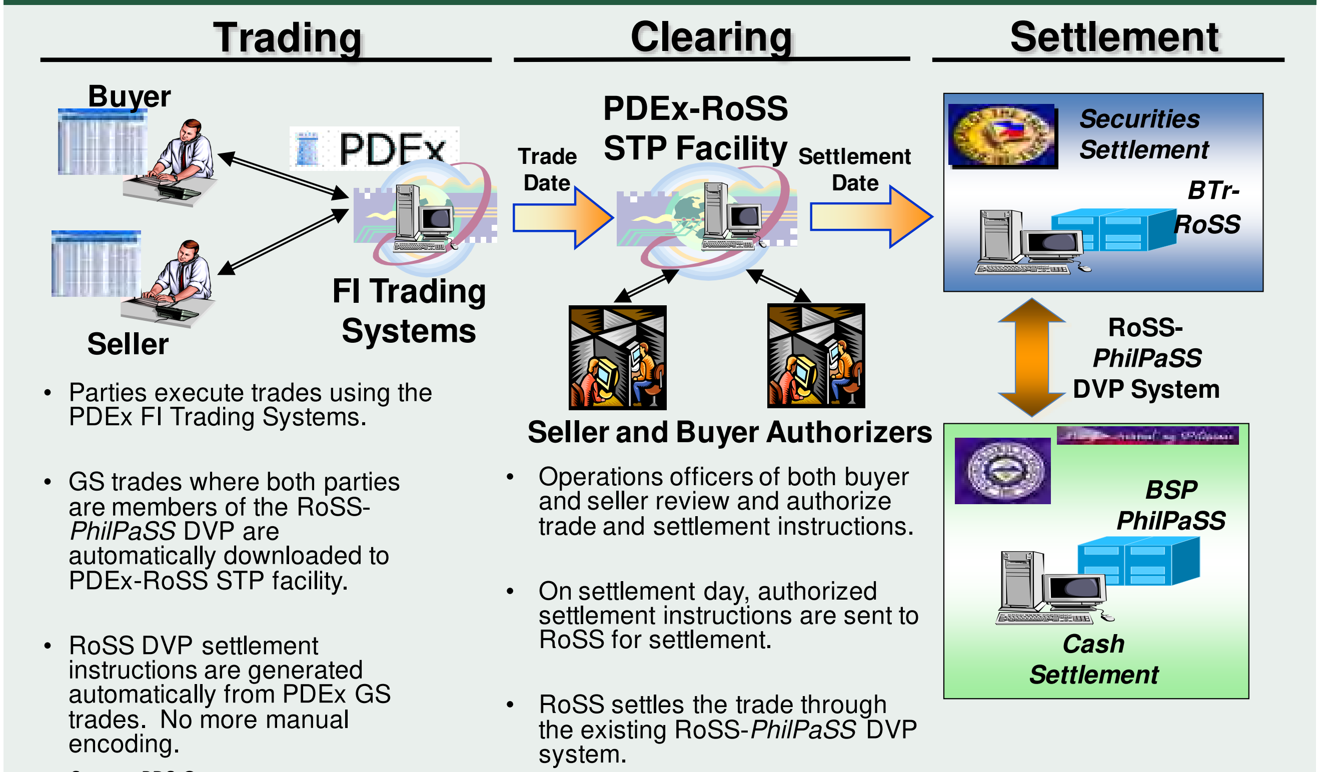
Bond Settlement

PDTC is the CSD for corporate bonds. PDTC settles transactions in DVP Model 1 of the BIS definition. Securities held in the depository are registered under the name of the PDTC nominee with the beneficial ownership reflected via book-entry credits to the securities accounts of the depository participants. While PTDC conducts bond settlement, the eDVP System in PDEx handles the whole DVP process for corporate bond transactions.

Cash Settlement

Cash settlement of corporate bond transactions is executed by BSP's PhilPaSS or cash settlement banks. If both sides have cash accounts with BSP, cash settlement is executed using PhilPaSS. If they do not have an account with BSP, cash settlement is conducted through accounts of cash settlement banks. On settlement day, bond settlement is executed on PDTC. After earmarking sold bonds in the selling investors account, PDTC

Figure PH05: Settlement Process for Government Bond Trades where Both Parties are Government Securities Eligible Dealers (GSEDs)



Source: PDS Group.

sends settlement status to the eDVP System, which sends cash settlement instruction to BSP or a cash settlement bank according to the status of the participants **(Figure PH06)**.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

Interest and coupon payments paid either quarterly, semi-annually, or annually are credited to the buy side and sell side's cash accounts upon the actual receipt of funds. Funds are usually received on the contractual payment date and credited to the buy side and sell side's accounts on the same day.

On interest payment and redemption, BTr credits the settlement account of each GSED with the amount of interest payment, net of tax on the coupon due date. Likewise, BTr credits the settlement account of each GSED with the redemption amount of the government securities on the maturity date.

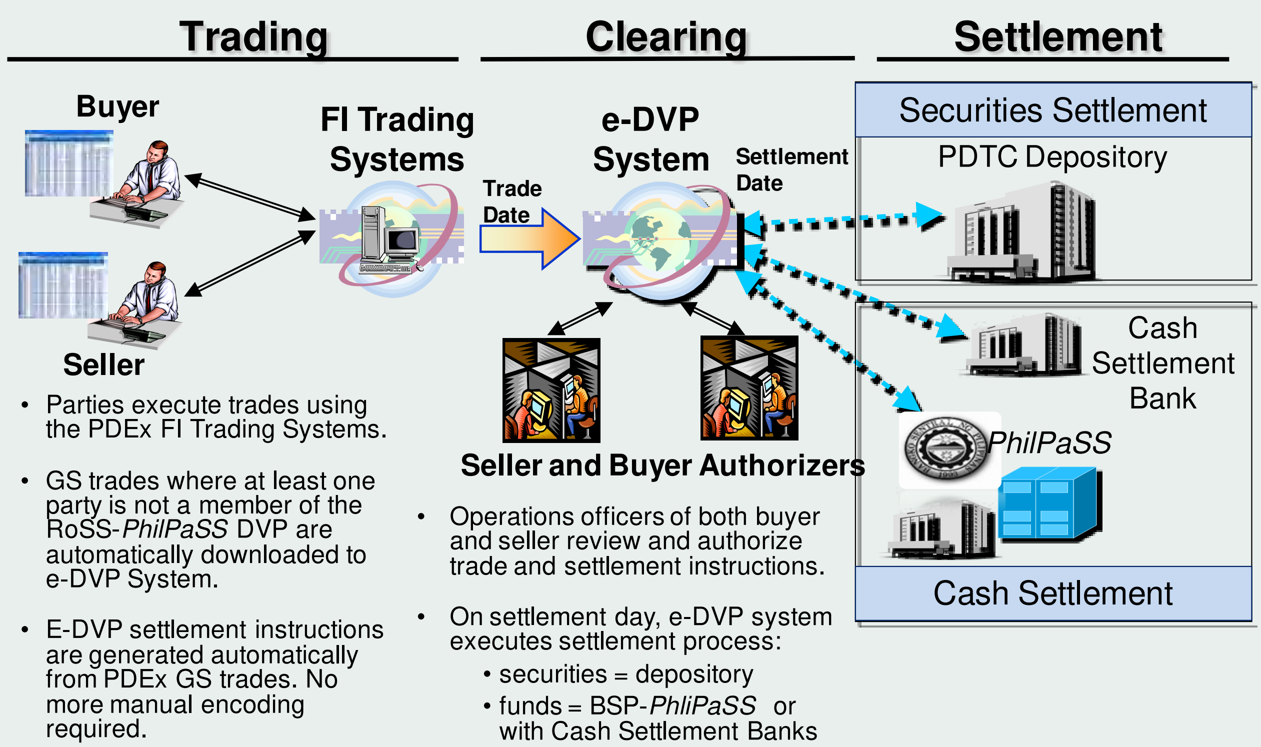
Custodians advise their clients of all income information available by SWIFT MT564 advice. Interest payment notification is sent 14 days before payment date, while redemption notification is sent 30 days before payment date.

On the day of credit, MT566 advice is sent giving details of the amount credited.

Interest Payment and Redemption of Corporate Bonds

Interest income from corporate bonds is paid quarterly. Interest proceeds are disbursed to

Figure PH06: Settlement Process for All Corporate Bond Trades and Government Bond Trades



Source: PDS Group.

bond holders on the pay date, net of withholding tax deducted at source. Redemption proceeds are paid either gross or at face amount.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow in Philippines government bond OTC market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
PDEx also provides a pre-settlement matching function with PDEx-RoSS STP Facility or a eDVP System. The FI Trading System automatically chooses the system used for the settlement process—either through the PDEx-RoSS STP Facility or the eDvP System—according to the parties involved in a trade. After the central post-trade matching, the FI Trading System sends trade data to the PDEx-RoSS STP Facility or the eDVP System internally. Then, the PDEx-RoSS STP Facility or the eDVP System sends settlement detail to trade participants, who authorize the details.

(ii) **Bond Settlement**
Government bonds are settled in a book-entry system called BTr-RoSS, which is owned and operated by BTr. After pre-settlement matching, the PDEx-RoSS STP Facility or eDVP System directly sends settlement data to the relevant CSDs. In cases of GSEDs, BTr-RoSS holds bonds in the sell side's account and sends the settlement data to BSP for DVP settlement. When BTr-RoSS receives the

notice of cash settlement from BSP, BTr-RoSS conducts bond settlement simultaneously. For the non-GSEDs market, the eDVP System controls the whole DVP process connected with PDTC as a sub-registry of BTr-RoSS.

(iii) **Cash Settlement**
For GSEDs transactions, after the receipt of settlement data from BTr-RoSS, BSP transfers cash from the buy side's account to the sell side's account. On the other hand, non-GSEDs transactions are settled by cash settlement banks instead of BSP, and settlement data is transferred from the eDVP System instead of BTr-RoSS.

For further details, please refer to **Part 3 PH03 (Government Bond Transaction Flow for Domestic Trades GSEDs Market / DVP)** and **Part 3 PH04 (Government Bond Transaction Flow for Domestic Trades non-GSEDs Market / DVP)**.

DVP Flow of Corporate Bonds for Domestic Trades

The business flow in the Philippine corporate bond OTC market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
In the Philippines corporate bond market, there is no pre-settlement system. The FI Trading System performs post-trade matching instead of pre-settlement matching.

(ii) **Bond Settlement**
Corporate bonds are settled in PDTC. After post-trade matching, the FI Trading System sends trade data to the eDVP system and PDEx sends settlement detail, based on the trade data, to both the sell side and buy side. If both the sell side and buy side affirm the settlement detail, they send settlement instruction for DVP to the eDVP System, which confirms the cash balance of the buy side and sends earmark instruction to PDTC Depository. PDTC Depository earmarks bond in the sell side's account and sends back settlement status to the eDVP System.

(iii) **Cash Settlement**
Cash settlement is executed by BSP or cash settlement banks, thus data are transferred between the eDVP System and BSP or cash settlement bank. For instance, the eDVP System sends cash settlement instruction to BSP, which executes cash settlement. After cash settlement, BSP sends a cash settlement report to the eDVP System as well as to both sides of settlement.

For further details, please refer to **Part 3 PH05 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

Foreign investors are not subject to any restrictions regarding foreign exchange (FX) trades with underlying investment, pre-funding, and third-party FX.

The Consolidated Foreign Exchange Rules and Regulations of BSP, as outlined in Circular 1389, require foreign investments to be registered with BSP in order to obtain a Bangko Sentral Registration Document (BSRD). This document is needed if foreign exchange is purchased from the banking system to service future remittances of profits and earnings, and/or capital repatriation **(Figure PH07)**.

Overdrafts for foreign investors are not allowed under local regulations.

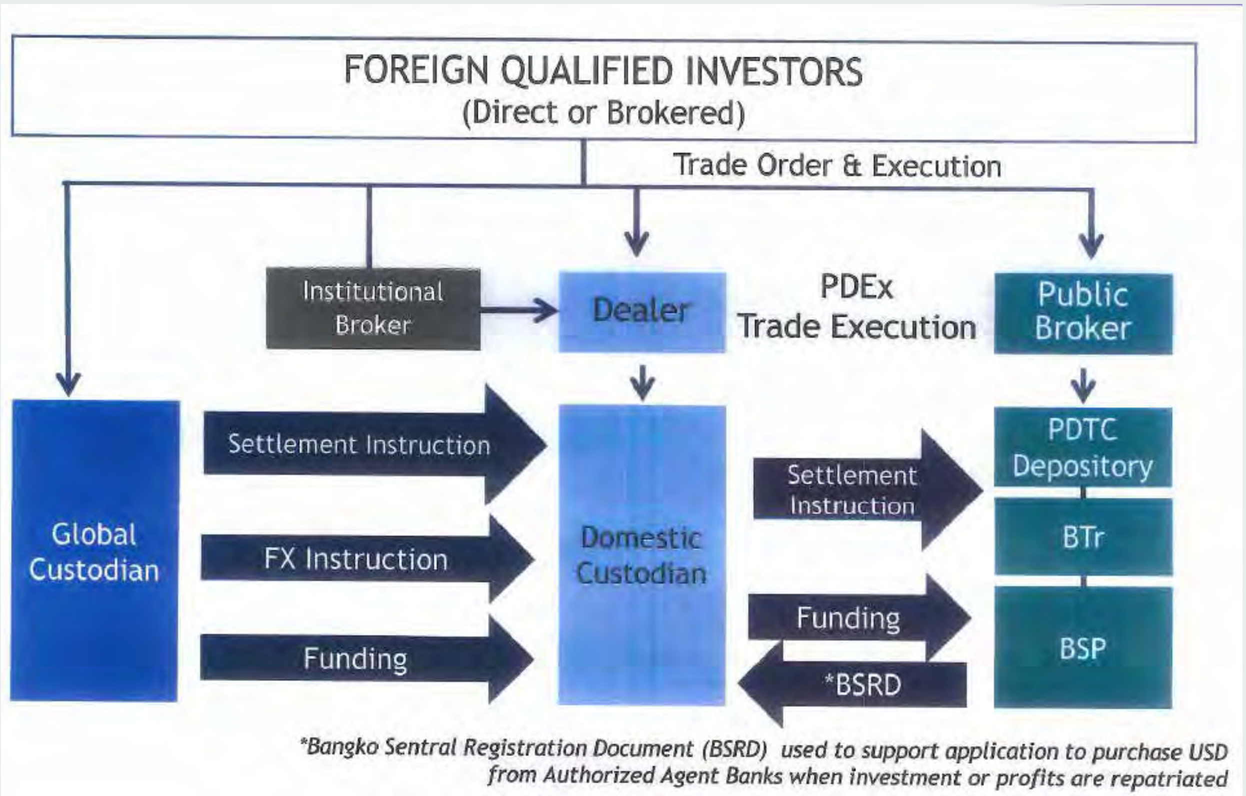
For further details, please refer to **Part 3 PH06 (OTC Bond Transaction Flow for Foreign Investors OTC Market / DVP)**.

Interest Payment and Redemption of Government Bonds

Interest payment and redemption flows of government bond in Philippines are similar to a typical flow.

(i) **Paying Agent (PA)**
BTr plays multiple roles regarding government bond issuing. BTr is issuer of

Figure PH07: Foreign Investment Process



Source: Philippine Dealing System Holdings Corp. and subsidiaries.

government bonds and also functions as PA. BTr calculates the amount of interest and instructs BSP to pay interest to custodians.

(ii) **CSD**
BTr also functions as a CSD for government bonds through BTr-RoSS.

(iii) **Payment Flow**
Interest and principal are transferred from BTr's account to a BTr-RoSS participant account through a Regular Demand Deposit Account (RDDA) in BSP. Then, the participant credits the bond holder's account.

(iv) **Tax**
The Philippine government imposes income tax on government bonds. The tax on interest is deducted at source by the withholding agent. BTr, which is both the issuer and PA of government bonds, acts as the tax withholding agent.

(v) **Other Issues**
As mentioned above, BTr acts as both bond issuer and PA; as a result, there is no request and instruction between issuer and PA. The PA does not notify CSD participants of interest payments in advance. BSP transfers cash directly from BTr accounts to CSD participants account because BTr acts as the PA.

For further details, please refer to **Part 3 PH07 (Interest Payment Flow of Government Bond)** and **Part 3 PH08 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

(i) **PA**
Issuers of corporate bonds appoint a commercial bank as a PA. In addition, PDTC, the designated CSD for corporate bonds, also plays a partial role as a PA because it sends payment instruction to BSP.

(ii) **CSD**
PDTC acts as the CSD for corporate bonds. PDTC has cash accounts in BSP for the sake of interest payments because it does not have a banking license and payment infrastructure.

(iii) **Payment Flow**
Interest and principal are transferred from an issuer's account to PDTC's RDDA in BSP via PDTC's account with the issuer's payment banks. Then, PDTC instructs BSP to transfer cash from its RDDA to a PDTC participant account. Finally, the participant credits the bond holder's account.

(iv) **Tax**
The Philippine government imposes income tax on corporate bonds. The tax on interest is deducted at source by the withholding agent. For corporate bonds, the issuer acts as the tax withholding agent.

(v) **Other Issues**
CSD shares PA functions. It sends the payment request and payment instruction to BSP. The PA does not notify CSD participants of interest payment in advance.

For further details, please refer to **Part 3 PH09 (Interest Payment Flow of Corporate Bond)** and **Part 3 PH10 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

BTr-RoSS adopts a proprietary format. PDTC also adopts a proprietary format.

Message Items

PDEx provides an input interface for settlement instruction and confirmation to participants in both the government and corporate bond markets.

Regarding the 10 common elements as defined by the Securities Market Practice Group (SMPG), PDEx has all 10 common elements as mandatory items in its message format in settlement instruction and confirmation.

Market Practice

Operating Hours

For government bond settlement, BTr-RoSS opens at 9:30 and closes at 15:00. Participants must register their transaction with BTr-RoSS by the 14:00 cut-off time.

For corporate bond settlement, PDTC opens at 8:00 and closes at 18:00. The cut-off time for cash settlement instruction of corporate bond is 16:00.

Settlement Cycle

Regarding government bonds, the settlement cycle varies from T to T+3. The corporate bond market does not have a standard settlement cycle. Rather, settlement is negotiable.

Fails

Securities and Clearing Corporation of the Philippines (SCCP) imposes penalties on brokers immediately upon failure to pay cash or deliver securities for their clearing obligations at noon on T+3.

If a government bond transaction fails to settle by the deadline in BTr-RoSS, the trade is automatically canceled. A GSED can re-input the transaction once the availability of cash and securities is confirmed. BTr reserves the right to suspend or levy penalties against GSEDs that fail transactions.

Market regulations allow brokers to settle a trade until S+1 at 9:15, after which the SCCP executes a buy-in or sell-out on S+1 at 10:00 against the broker on any open trades.

A trade is bought-in at the prevailing offer or market price as of execution of the buy-in. If no offer price is set, the buy-in will be executed using the last closing price plus two ticks, the last transaction price or the current offer price, whichever is the lowest. The sell-out price is the prevailing bid or market price as execution of the sell-out. If no bid price is set, the sell-out is executed using the last closing price less two ticks, the last transaction price, or the current offer price, whichever is the highest. For both buy-ins and sell-outs, the defaulting broker must bear any negative cost differential between the buy-in or sell-out price and the contract price. The counterparty for failed trades assumes any financial loss. The broker may, at its own discretion, pass on incurred penalties and various costs to the defaulting client or final beneficial owner, including PDTC charges, commissions, and clearing charges.

SCCP released Memorandum No. 01-0112 to its clearing members in January 2012 to provide proposed amendments to the schedule of fees, fines, and penalties of SCCP rules and operating procedures. The SCCP proposed to differentiate penalties for late settlements versus settlement fails. Late settlements are those cash or securities settled after the 12:00 market cut-off, but not later than 14:00 on settlement date (T+3). A settlement made after 14:00 on SD is regarded as a settlement fail.

A penalty of PHP1,000 plus 0.00125% of the value of the cash or securities fail, compounded daily until paid, is levied for late cash or securities. For settlement fails, a penalty of PHP1,000 plus 0.0025% of the value of the cash or securities fail, compounded daily until paid, is imposed.

The proposal has no direct impact on foreign investors. However, trading participants may pass on penalties and fees to underlying investors if settlement failure in the market emanated from securities or cash obligations by the underlying investor.

The amended fees and penalties will be implemented with SEC approval.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering
The International Securities Identification Number (ISIN) is used in BTr-RoSS for government securities, except for special purpose Treasury bonds and multi-currency Retail Treasury bonds. Local numbering is also used for most bond transactions. On the other hand, proprietary code is commonly used in PDTC.

Financial Institution Identification
Both Business Identifier Code (BIC) and local code are used in BTr-RoSS. PDS-assigned firm codes are used to identify the financial institution in its trading, depository, and settlement systems. However, mapping tables are used to convert these codes to their BIC equivalents when PDS systems interact with BSP or cash settlement bank systems. PTDC adopts proprietary code to identify financial institutions, which are PDS-assigned firms.

Securities Account
BTr-RoSS adopts a multi-layer and omnibus account structure. BTr-RoSS participants manage their own and their customers' securities separately in BTr-RoSS. PDTC also adopts a multi-layer and omnibus account structure. PDTC participants manage their own and their customers' securities separately in PDTC. BTr-RoSS is in text format and uses ISO20022. PDTC adopts proprietary code to identify securities accounts.

Cash Account
The BIC of the bank and the regular bank account number are used to identify cash accounts in BTr-RoSS. PDTC adopts a proprietary code to identify cash accounts.

Character Code and Language
UTF 8 is used for all trading, depository, and settlement systems in BTr (BTr-RoSS) and PDTC.

Medium- to Long-Term Strategies

The PDS Group and regulators (BSP and SEC) are very conscious of promoting STP whenever possible. While there is no official initiative tasked to implement STP, each financial institution plans to mitigate risks and reduce operational costs. They promote STP in the following areas:

(i) between the trading systems and back-office systems of trading participants,

(ii) from trading systems to clearing and settlement systems,

(iii) between the depository systems and back-office systems of depository participants,

(iv) between the depository and registry systems for government and corporate bonds, and

(v) between the depository or registry systems and the settlement bank systems for linkages with other depositories.

Each institution implements STP using proprietary conventions. For example, interfaces with settlement banks' deposit systems are governed by each bank's proprietary solution. This results in the feeder institution (such as the depository) having to customize the interface for each settlement bank that it connects to. The development of a specific interface program for each connectivity point translates to multiple development and maintenance costs and increased operational risk. It is desired that an industry-wide initiative streamline STP connectivity requirements and promote use of a centralized infrastructure (such as an STP hub). Regulators could set deadlines for companies to be ISO20022 compliant.

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Asian Development Bank (ADB). *ASEAN+3 Bond Market Guide*.

ADB. *AsianBondsOnline.* http://www.asianbondsonline.adb.org

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Executives' Meeting of East Asia Pacific Central Banks. *Payment, Clearing and Settlement Systems in the Philippines.*

Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Singapore (SG)

Bond Market Infrastructure

Overview of Bond Markets

Singapore's bond market comprises the over-the-counter (OTC) market and the exchange market. Both Singapore Government Securities (SGS) and corporate bonds can be traded on either the OTC or exchange market. Settlement of SGS and corporate bonds is carried out in the respective depository of the SGS and corporate bonds.

Please refer to **Part 3 SG01 (Government Bond Market Infrastructure Diagram)** and **Part 3 SG02 (Corporate Bond Market Infrastructure Diagram)**.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, the absolute local currency (LCY) government bonds outstanding in Singapore at the end of 1Q13 was USD148.27 billion, while LCY corporate bonds stood at USD103.52 billion.[1]

[1] LCY bonds outstanding for Singapore include amounts of LCY bonds issued by nonresidents. The Monetary Authority of Singapore (MAS) publishes LCY corporate bonds outstanding on an annual basis only. Therefore, 1Q13 LCY corporate bonds outstanding data are *Asian BondsOnline* estimates based on actual 4Q12 MAS data.

Description of Related Organizations

Ministry of Finance (MOF)
The Ministry of Finance (MOF) is responsible for administering and regulating financial institutions and structures in the Singapore bond market. The Government of Singapore issues domestic debt securities to enhance the efficiency and liquidity of the SGS market as part of its strategy to develop Singapore as an international debt hub. Two types of government securities are issued: (i) SGS to develop the domestic debt market; and (ii) Special SGS, which are issued as non-tradable bonds to meet the investment needs of the Central Provident Fund, Singapore's national pension fund.

The Monetary Authority of Singapore (MAS)
The Monetary Authority of Singapore (MAS) acts in a role similar to a central bank in serving as the agent for the Government of Singapore to issue SGS comprising Treasury bills and government bonds. MAS provides overall supervision to the financial industry, including the securities industry.

MAS is the central securities depository (CSD) for SGS. Settlement of SGS is conducted via the MAS Electronic Payment System plus SGS (MEPS+ SGS), a Real-Time Gross Settlement system (MEPS+ RTGS) with a cash settlement function for a full range of bonds. MEPS+ SGS holds government bonds and facilitates the instantaneous and irrevocable transfer of SGS. It is linked to MEPS+ RTGS to provide delivery-versus-payment (DVP) for SGS transactions. Under the scripless settlement system, crediting or debiting the securities owner's account through the book-entry system affects any transfer of securities. Most SGS transactions are settled through DVP over MEPS+ SGS and MEPS+ RTGS.

Singapore Exchange (SGX)
Singapore Exchange (SGX) is a self-regulating organization governed by its own rules and by-laws, but ultimately supervised by MAS. SGX was formed on 1 December 1999 as a holding company of some former exchange companies such as the Stock Exchange of Singapore (SES), Singapore International Monetary Exchange (Simex), and the Securities Clearing and Computer Services Pte. Ltd. (SCCS). Tokyo Stock Exchange, Inc. holds about 4% of SGX stock. Meanwhile, SGX holds a 20% stake in the Philippine Dealing System Holdings Corporation (PDS Group), which has become an associate company of SGX. Singapore Exchange Securities Trading Limited (SGX-ST) operates the securities trading market for SGX-listed securities.

The Central Depository (Pte.) Limited (CDP)
CDP is the entity acting as both central clearing house and CSD for SGX-listed and -traded securities. CDP commenced operations in 1987 and is wholly owned by SGX.

CDP operates four systems for settlement and depository:

(i) Pre-Settlement Matching System (PSMS) for pre-matching of settlement instructions,

(ii) Clearing and Settlement System (C&S System) for settlement of SGX-listed and traded securities,

(iii) Debt Securities Clearing and Settlement System (DCSS) for settlement of OTC-traded debt securities deposited with CDP, and

(iv) Depository System for the book-entries of SGX-traded and OTC-traded securities (including SGX-traded and OTC-traded debt securities) deposited in CDP.

Overview of Government Bonds

Trading

OTC Trading
SGS could be traded in the OTC market or exchange market. Currently SGS are mainly traded in the OTC market. Investors buy or sell SGS (Treasury bills and bonds) through SGS dealers.

Exchange Trading
To facilitate secondary trading, SGX has provided secondary trading of SGS bonds since 8 July 2011. Investors can buy and sell SGS bonds through stockbrokers using the same CDP securities account and broker trading account that they have for exchange-traded securities. Exchange-traded SGS bonds are custodized with CDP.

Clearing and Central Counterparty

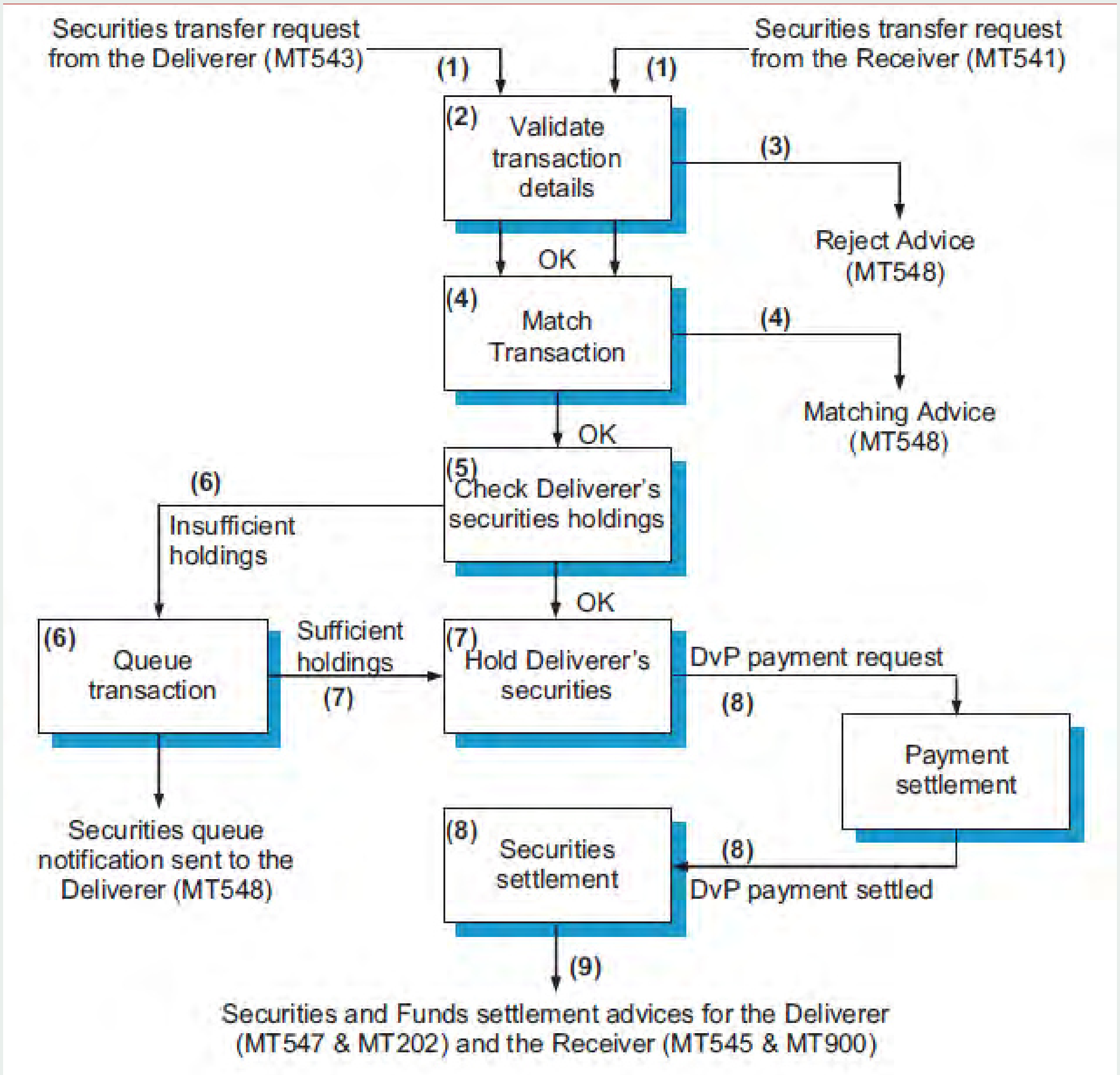
OTC-traded SGS have no clearing and central counterparty (CCP). CDP is the CCP for exchange-traded SGS.

Bond Settlement

Bond Settlement in the OTC Market
MAS is the CSD of SGS. The ownership and transfer of SGS are reflected as book entries in the accounts with MAS. OTC trade is settled via MEPS+.

For OTC trades, trade instructions are submitted to MEPS+ SGS by 17:30 on settlement day (SD) by the delivering party and receiving counterparty. The buy side and sell side have an option to choose either DVP or free-of-payment (FOP) based settlement (most of them settled by DVP) in MEPS+ SGS. Upon matching, securities and cash are transferred between participants on a simultaneous, trade-by-trade basis. Settlement is completed on T+1 against MEPS+ RTGS payment. If the sell side of SGS has insufficient SGSs for delivery, the transaction is queued in MEPS+ SGS until sufficient SGS become available in the sell side's SGS account. When the sell side's account has sufficient SGS, they are

Figure: SG01: Process Flow for DVP/RVP Transaction



Source: The Monetary Authority of Singapore

earmarked for transfer to the buying bank and a payment instruction is sent to MEPS+ RTGS for funds settlement (**Figure SG01**).

Bond Settlement in the Exchange Market

CDP provides safekeeping of exchange-traded SGS for SGX investors. The ownership and transfer of SGS are reflected as book entries in the accounts with CDP. CDP in turn maintains an account with MAS, which is the CSD for SGS.

For exchange-traded SGS, settlement and depository is similar to OTC-traded securities. Securities settlement instructions are pre-matched in PSMS, securities settlement are executed via the C&S System, and the SGS are custodized in the CDP securities account maintained in the book-entry CDP Depository System.

An investor may also choose to trade SGS in the OTC market through SGS dealers but safekeep SGS with CDP, together with other exchange-traded securities.

PSMS provides a pre-settlement matching service for exchange trades and OTC trades. Both buyer and seller input settlement instruction, containing key details of the trade, into the PSMS for settlement via the Debt Securities Clearing and Settlement System (DCSS) for OTC-traded debt securities deposited with CDP. Upon matching the settlement instructions, the seller's debt securities are earmarked. Once DCSS receives confirmation that the transaction proceeds have been made to the seller, the debt securities will move by way of book entries into the CDP Depository System, similar to exchange trades **(Figure SG02)**.

Cash Settlement

SGS trades use MEPS+ RTGS for cash settlement. MEPS+ RTGS and MEPS+ SGS are directly linked for DVP settlement of SGS. If the buying bank has insufficient funds to pay for the SGS purchase, the payment is queued in MEPS+ RTGS. When the funds become available, the amount is debited from the buy side's RTGS account and credited to the sell side's RTGS account. MEPS+ RTGS simultaneously notifies MEPS+ SGS to transfer the securities to the buy side.

For SGS settlement in CDP DCSS system, payment is effected by the buy side and sell side directly via their respective MEPS+ RTGS accounts with MAS.

DVP settlement for OTC trades in MEPS+ SGS/MEPS+ RTGS or CDP DCSS/MEPS+ RTGS are settled on a real-time and gross trade-for-trade basis.

For FOP settlement, transacting parties use MEPS+SGS or CDP DCSS for securities transfer. Funds transfers are arranged separately.

Overview of Corporate Bond

Trading

OTC Trading
Corporate and statutory bonds may be traded in the OTC market via proprietary platforms or a platform provided by SGX. SGX introduced order matching for bond trading in 1995 via a bond quotation system, which is now known as the SGX Bond Market.

Exchange Trading
Corporate bonds may be listed and traded on SGX similar to other exchange-traded securities.

CCP

There is no CCP for bonds traded in the OTC market or the SGX Bond market. For corporate bonds that are listed and traded on SGX, CDP is the CCP.

Bond Settlement

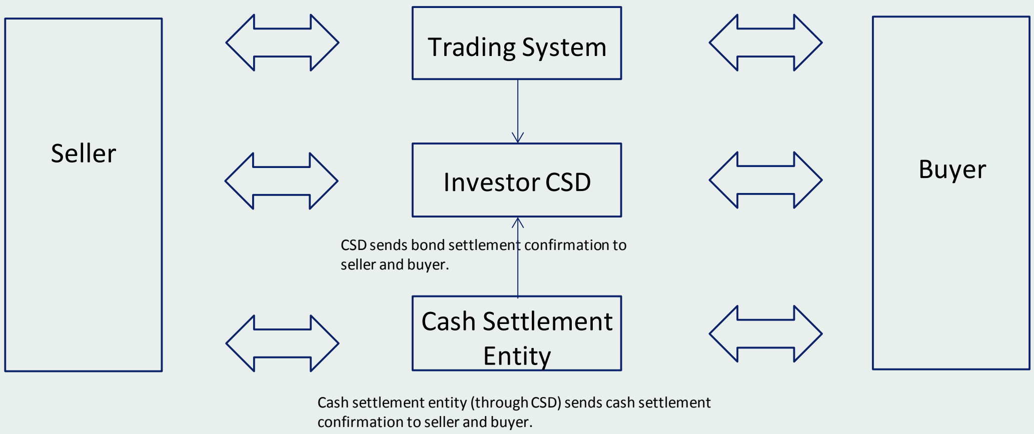
Bond Settlement on the OTC Market
OTC trades conducted on proprietary trading platforms are settled bilaterally using fax, phone, or proprietary electronic systems.

Bond Settlement in the Exchange Market
For corporate bonds that are custodized with CDP, the buy side and sell side may use PSMS and DCSS to pre-match the settlement instructions and settle the trades. Book entries are effected in the CDP Depository System. DVP and FOP settlement is available for DCSS settlement **(Figure SG03)**.

Cash Settlement

For OTC trades that are settled using PSMS/DCSS and custodized with the CDP Depository System, cash settlement may occur using MEPS+ RTGS. The settlement is based on DVP Model 1 of the Bank for International Settlements (BIS) definition. Each traded bond is earmarked first. Transaction proceeds are settled through current accounts in MEPS+ RTGS based on the settlement instructions entered by the

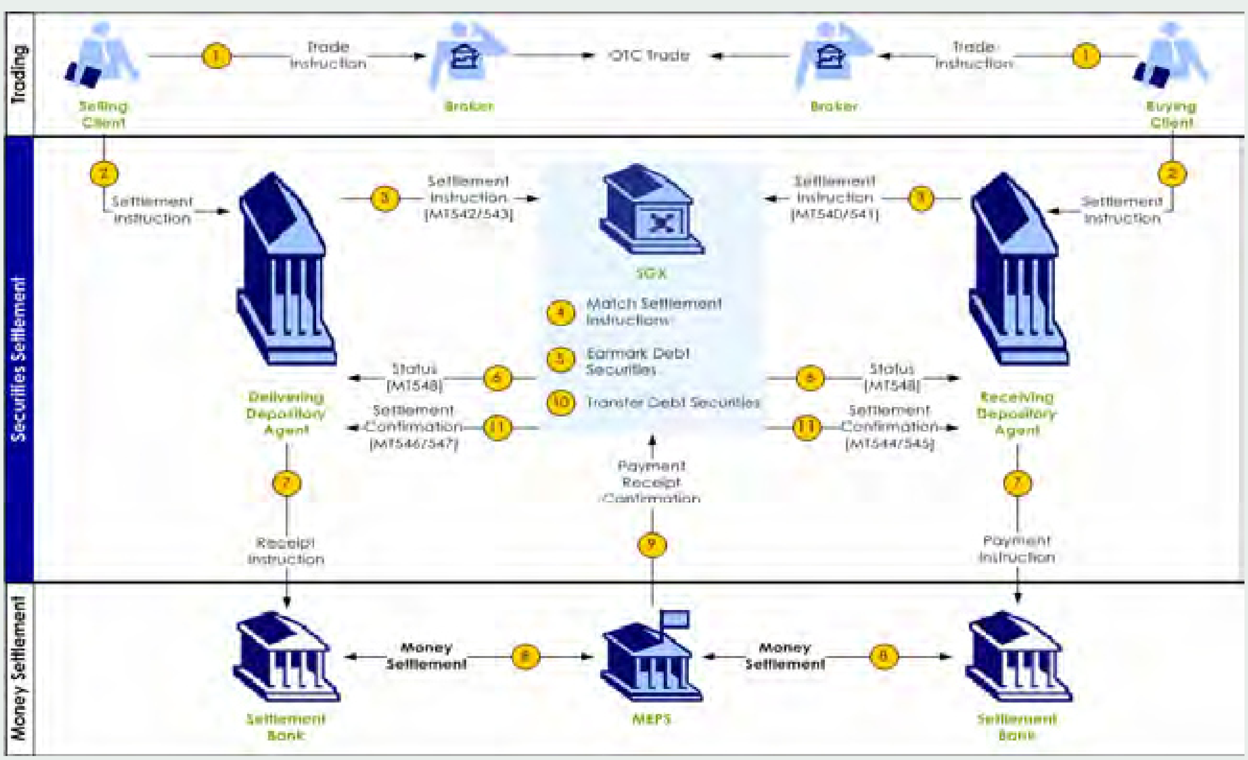
Figure SG02: Network between Market Infrastructures and Participants



Communications between CSD and seller or buyer: terminal access, TCI/IP-based and proprietary format (SWIFT/Email/Fax)
Communications between cash settlement system: TCP/IP-based and mainly SWIFT

Source: Singapore Exchange (SGX).

Figure SG03: Corporate Bond Transaction Flow



Source: Singapore Exchange (SGX).

participants. Cash settlement confirmation is transmitted from MEPS+ RTGS to DCSS. Then, earmarked bonds are released and credited to the buy side's securities accounts.

SGX-listed and traded corporate bonds are settled through the PSMS/C&S System and custodized with the CDP Depository System.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

Fixed-interest payments for bonds are made semi-annually. As SGS are book-entry registered securities, it is important to establish the identity of the registered owner of SGS before the coupon interest payment date. For this reason, there is a short period just before the coupon interest payment date when an SGS is traded without entitlement to that coupon payment.

For SGS that are listed on SGX, the ex-interest date is 6 business days prior to the coupon date. For transactions settling on or before the ex-interest date, the buy side is entitled to the next coupon payment, in which case the accrued interest is positive; such transactions are said to be traded-cum-interest. For transactions settling after the ex-interest date, the sell side is entitled to the next coupon payment, and the accrued interest is negative, which represents the rebate to the buy side.

The coupon payment is calculated at the beginning of the ex-date according to the coupon rate and coupon frequency of the securities and the members' holdings. The ex-date period, coupon payment date, coupon payment rate, and coupon payment frequency are specified for each SGS issue at the start and the rest of the coupon payment schedule is derived accordingly.

On the coupon payment date, MEPS+ SGS automatically pays the calculated coupon amounts to the holder (as at ex-date) of SGS by debiting the MAS' MEPS+ RTGS account and crediting the holder's MEPS+ RTGS account.

For SGS redemptions within MEPS+ SGS, MEPS+ SGS automatically calculates the redemption proceeds that are due to holders on the maturity date. The maturity date is specified for each SGS issue in MEPS+ SGS. On the maturity date, MEPS+ SGS automatically calculates the redemption proceeds according to the quantity of SGS holdings. MEPS+ SGS then pays the redemption proceeds to the existing holder of SGS on a DVP basis by debiting the MAS' MEPS+ RTGS account and crediting the relevant member's MEPS+ RTGS account, while also redeeming SGS from the respective SGS accounts.

Interest Payment and Redemption of Corporate Bonds

Interest is paid either at a fixed or floating rate (depending on the issuer) on a regular basis.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow in the Singapore government bond OTC market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
A pre-settlement matching service is available in the CDP settlement and depository environment. This is available for OTC trades where government bonds are deposited with the CDP.

(ii) **Bond Settlement**
There is no system interface between bond settlement systems and other systems. The buy side and sell side input settlement instruction data into MEPS+ SGS. For settlement matching, MAS adopts both

Figure SG04: The Matching Criteria of PSMS

No.	Message Item	Criteria
1	Type of Settlement Instruction	Exact Match
2	Counterparty (CDP Participant)	Exact Match
3	Trade Date	Exact Match
4	Settlement Date	Exact Match
5	Security	Exact Match
6	Quantity	Exact Match
7	Settlement Amount	Tolerance Match
8	Settlement Currency Code	Exact Match
9	Place of Settlement	Exact Match

Source: Singapore Exchange (SGX).

central and local matching. In general, the sell side sends delivery instruction to MAS and MAS forwards it to the buy side. Afterward, the buy side affirms it and sends it back to MAS. MAS matches the delivery instruction after receiving it from the buy side. After settlement matching, MAS sends matching confirmation to the sell side and buy side, and holds bonds within the account of MEPS+ SGS. For method of settlement, MAS adopts DVP Model 1 of the BIS definition. After bond settlement, MAS eventually sends a settlement report to both sides.

(iii) **Cash Settlement**
MAS sends cash settlement information from MEPS+ SGS to MEPS+ RTGS, but MAS does not send such data to settlement participants to reconfirm. After cash settlement, MAS sends a settlement report (cash) to the sell side and buy side. In the Singapore government bond market, MAS plays the role of cash settlement bank.

For further details, please refer to **Part 3 SG03 (Government Bond Transaction Flow for Domestic Trades).**

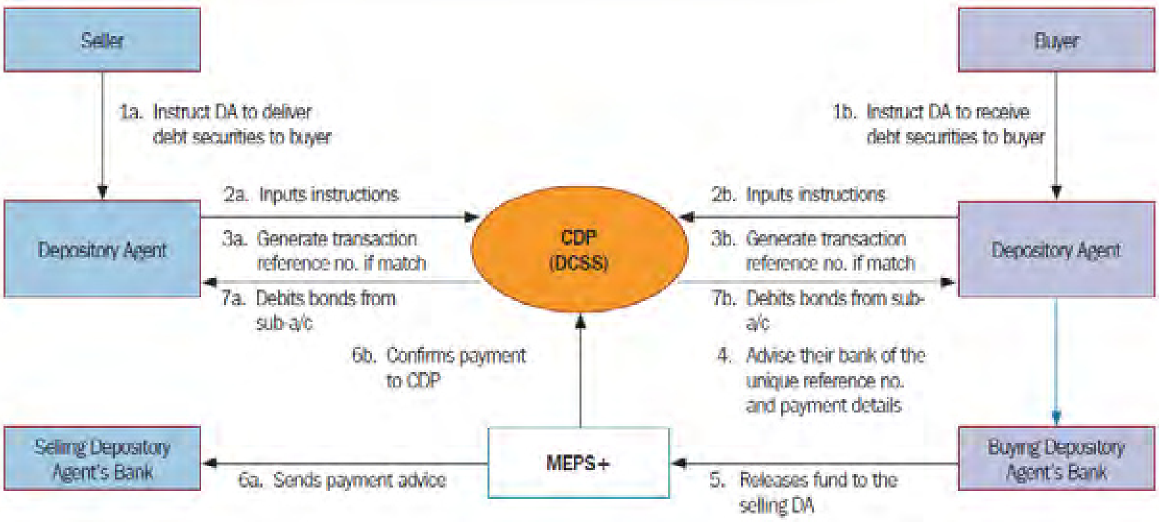
DVP Flow of Corporate Bonds for Domestic Trades

The business flow in the Singapore corporate bond OTC market, which is settled using the CDP post trade systems (PSMS and DCSS), is analyzed using a typical DVP flow. Key findings of the analysis are given below.

(i) **Pre-Settlement Matching**
Where bonds are custodized with CDP, they may use the CDP Pre-Settlement Matching System (PSMS) for pre-settlement matching. The matching criteria of PSMS are presented in **Figure SG04**.

(ii) **Bond Settlement**
For matched settlement instructions, CDP earmarks bonds within the relevant securities accounts of the custodian banks known as CDP Depository Agents (DAs). More specifically, CDP earmarks bonds to be delivered by moving them from the free balance to the available balance. The securities held in the free balance are unencumbered, the account holder has full legal title to them, while securities in the available balance are either bonds purchased by the account holder but not yet paid for, or bonds earmarked for subsequent transfers. Once the payment is received by the selling

Figure SG05: Transaction Flow of Debt Securities Clearing and Settlement System



CDP = Central Depository (Pte.) Limited; DA = depository agent; DCSS = Debt Securities Clearing and Settlement System; MEPS+ = Monetary Authority of Singapore Electronic Payment System plus (MEPS+)

Source: Monetary Authority of Singapore.

DA's bank, MEPS sends an electronic confirmation to CDP DCSS to release the earmarked debt securities from the selling DA's account and transfer to the buying DA's account. Settlement is considered final and irrevocable upon the securities from the selling DA's account being transferred to the buying DA's account.

OTC bond transactions can be settled on a DVP or FOP basis. CDP adopts DVP Model 1 of the BIS definition for its book-entry system and also adopts central matching. On a FOP settlement basis, transacting parities use CDP only for bond transfers and arrange for funds transfer separately. After corporate bond settlement, DCSS sends settlement confirmation to both the sell side and buy sides **(Figure SG05)**.

(iii) **Cash Settlement**
Both the sell side and buy side send cash settlement instruction to MEPS+ RTGS operated by MAS. For securities settlement in DCSS operated by CDP, a real-time DVP arrangement is achieved through a live link between DCSS and MEPS+. After cash settlement, MAS sends settlement instruction to both the sell side and buy side.

For further details, please refer to **Part 3 SG04 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

No significant barrier exists in the Singapore money market. Foreign investors are not subject to any restrictions on foreign exchange (FX) trades with regard to underlying investment, pre-funding, or FX reporting. Offshore FX trading, third-party FX, and repatriation are permitted for foreign investors. Overdrafts of up to SGD5 million are also permitted, unless the overdrafts are backed by economic activity.

For further details, please refer to **Part 3 SG05 (Bond Transaction Flow for Foreign Investors OTC Market / DVP)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payment and redemption of government bonds is analyzed using a typical flow. Key findings of the analysis are presented below.

(i) **Paying Agent**
In Singapore, MAS plays a role as Paying Agent (PA), requesting issuers to send payment requests, and after receiving a funding request from an issuer, paying interest and principal to the custodian on the issuer's behalf. The PA also confirms the bondholder list and calculates interest. On the coupon payment date, MEPS+ SGS automatically calculates the coupon amounts paid to the holder (as at ex-date) of SGS by debiting the MAS MEPS+ RTGS account and crediting the holder's MEPS+ RTGS account. For SGS redemptions within MEPS+ SGS, MEPS+ SGS automatically calculates the redemption proceeds that are due to holders on the maturity date. The maturity date is specified for each SGS issue in MEPS+ SGS.

(ii) **CSD**
MAS is the CSD for the Singapore government bond market. For the purpose of withholding tax, MAS receives a bondholder list from custodians because MAS does not manage the list of final beneficiaries. Custodians, which are CSD participants, manage bonds separately from their own bonds and customer's bonds within a book- entry system of CSD.

(iii) **Payment Flow**
MAS uses MEPS+ RTGS for interest payment and redemption. On the maturity date, MEPS+ SGS automatically calculates the interest and redemption proceeds according to the quantity of SGS holdings. MEPS+ SGS then pays the redemption proceeds to the existing holder of SGS on a DVP basis by debiting the MAS' MEPS+ RTGS account and crediting the relevant member's MEPS+ RTGS account, redeeming SGS from the respective SGS accounts.

(iv) **Tax**
Singapore imposes withholding tax on interest for residents in Singapore. Non-residents enjoy the privilege of tax exemption. MAS withholds income tax on behalf of issuers.

(v) **Other Issues**
MAS as a PA sends a settlement report to participants after interest payment and redemption. MAS transfers cash directly from MOF's account to MAS participant accounts.

For further details, please refer to **Part 3 SG06 (Interest Payment Flow of Government Bond)** and **Part 3 SG07 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

The business flow of interest payment and redemption of corporate bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
Commercial banks are appointed as PAs in Singapore. PAs request interest payment instruction from issuers and after receiving fund requests from bond issuers, PAs pay interest and principle to custodians on issuers' behalf. CDP shares the role of PA with commercial banks. CDP sends payment requests to commercial banks and MEPS+ RTGS.

(ii) **CSD**
CDP is CSD of corporate bonds listed and publicly traded in Singapore. CDP does not have a banking license but CDP has a cash account in the RTGS system of MAS, MEPS+ RTGS, and uses it for interest payment and redemption to the settlement banks of the depository agents. CDP receives bondholder's tax status from custodians for the sake of withholding tax. Custodians manage their own bonds and customer's bonds separately in CDP accounts.

(iii) **Payment Flow**
MEPS+ RTGS is used for interest payment and redemption. Money transfers are conducted through CDP's MEPS+ account.

(iv) **Tax**
The Government of Singapore imposes withholding tax on the interest of corporate bonds for residents of Singapore. Non-residents enjoy the privilege of tax exemption. PAs withhold income tax on behalf of issuers. On the other hand, custodians withhold local tax.

(v) **Other Issues**
PAs send a settlement report to custodian after redemption.

For further details, please refer to **Part 3 SG08 (Interest Payment Flow of Corporate Bond)** and **Part 3 SG09 (Redemption Payment Flow of Corporate).**

Message Standards

Message Format

MAS adopts ISO15022 for its book-entry system. Currently, CDP uses a proprietary message format for its system. However, CDP has announced plans to adopt ISO20022 for its new settlement and depository system.

Message Items

Typical message types of bond settlement are settlement instruction and settlement confirmation. The Securities Market Practice Group (SMPG) has defined 10 common elements of these two message types. Typical message items are compared with that of ISO20022 sese. 023 and sese. 025. In Singapore's government bond settlement system, the 10 common elements of MEPS+ SGS are almost all the same as ISO20022.

Market Practices

Operating Hours

For government bond settlement, opening time is 6:00 and closing time is 20:00. However, from 6:00 until 9:00 and 19:00 to 20:00, the system accepts forward-dated transactions only.

For corporate bonds, opening time is 8:30 and closing time is 17:30. The cut-off time for settlement instruction of corporate bonds in both DVP and FOP transactions is 12:00 on settlement date.

Settlement Cycle

Both MAS and CDP infrastructure provides for settlement of SGS and corporate bonds on T+1. Participants in OTC trades outside the systems may agree to settle on a FOP basis with a different cash settlement period.

Fails

Fail refers to a situation whereby a party receiving bonds has not received delivery of the relevant securities from the delivering party after the end of the scheduled settlement date in the Singapore market.

For corporate bonds that are listed and traded on SGX and deposited with CDP, the buy-in takes place from 15:00 to 17:00 on T+3 through a buy-in market, with the securities to be bought-in posted at 14:30 each day on the SGX website. If by the end of T+3, CDP has not been able to make up that shortfall, buy-in recommences from 15:00 to 17:00 on T+4. CDP charges a processing fee of SGD75.00 (SGD80.25 inclusive of Goods and Services Tax) for each failed contract. A brokerage rate of 0.75% is to be levied on each buy-in contract.

The starting buy-in price for any security is two minimum bids above either the previous day's closing price or any of the transacted or bid prices 1 hour prior to commencement of the buy-in, whichever is higher. The buy-in bid prices increase by two minimum bids from time to time throughout the day until the securities are bought or delivered to CDP.

From T+5 onwards, CDP will instruct the failed delivering clearing member to procure the securities and make good to CDP. CDP will also impose a penalty of SGD5,000 per day for late procurement. If the defaulting delivering clearing member is unable to procure, they would be referred to the SGX Disciplinary Committee. If found culpable, the dissenting clearing member faces a penalty of at least SGD20,000.

Intraday Liquidity Facility

Subject to the agreement for the provision of a Real-Time Gross Settlement (RTGS) system, an intraday facility that is offered by MAS may be accessed by participants through MEPS+. MAS allows banks to place excess funds with it or borrow from MAS against SGS collateral. Such fund transfers and SGS transfers are executed in MEPS+.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering
The International Securities Identification Number (ISIN) is used in the Singapore bond market.

Financial Institution Identification
MEPS+ SGS and MEPS+ RTGS adopt the Business Identifier Code (BIC) to identify financial institutions. MEPS+ SGS and MEPS+ RTGS non-participant members can either use BIC or an eight-character code assigned by MAS.

Securities Account
MAS adopts an omnibus account structure for its book entry and the account structure is multi-layer for its participants. CDP also adopts an omnibus account structure and multi-layer of account structure in its book-entry system as well as MAS.

There are three types of SGS accounts in MEPS+ SGS: SGS Reserve Account, SGS Trade Account, and SGS Customer Account.

(i) **SGS Reserve Account**
Banks deposit SGS for compliance with the Minimum Liquid Assets (MLA) requirement to hold at least 10% of the qualifying liabilities in SGS at all times in this account prior to the start of the 2-week maintenance period. Banks may not sell SGS in an SGS-MLA account directly. To give banks the flexibility to manage their holdings of SGS, transfers of SGS holdings between SGS Reserve Accounts and SGS Trade Accounts can be made at any time when MEPS+ SGS is in operation, subject to the 19:00 deadline for same-day transfers. Transfers of SGS holdings out of SGS Reserve Accounts to SGS Trade Accounts are permitted only if the remaining value of SGS holdings in SGS Reserve Accounts after the transfer is at least 10% of the quantifying liabilities. Transfers to or from SGS Reserve Accounts are not be queued for settlement; that is, if there are insufficient securities in the account (either SGS Trade or SGS Reserve) to be transferred out, the transaction will be rejected.

(ii) **SGS Trade Account**
SGS holdings in excess of the minimum 10% MLA requirement may be deposited in an SGS-Trade Account. SGS holdings in this account can be used for trading.

(iii) **SGS Customer Account**
Primary and approved SGS dealers maintain an additional SGS Customer Account for the SGS holdings of their customers. Holdings in an SGS Customer Account can be transferred FOP to the bank's SGS holdings, or to another bank's or its customer's SGS holdings. Purchases or sales on delivery against payment of SGS holdings in a bank customer's account from and/or to another bank or its customer's SGS holdings can also be transacted.

To maintain SGS that belong to a participant's non-resident customer, different accounts may be created for non-resident customers subject to various levels of withholding taxes.

(iv) **ILF Account**
To maintain SGS pledged under an intraday liquidity facility arrangement, CDP allows an omnibus account for foreign investors, but local Singaporean and permanent resident investors must have a segregated account.

Cash Account
Participants are required to maintain a current account with MAS. Banks' intraday minimum cash balance requirement, if any, is maintained in the current account.

Funds in the current account exceeding the intraday minimum cash balance requirement are transferred at the start of the day to the participant's RTGS account in MEPS+ RTGS, where they may be used for the settlement of interbank payments.

Character Code and Language
UTF-8 (Unicode) is adopted and English is chosen as a standard language for payment systems in Singapore.

Medium- to Long-Term Strategies

CDP has announced plans to improve standardization in its market practices and messaging protocols. These include adopting ISO20022 for the post-trade environment. CDP also plans to introduce RTGS and multiple batch settlement for settlement of corporate bonds and SGX-listed securities.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Thailand (TH)

Bond Market Infrastructure

Overview of Bond Market

Bonds issued in Thailand can be divided into three major components: government debt securities, corporate debt securities, and foreign bonds. This report mainly focuses on government bonds and corporate bonds.

According to the Asian Development Bank's (ADB) *AsianBondsOnline*, the amount of local currency (LCY) government bonds outstanding in Thailand at the end of 1Q13 was USD231.66 billion, while corporate bonds reached USD62.80 billion.

The Thai government and corporate bond markets comprise the over-the-counter (OTC) market and the exchange market. In order to support the development of Thai, and subsequently Asian, bond markets, the Stock Exchange of Thailand (SET) launched a new division, Bond Electronic Exchange (BEX), on 26 November 2003. Prior to BEX, bonds were traded only in the OTC market where the players are mainly institutional investors. Small investors were unable to get into the OTC market due to its size and ambiguity, or simply due to a lack of information. However, even after the inauguration of BEX, over 95% of bond trading is still conducted through telephone or in the OTC market, while less than 5% is conducted through BEX's systems, the Fixed-Income and Related Securities Trading System (FIRSTS) and Automatic Order Matching (AOM). Dealers, which are financial institutions holding debt securities licenses granted by the Securities and Exchange Commission (SEC), are required to report all bond transactions to the Thai Bond Market Association (BMA), which monitors, compiles, and disseminates prices to the public at the end of day. Prices disseminated by BMA are used as market reference. Investors in the bond market are mainly institutions such as banks, mutual funds, provident funds, government pension funds, and insurance companies. Government bonds are the most actively traded securities, accounting for approximately 50% of total trade in December 2010.

Parties report trade transactions to BMA with traded data entered into Post-Trade Integration (PTI) and settled using the PTI, which is the book-entry system of bonds in Thailand. PTI is owned and operated by the Stock Exchange of Thailand (SET) and shared by Thailand Clearing House (TCH) and Thailand Securities Depository (TSD), which are subsidiaries of SET. Cash settlement is effected through Bank of Thailand Automated High-Value Transfer Network (BAHTNET), which is a Real-Time Gross Settlement (RTGS) system owned, operated, and regulated by Bank of Thailand (BOT).

Please refer to **Part 3 TH01 (Government Bond Market Infrastructure Diagram)** and **Part 3 TH02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF is the pre-eminent regulator and oversees financial and capital markets in Thailand **(Figure TH01)**. The activities of Bank of Thailand (BOT) and SEC are overseen by MOF.

Securities and Exchange Commission (SEC)
SEC was established under the Securities and Exchange Act (SEC Act) B.E. 2535 (1992) on 16 May 1992. The SEC Act B.E. 2535 (1992) was amended by SEC Act B.E. 2551 (2008), which became effective 5 March 2008. The SEC's objectives are to supervise and develop the primary and secondary capital markets, as well as financial and securities market participants and institutions. Its primary roles are to formulate policies, rules, and regulations regarding the supervision, promotion, and development of securities businesses, as well as other activities pertaining to securities business.

Bank of Thailand (BOT)
BOT was first set up as the Thai National Banking Bureau. The Bank of Thailand Act was promulgated on 28 April 1942, vesting upon BOT responsibility for all central banking functions. BOT started operations on 10 December 1942. It has developed an electronic, large-value fund transfer system, known as BAHTNET. It is designed to mitigate risk in payment systems to facilitate settlement in an effective, secured, and timely manner on an RTGS basis since 24 May 1995.

Thailand Securities Depository Co., Ltd. (TSD)
TSD is a subsidiary of SET established on 16 November 1994. TSD is the sole central securities depository in Thailand using a scripless system. The services provided by TSD are securities deposit, withdrawal, transfer, pledge, and revocation for all government and state-owned enterprise bonds. TSD is also responsible for managing foreign holdings of securities traded on the main board and foreign board of SET in compliance with related rules and regulations.

Thailand Clearing House Co., Ltd. (TCH)
TCH, a subsidiary of SET, was established on 9 August 2004 with registered capital of THB100 million. During 2004–09, TCH acted as a clearinghouse for derivatives traded on the Thailand Future Exchange (TFEX). To segregate risk associated with its clearinghouse role from its depository functions, TSD, which had acted as a clearinghouse for equities and bonds since 1 January 1995, transferred clearing and settlement functions for equities and bonds to TCH in 2010. Thus, TCH became the integrated clearinghouse for all financial products. TCH is governed by the Securities and Exchange Act B.E. 2535 (1992) for equities and bonds, and the Derivatives Act B.E. 2546 (2003) for derivatives. It is under the supervision of SEC.

Bond Electronic Exchange (BEX)
The Bond Electronic Exchange (BEX) is a subsidiary of SET and was launched on 26 November 2003. BEX's main role is to support the secondary market for bond trading. As a majority of bond trading occurs in the OTC market, BEX's objective is to expand bond activities to individual investors.

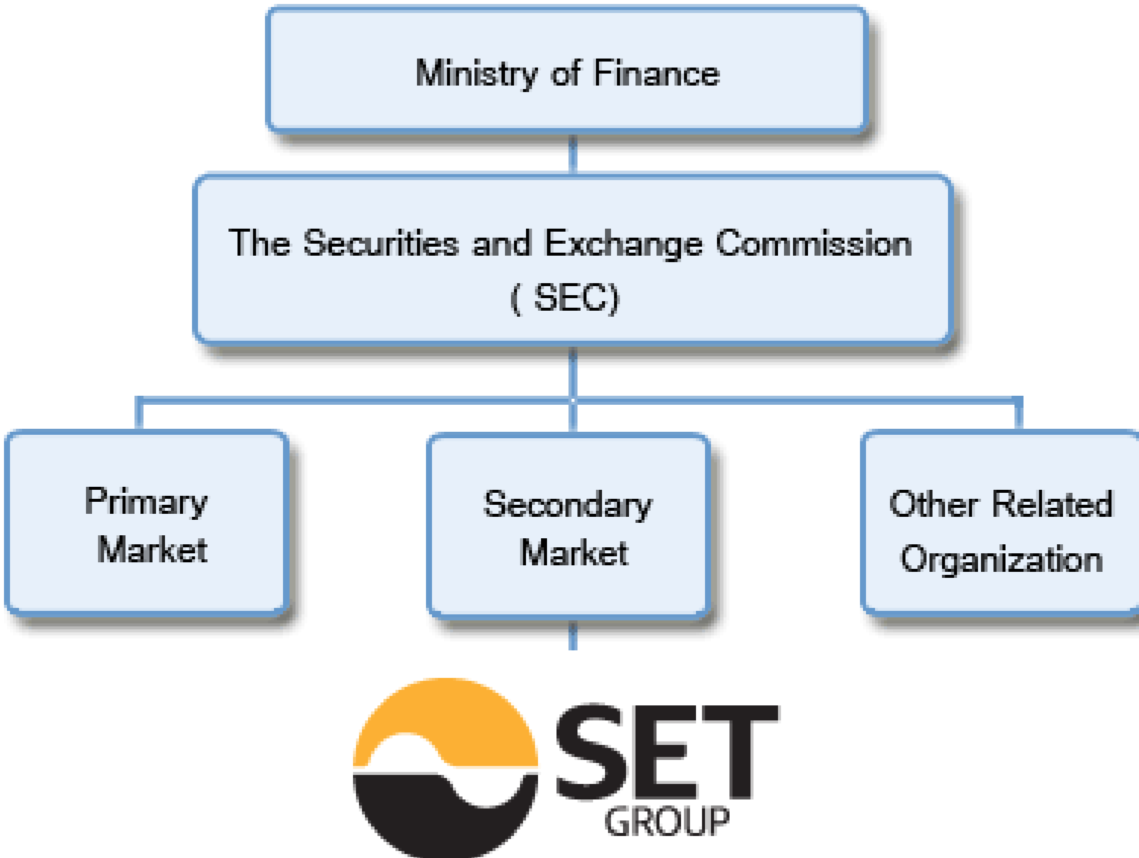
Thai Bond Market Association (BMA)
BMA is a securities business association formed under the Securities and Exchange Commission Act B.E. 2535. Its main purposes are to be a self-regulatory organization (SRO) to promote the fair and efficient operation of the bond market, and to serve as an information center for the Thai bond market. As a pricing agency, BMA provides Thai bond prices to Bloomberg and Reuters; in return, it receives trade details via Bloomberg's FIRST online capture. BOT stipulates that every bond dealer has to be BMA member.

Overview of Government Bonds

Trading

OTC Trading
As mentioned above, most government bond trades take place in the OTC market, where quotes are typically obtained directly from

Figure TH01: Regulatory Framework of the Capital Market



Source: Stock Exchange of Thailand (SET).

money brokers and dealers over the phone. An agreement concluded over the telephone is then followed up with a confirmation order in writing. Dealers have to report trade details to BMA, as the pricing authority, within 30 minutes. BMA publishes trade reports upon receipt for government securities and twice daily for corporate bond trades.

Exchange Trading

The exchange market for government bonds in Thailand is owned and operated by BEX. BEX was established to provide investors with additional investment instruments. In addition to better access to information for investors, BEX also provides investors with an easy way to conduct trading transactions. BEX enhances the bond's secondary market. Prior to BEX, bonds were traded on the OTC market, which was mainly the institutional investor's arena. Small investors were unable to get into that particular market due to its size and ambiguity, or simply due to a lack of information. In order to attract bond activities in both retail and wholesale markets, BEX has been granted approval from SET's committee to include both government issues and corporate issues in its exchange.

BEX is currently working under the trade-by-price method. However, the committed price is converted into an indicative yield to assist in decision making. The commission fee associated with bond trading required by brokerage companies is not fixed and subject to negotiation between investors and their respective brokers. Dealers have to report trades to BMA within 30 minutes in a similar fashion as the OTC market.

BEX provides two independent trading systems for institutional investors, including their dealers and retail investors. The system for institutional investors is called FIRSTS, which began its trading service on 1 March 2006. It was developed to serve certain groups of users comprising bond dealers, institutional investors, brokers, and underwriters of the investment units. BEX is also used for retail investors. It works either through the Automatic Order Matching (AOM) or Put-Through (PT) methods. Trading values over THB10 million are undertaken using the PT method where the counterparties negotiate the deal off-exchange. Once it is concluded, the sell side initiates the PT transaction in the system which then needs the buy sides to approve it. An investor can place an order through a member-broker of SET. Brokers enter orders into BEX's trading platform. If the bid or offer price and volume can be matched, the orders are matched automatically. At present, there are 12 active local brokers that provide brokerage services for BEX's bond trading.

Clearing and Central Counterparty

Clearing and Central Counterparty for the OTC Market

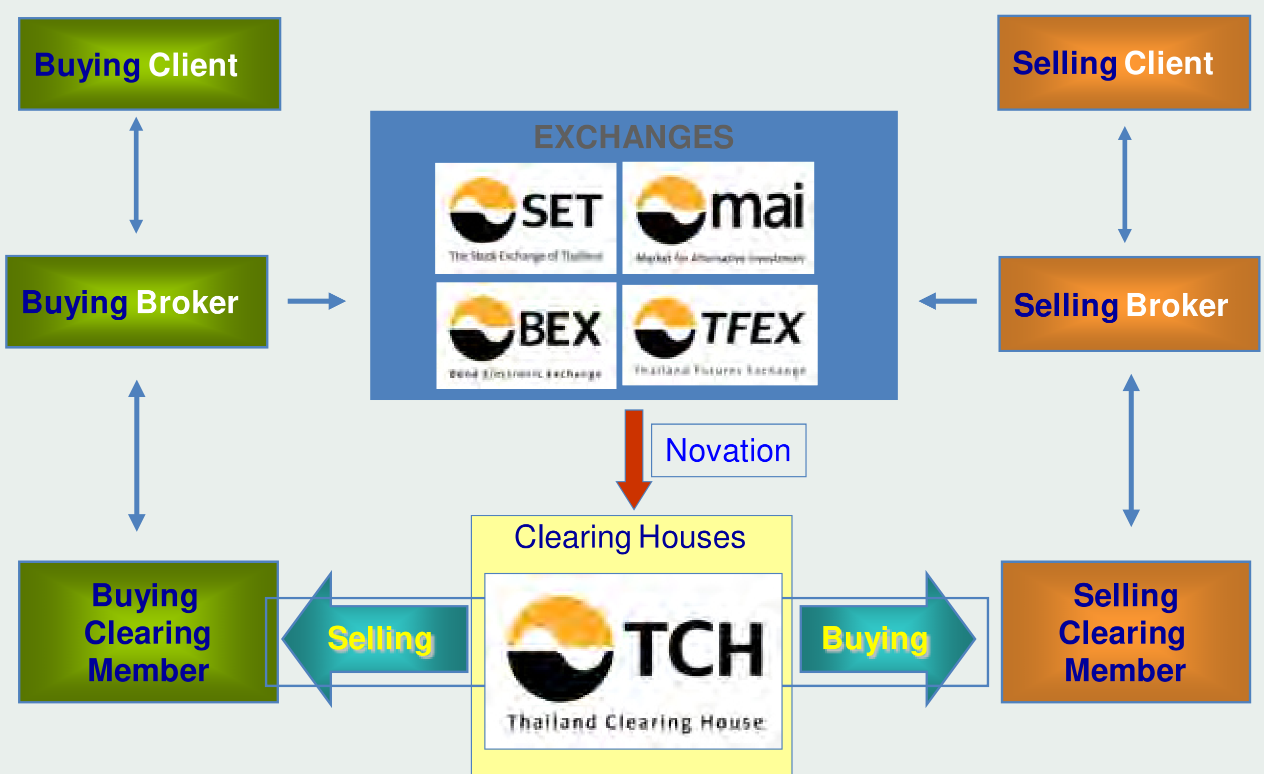
There is no clearing and central counterparty (CCP) in the OTC market.

CCP in the Exchange Market

TCH acts as CCP for clearing and settlement of all listed fixed-income instruments in BEX. TCH guarantees the performance of payment and securities delivery of trading transactions on exchanges similar to those in SET and TFEX (**Figure TH02**).

The Post Trade Integration System (PTI) is a project of TSD to integrate all existing system

Figure TH02: Role of TCH



DVP = delivery versus payment, RVP = receive versus payment, RTGS = real-time gross settlement.
Source: Stock Exchange of Thailand (SET).

functions and enhance full back-office services for greater efficiency. The establishment of PTI paves the way toward shortening the settlement cycle and STP initiatives, as well as cross-border transactions and multi-instruments and -markets. The settlement process of scripless government bonds traded via BEX is similar to that of equities as both are settled through PTI on a net clearing basis.

Bond Settlement

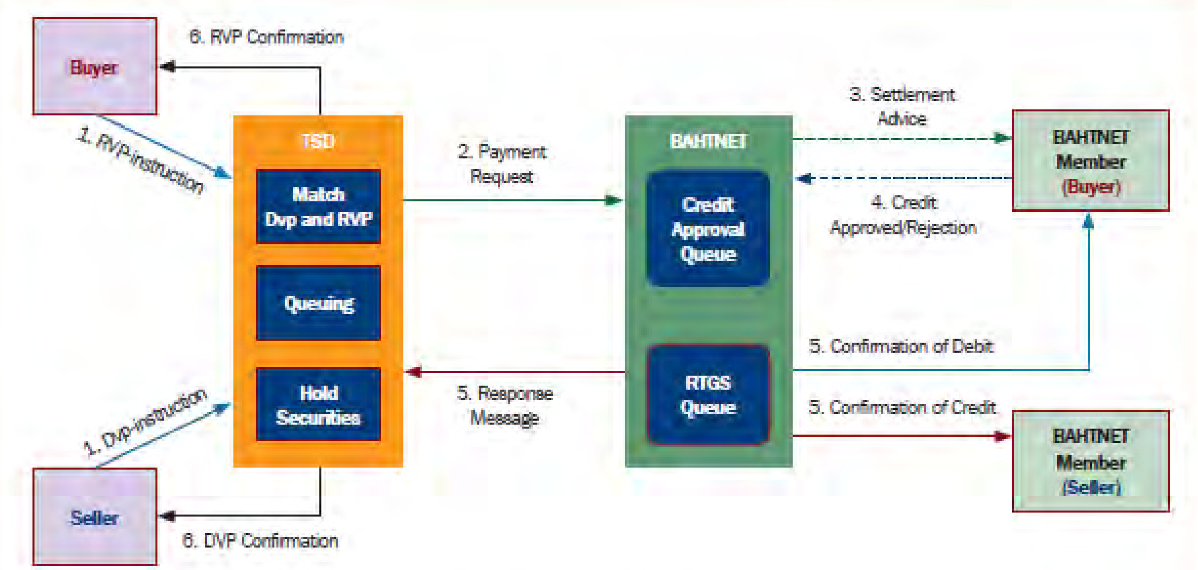
Bonds are settled via PTI on a RTGS basis. The buy side and sell side send settlement instructions to PTI. Once they are matched, TSD withholds the bonds from the sell side's account. TSD also sends settlement instruction to BOT to settle cash. After cash settlement is completed, TSD transfers the bond from the sell side's account to the buy side's account.

PTI as a core system combines settlement, depository, and registration functions and features. PTI allows for STP, connects with BAHTNET, and includes FOP transactions. PTI's messaging is based on Society for Worldwide Interbank Financial Telecommunication (SWIFT) messages. PTI uses the International Securities Identification Number (ISIN) and Business Identifier Code (BIC), but a converter exists for local codes. Participants can utilize web-based capture, and uploading is possible. Each market participant can connect to a PTI screen. Although PTI is now a standalone system, with no interface with market participants' systems, TSD has plans to introduce interface connectivity with market participants to enhance the STP process.

Cash Settlement

Cash settlement of government bonds relies on BAHTNET, an irrevocable funds transfer system that operates on an RTGS basis. BAHTNET is linked with TSD's system to facilitate delivery-versus-payment (DVP) for government securities. Intraday Liquidity Facility (ILF), which provides intraday overdraft, is available for BAHTNET members under BOT supervision. BAHTNET also provides a queuing mechanism and gridlock resolution system to provide adequate liquidity for cash settlement **(Figure TH03)**.

Figure TH03: Process for Gross Settlement for DVP



DVP = Delivery versus Payment; RVP = Receive versus Payment; RTGS = Real Time Gross Settlement

Source: Stock Exchange of Thailand.

As a high-value payment system, BAHTNET has implemented a sufficient level of security measures such as digital signature based on private keys and smart cards to secure integrity, confidentiality, authentication, and non-repudiation (including audit trail). Regarding foreign exchange (FX) controls, non-residents can open two types of baht accounts with commercial banks: a Non-Resident Baht Account for Securities (NRBS) and a Non-Resident Baht Account (NRBA). NRBS must be used for investment in securities and other financial instruments in Thailand (e.g., equity instruments, debt instruments, unit trusts, and exchange-traded derivatives), as well as any payments relating to such investments (e.g., tax payment relating to securities investment, brokerage fee, and custodian fee). NRBA is for general purposes other than those of NRBS. Outstanding balances of each type of account at the end of each day shall not exceed a limit of THB300 million per non-resident, which includes balances of all accounts opened by each non-resident with all financial institutions in Thailand.

Overview of Corporate Bonds

The infrastructure and process of corporate bond transactions is just like that of government bonds.

Trading

OTC Market
Corporate bonds are mostly traded in the OTC market.

Exchange Market
Exchange trading for corporate bonds takes place in BEX.

CCP

CCP for the OTC Market
There is no clearing function in the OTC market.

CCP for the Exchange Market
TCH is the CCP in the exchange market for corporate bonds.

Bond Settlement

Corporate bonds are settled via PTI in TSD on an RTGS basis.

Cash Settlement

Cash settlement of corporate bond transactions takes place in BAHTNET.

Interest Payment and Redemption

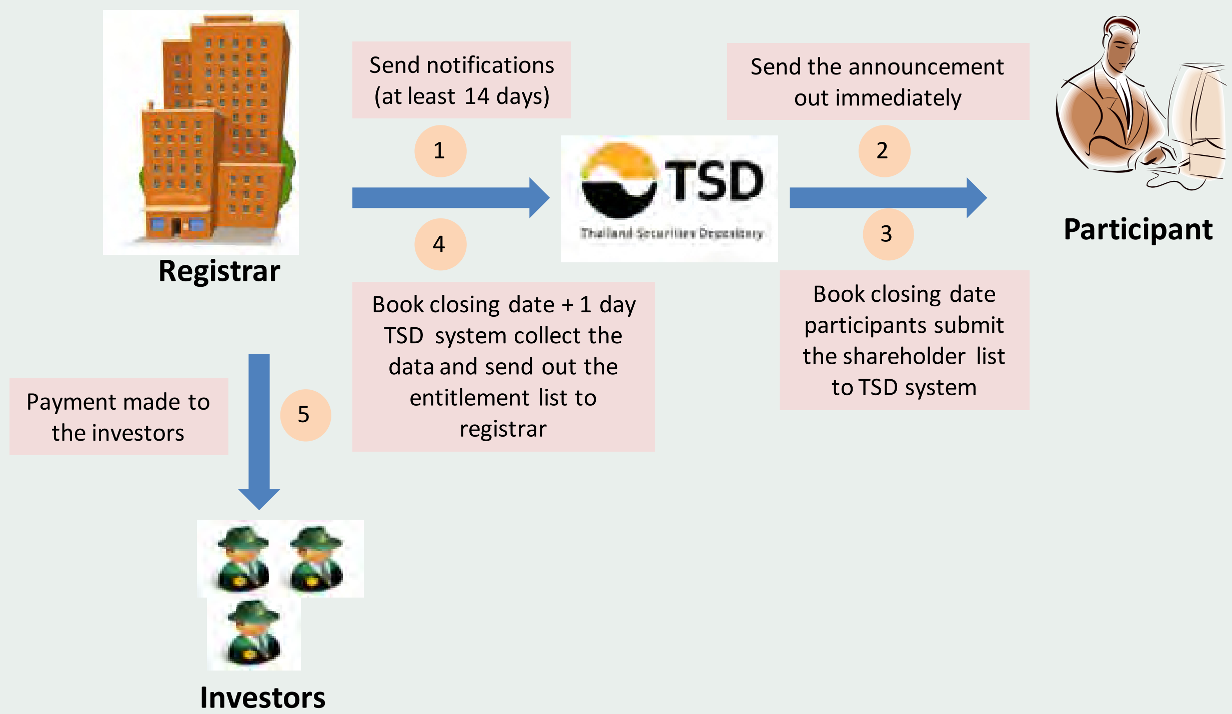
Interest Payment and Redemption of Government Bonds

Most bonds pay interest on a semi-annual basis. Interest is calculated on a 365-day basis (366-day basis in a leap year). Withholding tax is deducted at the source (**Figure TH04**).

Interest Payment and Redemption of Corporate Bonds

Interest payment and redemption of corporate bonds is same as that of government bonds. In addition to the rules for government bonds, for a corporate bond registered with BMA the interest is paid on the same date every year. In the event that the interest payment date is on a bank holiday, the interest is paid on the next business day, but the number of days in the interest calculation is unchanged and interest is calculated up to the interest payment period. The last interest payment is made on the maturity date. If the maturity date is a bank holiday, the payment is made on the next following business day and the additional interest is calculated on a daily basis.

Figure TH04: Interest and Redemption Payment Process



Source: Stock Exchange of Thailand (SET).

Typical Business Flow

DVP Flow of Government Bonds for Domestic Trades

The business flow in Thailand for government bonds is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

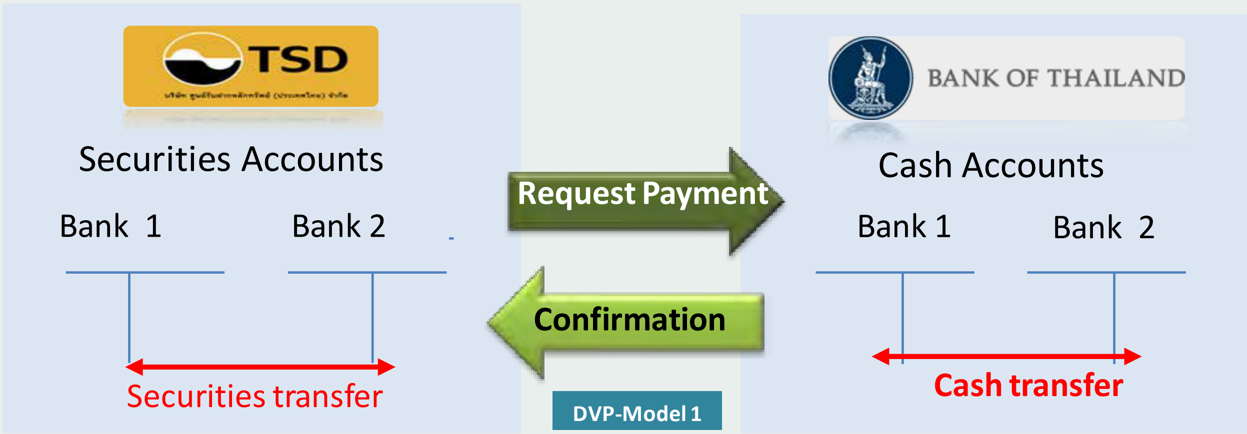
(i) **Pre-Settlement Matching**
Pre-matching is mandatory and carried out between the counterparties via telephone and TSD, although there is no distinct system for pre-settlement matching.

(ii) **Bond Settlement**
The matching and book-entry system, under PTI, is used by TSD. PTI does not receive any instruction from other systems, such as a pre-settlement matching system or trading system, while the sell side and buy side input trade details into PTI. After receiving trade details from the sell side and buy side, TSD performs central matching and sends settlement confirmation to both sides.

TSD adopts DVP Model 1 of the BIS definition for government bond settlement. If trade details from both sides are matched, TSD holds bonds within PTI. Then TSD sends cash settlement details to BOT.

(iii) **Cash Settlement**
After receiving settlement details from TSD, BOT conducts cash settlement. BOT does not need to reconfirm for cash settlement by the sell side or buy side as they have already authorized TSD to send the money settlement instruction on their accounts. After cash settlement, BOT sends settlement confirmation to both sides of the trade **(Figure TH05)**.

Figure TH05: DVP Settlement



Source: Bank of Thailand

For further details, please refer to **Part 3 TH03 (Government Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Corporate Bonds for Domestic Trades

Typical corporate bond transaction flows are just like those for government bond flows.

For further details, please refer to **Part 3 TH04 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

The Thai baht is freely convertible for SPOT value. FX against baht for all other value dates requires proper underlying transactions. Offshore FX trading for investment is allowed for all investors. Foreign investors are also not subject to any restrictions on pre-funding, third-party FX, and repatriation. Regarding FX reporting, any payments made from or received into accounts from residents THB account requires proper documentation support. In terms of overdraft and cash balances for non-residents, foreign investors have an end-of-day limit of THB300 million for each type of account (NRBS and NRBA). Overdrafts for non-residents are allowed, but BOT does require the foreign investor to sign an overdraft agreement with the onshore commercial bank prior to having the credit facility in place.

For further details, please refer to **Part 3 TH05 (Bond Transaction Flow for Foreign Investors OTC Market / DVP)**.

Interest Payment and Redemption of Government Bonds

Business flows of interest payment and redemption in Thailand are analyzed using a typical flow. Key findings of the analysis are given below.

(i) **Paying Agent (PA)**
For government bonds, BOT is appointed as the PA for MOF. BOT requests payment for an issuer, receives a record book of bond-holders from TSD, calculates interests, and conducts interest payment and redemption on behalf of the issuer.

(ii) **CSD**
There is a designated central securities depository (CSD) called TSD for government bonds in Thailand that has no banking license and no account with BOT.

(iii) **Payment Flow**
Central bank cash settlement system is used for interest payment and redemption, and a commercial bank is used as cash settlement infrastructure. Central bank money is more secure than commercial bank money.

(iv) **Tax**
Thailand imposes withholding tax on interest for both resident and non-residents. BOT withholds income tax on behalf of the issuer (MOF).

(v) **Other Issues**
BOT as a PA does not notify CSD participants of interest payment and redemption in advance.

For further details, please refer to **Part 3 TH06 (Interest Payment Flow of Government Bond)** and **Part 3 TH07 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

The typical flow of corporate bonds is the same as for government bonds.

For further details, please refer to **Part 3 TH08 (Interest Payment Flow of Corporate Bond)** and **Part 3 TH09 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

TSD adopts ISO15022.

Message Items

Regarding the 10 common elements of settlement instruction and confirmation defined by the Securities Market Practice Group (SMPG), TSD has same message items as ISO15022 for MT543 and MT545.

Market Practice

Operating Hours

The CSD in Thailand, TSD, opens at 7:00. The cut-off time is 17:00 and closing is at 20:30.

Settlement Cycle

Although the bond settlement system can be on real-time basis, most market participants settle OTC bonds on a T+2 basis. In addition, bond trading in BEX is also settled on T+2. In the case of an investor from the US, the settlement cycle for OTC bonds is T+3.

Fails

For bond trading in BEX, if a transaction fails to settle on T+2 since a sell side's broker account with TSD is short of bonds, the transaction settles only in TSD's books with no real securities transferred. Therefore, the buy side's account is credited and the sell sides' account debited, which causes a pending securities. In the early afternoon of T+2, TCH immediately tries to borrow the securities on behalf of the sell side's account. If successful, no penalty is levied and the failing party only takes over the borrowing charges. If it is not successful, TCH tries again to borrow securities at the end of T+2. If successful, a "one day late" settlement penalty is levied and the sell side must bear borrowing costs. If a second borrowing attempt fails, the broker has time to regularize its position until 10:30 on T+3. If the account is still short after that time, TCH enforces a mandatory buy-in with same day settlement.

In the case of T+3, the buy-in price is the previous closing price or last bid plus five spreads (whichever is higher). In the case of T+4, the buy-in price is the previous buy-in price, closing price, or last bid price plus two spreads, whichever is higher.

The executed buy-in transaction is settled on the same day in the net clearing system between 13:30 and 14:15.

Buy-in procedures are rarely applied, since pre-matching is mandatory on SD–1 and counterparties are unlikely to match trades without having the relevant securities in their account. Penalties for late deliveries are detailed in **Figure TH06**.

The minimum penalty amount applied is THB300 per security per occurrence. In addition, SET also imposes a penalty on the broker for late settlement as outlined in **Figure TH07**.

At the Thai Bond Dealing Center, for a failed payment, a penalty of a maximum of twice the payment amount may be considered. For a failed delivery, a penalty at a rate of 5% of the value of the securities may be considered.

Bilateral Netting

A multilateral netting model for clearing and settlement for securities trading is applied in BEX, Market Alternative Investment (MAI), and SET. Thus, not all OTC bond trading uses a multilateral netting model.

Numbering and Coding

In Thailand, there is one CSD, TSD, for government bonds and corporate bonds. This section describes the numbering and coding schemes of TSD.

Numbering and Coding for the OTC and Exchange Markets

Securities Numbering

ISIN is used for bond trades. However, local numbering is also used.

Financial Institution Identification
BIC is used for financial institution identification. However, a proprietary code is also used

Figure TH06: Penalties for Late Deliveries

Delay (business days)	Penalty (% of the consideration)
≤ 1	0.50
> 1 ≤ 2	0.75
> 2 ≤ 3	1.00
> 3 ≤ 5	1.75
> 5 ≤ 7	2.50
> 7 ≤ 14	3.75

Source: Thailand Clearing House Co., Ltd.

Figure TH07. Penalty on the Broker for Late Settlement

Delay (business days)	Additional charge
≤ 2	THB 500 per trade per day
> 2	THB 1000 per trade per day

Source: Thailand Clearing House Co., Ltd.

Securities Account

The security account structure is an omnibus type and multi-layer. TSD participants manage bonds separately from their own bonds and customer's bonds in CSD. ISO20022 has not been adopted in Thai bond market. A settlement system uses proprietary account numbers to transfer bonds.

Cash Account

The International Bank Account Number (IBAN) is not used. Since market participants are banks and the fund is settled via BOT, participants use a BOT account number as a reference to transfer funds.

Character Code and Language

SWIFT format is used as the character code for bond and cash instructions. English is adopted as the standard language for payment systems.

Medium- to Long-Term Strategies

Currently, STP is being implemented for bond transactions. Most bonds are traded in the OTC market. After entering data into the PTI of TSD, the data are processed automatically without significant manual intervention, except necessary affirmation. As such, the domestic bond settlement process is sufficiently automated.

Regarding cross-border trade, messages are compliant with ISO15022 and have a high likelihood of being processed with less manual intervention by custodians. Adoption of ISIN and BIC may have some advantages in directly connecting with other CSDs in the near future.

In the very near future, both government and corporate bonds will be listed on BEX. While only publicly listed companies' bonds are currently allowed to trade on BEX, non-listed companies will soon be able to have their bonds traded on the exchange as well. However, there is not yet an electronic trading platform. In 2010, BMA signed a multilateral memorandum of understanding with four key authorities—BOT, the Public Debt Management Office, SET, and SEC—to establish the Thailand Financial Instruments Information Center (TFIIC), an infrastructure project under the Capital Market Development Master Plan 2009–14. TFIIC will centralize storage of financial instrument data and information for public access and cross-agency sharing within domestic financial markets **(Figures TH08, TH09, TH10)**.

References

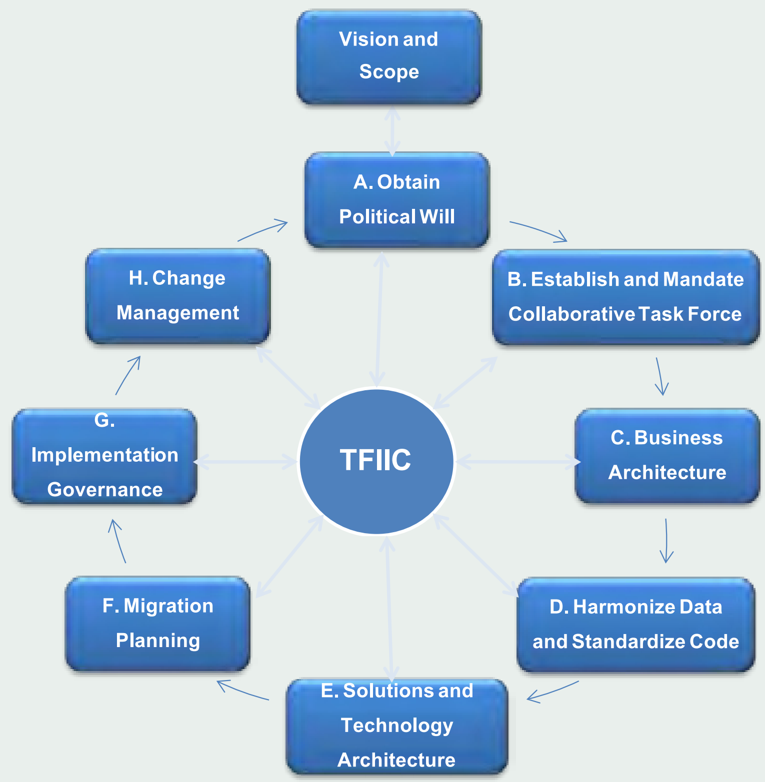
Asian Development Bank (ADB). *ASEAN+3 Bond Market Guide*.

ADB. *AsianBondsOnline*. http://www.asianbondsonline.adb.org

Executives' Meeting of East Asia Pacific Central Banks. *Payment, Clearing, and Settlement Systems in Thailand*.

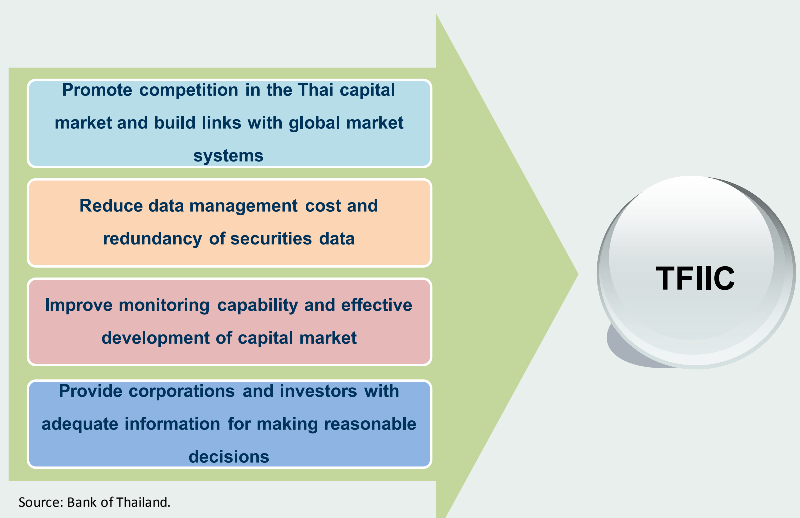
Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Figure TH08: TFIIC Implementation Framework



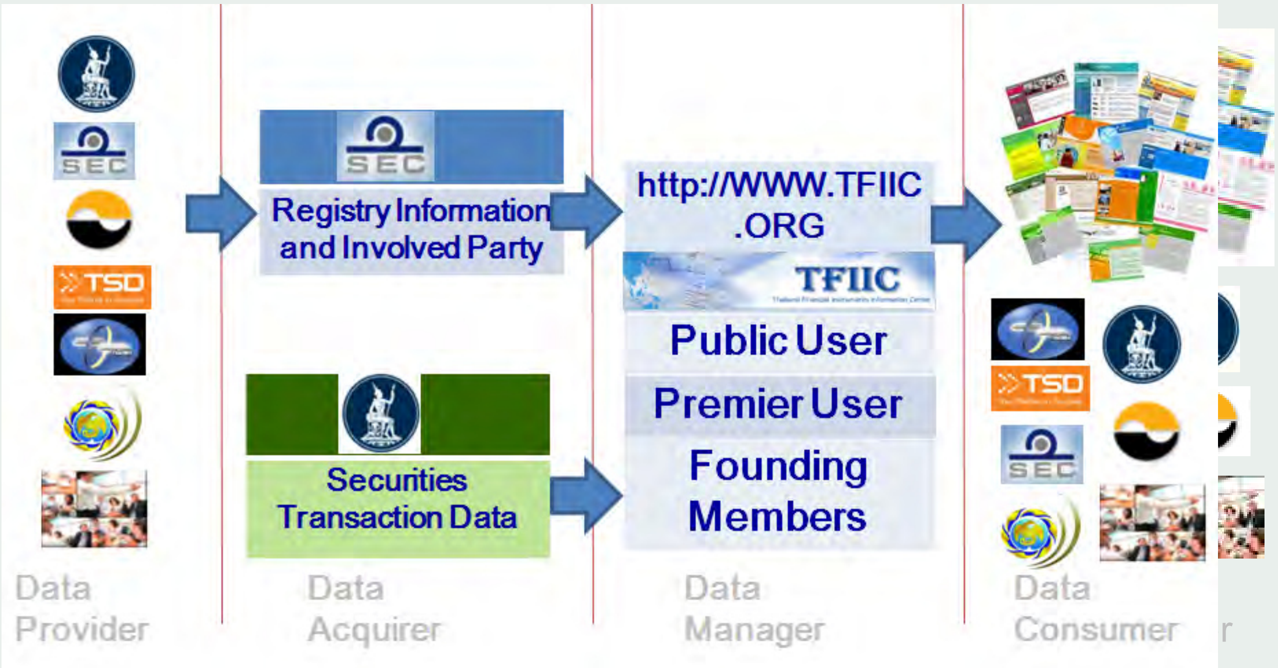
Source: Bank of Thailand.

Figure TH09: Benefits from TFIIC



Source: Bank of Thailand.

Figure TH10: TFIIC Architecture Overview)



Source: Bank of Thailand.

Viet Nam (VN)

Bond Market Infrastructure

Overview of Bond Markets

In Viet Nam, there are two bond markets: the over-the-counter (OTC) market and the exchange market. Most bonds are traded in the OTC market bilaterally by phone or some other measure, which is similar to other economies in the Association of Southeast Asian Nations (ASEAN)+3. Trade data are mainly entered into one of the two exchanges in Viet Nam: Hanoi Stock Exchange (HNX) and Hochiminh Stock Exchange (HOSE). Government bonds—comprising central government bonds, government-guaranteed bonds, and municipal bonds—and foreign currency-denominated bonds are traded in the specialized government bond market, which is operated by HNX. Corporate bonds listed on HNX and HOSE are dealt on these two exchanges, although trading volumes and values are very small compared with those of unlisted bonds. Unlisted corporate bonds are traded in the OTC market.

According to the Asian Development Bank's (ADB) *AsianBondsOnline* website, local currency (LCY) government bonds outstanding in Viet Nam reached USD29.15 billion at the end of 1Q13, while corporate bonds were valued at USD1.05 billion.

Vietnam Securities Depository (VSD) is the central securities depository (CSD) for all bonds listed on HNX and HOSE. Bond transactions are settled by VSD, with VSD in charge of bond delivery. The Bank for Investment Development of Viet Nam (BIDV) is in charge of fund transfers (cash settlement) using delivery-versus-payment (DVP) subject to the clearing result sent by VSD.

Please refer to **Part 3 VN01 (Government Bond Market Infrastructure Diagram)** and **Part 3 VN02 (Corporate Bond Market Infrastructure Diagram)**.

Description of Related Organizations

Ministry of Finance (MOF)
MOF is a government agency with the function of implementing the state's management of finance, including the state budget (taxes, fees, other revenues, national reserves, state financial funds, and financial investment), corporate finance and financial services, customs, accounting, independent auditing, insurance, prices, and securities. MOF also holds the ownership rights of the state's investment capital in enterprises. Finally, MOF issues government bonds and participates in stock market management.

State Bank of Viet Nam (SBV)
Viet Nam National Bank was established in 1951 and changed its name to State Bank of Viet Nam

(SBV) in 1960. SBV is the central bank in Viet Nam. Its main functions are to formulate and implement national monetary policy, stabilize the currency, control inflation, and improve socio-economic development. In managing the currency and all banking activities, SBV contributes to the development of market structures. It regulates foreign exchange controls for stock market activities and has plans to develop a high-value payment system for cash and bond settlement.

State Securities Commission (SSC)
SSC is responsible for the day-to-day monitoring and supervision of the securities market and securities businesses in Viet Nam. SSC regulates and acts as the supervisory agency for the securities market and the exchanges, including HOSE and HNX. All exchange regulations are issued by SSC, which has the power to suspend trading in securities, delete listings of companies to protect investor interests, and grant or revoke licenses relating to securities issuance, brokerage, and custody services. Effective March 2004, SSC came under the jurisdiction of MOF.

Hanoi Stock Exchange (HNX)
HNX is a government-owned and -operated exchange under the oversight of SSC. HNX serves as the secondary market for fixed income in Viet Nam, focusing on government bonds, government-guaranteed bonds, and municipal bonds. In September 2009, HNX launched a specialized market to trade in government bonds. Innovations in the new market include a system of Internet-based databases that are updated frequently, as well as the quoting of prices and yields of bond trades.

Hochiminh Stock Exchange (HOSE)
HOSE is a government-owned and -operated exchange under the oversight of SSC. HOSE serves as the secondary market for fixed income in Viet Nam (focusing on municipal bonds and corporate bonds). In June 2008, all government bonds with maturity dates at least 6 months in the future were moved from HOSE to HNX.

Vietnam Securities Depository (VSD)
VSD provides the following services: registration, depository, clearing, settlement, and corporate action services for securities listed on stock exchanges and the securities of unlisted public companies. VSD also acts as a dividend and bond interest payment agent for issuers, transferring ownership for those transfers which do not arise from securities transactions. VSD conducts registration, depository, and transfer agent services for other securities upon agreement with issuers. VSD was established under the Securities Law on 27 July 2005 as the sole agent providing support services to complete transactions in the Viet Nam securities market. It commenced operations in May 2006. It is headquartered in Hanoi, with a branch in Ho Chi Minh City. Securities can be deposited at either the headquarters or the Ho Chi Minh branch, based on the securities holders' convenience. Securities are immobilized at VSD and participant positions are updated via book entry. On 18 December 2008, VSD was re-organized from a state income-generating service delivery agency into a wholly state-owned company. Under the new structure, VSD is a limited liability company that is 100% owned by MOF with responsibility for monitoring securities registration, deposit, clearing, and settlement.

Bank for Investment and Development of Viet Nam (BIDV)
BIDV is the oldest commercial bank in Viet Nam. BIDV has been designated as a settlement bank for cash settlement for the bond market. All market members are required to maintain a cash account with the designated clearing bank for cash settlement of trades.

Overview of Government Bonds

Trading

Over-the-Counter Trading
In Viet Nam, government bonds—comprising central government bonds, government-guaranteed bonds, and municipal bonds—are traded in the specialized government bond market under the operation of HNX. Government bond trading is performed through a direct negotiation method, including electronic negotiation and conventional negotiation. After trading, all traded data are entered into stock

exchanges. The trading results are transmitted to VSD for clearing and settlement through an online connection.

Exchange Trading
The exchange market is utilized as the infrastructure for trade settlement, but the form of trading is direct negotiation.

Clearing and Central Counterparty

There is no central counterparty (CCP) for the government bond market in Viet Nam. For all government bond transactions traded on stock exchanges, trading results are sent to VSD.

Bond Settlement

After receiving transaction results from the exchange markets, VSD performs confirmation between trading parties, netting, and settlement processes. Settlement is considered irrevocable after the market deadline, and it becomes obligatory to settle the trades. If the sell side or buy side neither affirms nor disputes the trades, it is deemed to have been affirmed by default and such trades are included in its settlement obligations. In fact, VSD sends transaction settlement data to BIDV in the form of files in a manner of straight-through-processing (STP).

Matching at HNX is proprietary matching. The sell side and buy side enter traded data into HNX and forward the data to VSD after it has been matched. They access the VSD system and check the stored data to be correct. If both the sell side and buy side confirm that the traded data are correct, it means that bond settlement instructions are matched **(Figure VN01)**.

DVP Model 3 of the Bank for International Settlements (BIS) definition applies in the Viet Nam bond market.[1] VSD does the netting for both cash and securities by calculating the net payment and delivery obligations of each member, and accordingly sends settlement instructions to BIDV. A proprietary network without a specific name is used. The types of lines are leased line, Internet Protocol-Virtual Private Network (IP-VPN), and Multi-Protocol Label Switching (MPLS). The protocol is Transmission Control Protocol/Internet Protocol (TCP/IP). The interface to access to the system is a terminal and the message format is Extensible Markup Language (XML).

Cash Settlement

On settlement day, participants must transfer the net cash obligations trades to their appropriate cash settlement accounts at BIDV after netting. Depository members have to transfer cash to their relevant accounts at BIDV (usually through the interbank system). BIDV then processes this through BIDV's system based on netting results **(Figure VN02)**.

Overview of Corporate Bonds

Trading

OTC Trading
Corporate bonds are mainly non-listed and traded on the OTC market. The trading results are transmitted to VSD for clearing and settlement. Bond settlement is made by VSD and cash payment is made by BIDV.

Exchange Trading
In Viet Nam, some corporate bonds are listed and traded on HNX and HOSE, though the number and value is limited compared to those of non-listed bonds. Corporate bond trades are entered into stock exchanges for matching.

CCP

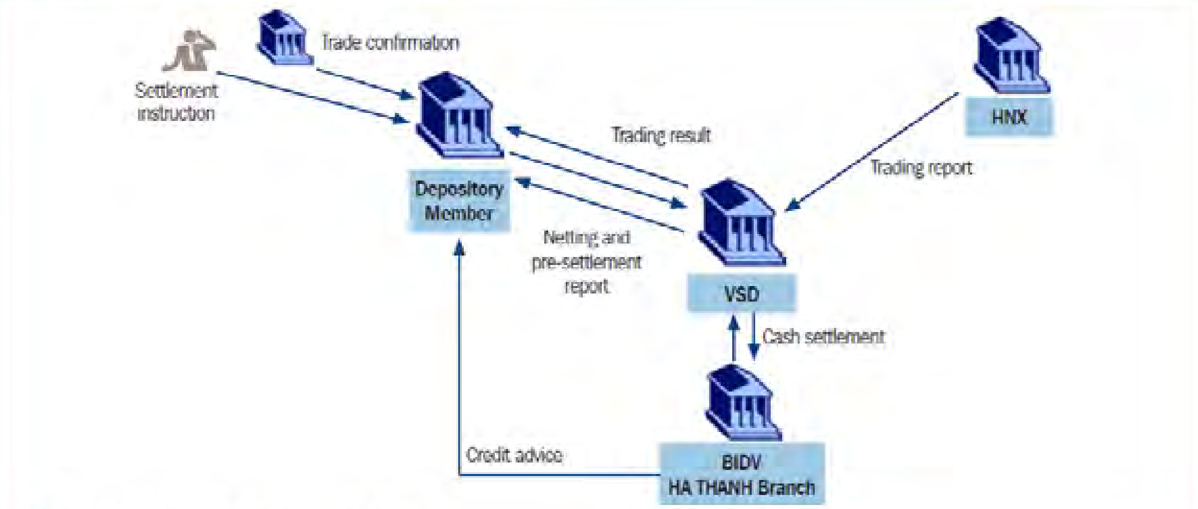
There is no CCP for the bond market in Viet Nam.

Bond Settlement

While all governments bonds traded data are entered into the stock exchanges, some corporate bonds data traded on OTC market are not entered.

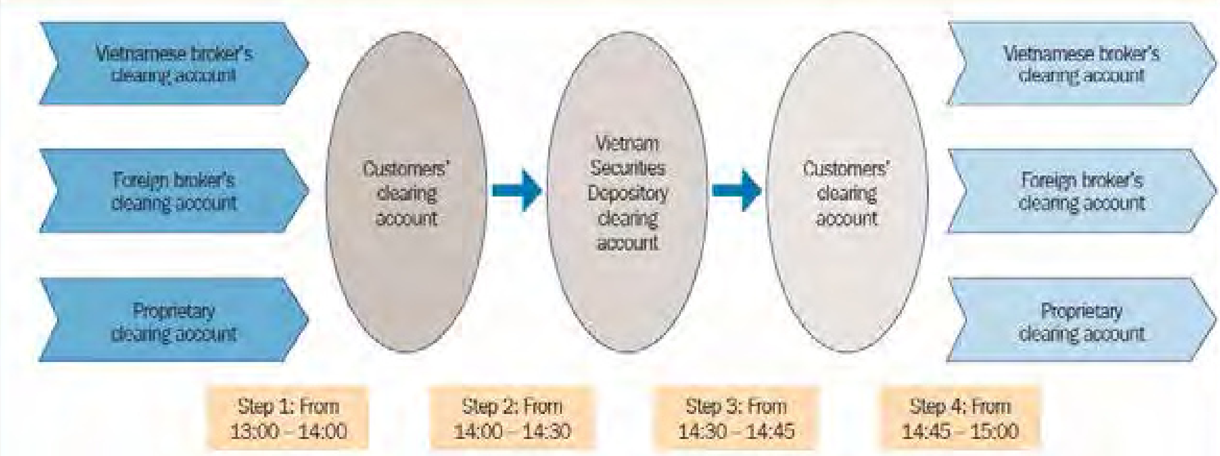
[1] This refers to systems that settle transfer instructions for both securities and funds on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle. BIS DVP Model 1 applies to bonds denominated in US dollars.

Figure VN01: Bond Settlement Process in the Viet Nam Bond Market



Source: Bank for Investment and Development of Viet Nam.

VN02: Cash Settlement Process in the Viet Nam Bond Market



Source: Bank for Investment and Development of Viet Nam.

For corporate bond trade data entered into the stock exchange, the method of corporate bond settlement is similar to that for government bonds.

Cash Settlement

Cash settlement is made by BIDV. The method of cash settlement is similar to that for government bonds.

Interest Payment and Redemption

Interest Payment and Redemption of Government Bonds

Government bonds have tenors of 2, 3, 5, 7, 10, or 15 years, and are issued by MOF through the State Treasury and auctioned via HNX. The redemption amount of government bonds is fully paid back on the maturity date, and interest is paid every 6 months or 1 year until maturity.

According to Decree No.160/2006/ND-CP, non-residential investors (as foreign investors) must open Vietnamese dong indirect investment accounts at licensed credit institutions in order to conduct indirect investment activities in Viet Nam. According to Circular 213/2012/TT-BTC, foreign investors shall register the securities trading code at VSD before directly performing securities investment trading through the purchase and sale of stocks, bonds, securities, and capital contribution investments in accordance with securities laws and other relevant legal documents.

Each foreign investor entitled to open one indirect investment capital account at one depository bank is permitted to conduct the business of foreign exchange to perform indirect investment activities in Viet Nam. All money transfers to carry out trading and investment operations specified above and other payments related to securities investment operations of foreign investors; the receipt and use of dividends, divided profits, purchase of foreign currency at credit institutions licensed to conduct foreign exchange business in Viet Nam for transfer abroad; and other related transactions must be conducted through this account.

Interest Payment and Redemption of Corporate Bonds

Corporate bonds are issued by companies and state-owned enterprises (SOEs) for their funding needs. They are issued in bearer or registered form with a minimum face value of VND100,000 or multiples of VND100,000 and a tenor of 1 year or more. Bonds can be convertible. Interest payment of Viet Nam corporate bonds vary depending on the cash flow of the issuer.

Typical Business Flows

DVP Flow of Government Bonds for Domestic Trades

The business flow in the Viet Nam government bond exchange market is analyzed by means of comparison with a typical DVP flow. Key findings of the analysis are described below.

(i) **Pre-Settlement Matching**
Pre-settlement matching is completed manually on S-1. There is no automated pre-settlement matching in the Viet Nam bond market. Pre-settlement matching using forward-dated transactions to be entered on S-1 is also not utilized.

(ii) **Bond Settlement**
Traded data are entered into HNX and matched before being transmitted to VSD.[2] The trades are netted and settled through the accounts in VSD for bonds and in BIDV for cash settlement. Therefore, it is not a Real-Time Gross Settlement (RTGS) system. HNX sends trade data, instead of settlement instruction data, to VSD. After receiving the trade results from HNX, VSD conducts cash

[2] Government and government-guaranteed bonds are traded only on HNX; however, both municipal and corporate bonds are traded on HOSE and HNX.

and securities multilateral netting. There are no messages transmitted either from HNX or VSD to participants for settlement instruction data. Participants need to access an application-based terminal or physically visit the sites to obtain information. Based on the confirmation, VSD effects the settlement without changing the status of the transaction in the central database from the participants. VSD notifies the summary of cash multilateral netting to BIDV for cash settlement, and the data are processed in a manner of STP from VSD to BIDV. VSD blocks bonds within a book entry-system before sending notice of the transaction results.

(iii) **Cash Settlement**
VSD sends cash settlement instruction data after netting. BIDV, a commercial bank, plays a role as cash settlement bank. There is no confirmation sent after settlement to either the sell side or buy side.

For further details, please refer to **Part 3 VN04 (Government Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Corporate Bonds for Domestic Trades

Corporate bonds are mainly non-listed and instead traded in the OTC market through direct negotiation. The flow of corporate bond transactions is similar to the government bond transaction flow in Viet Nam.

For further details, please refer to **Part 3 VN05 (Corporate Bond Transaction Flow for Domestic Trades)**.

DVP Flow of Cross-Border Bond Transactions

Foreign exchange (FX) funding to the domestic custodian on the buy side needs to be completed before sending a trade order. Prefunding is also required.

For foreign Investors, there are some points to be considered before participating in the Viet Nam bond market since the Vietnamese dong is a restricted currency and can only be traded onshore with an authorized financial institution. In regard to FX trades with an underlying investment, custodians provide foreign investors with both foreign currency and dong cash accounts for the purpose of facilitating the funding of securities transactions and repatriation of proceeds. For pre-funding, FX should be completed, at the latest, for value 1 day before the settlement date to fund purchases. Market practice requires all securities transactions to be 100% pre-funded. Also, when foreign investors purchase foreign currency against dong, they are subject to strict conditions and documentation requirements. The documents include the client's incoming remittance instructions, foreign exchange conversion instructions, securities sales proceeds advice, and settlement instructions. Overdrafts are not allowed for foreign investors. Interest income and capital gains can be repatriated with the provision of supporting documents indicating that the money has been remitted and invested in the Viet Nam market and evidence (clearance) from the tax office that all tax obligations have been fulfilled. There is no restriction on third-party FX for foreign investors.

For further details, please refer to **Part 3 VN05 (Bond Transaction Flow for Foreign Investors OTC Market)**.

Interest Payment and Redemption of Government Bonds

The business flow of interest payment and redemption of government bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **Paying Agent (PA)**
For government bonds, VSD is appointed as the paying agent (PA), according to the Decision No. 1393/QD-BTC of the MOF on the Organizational and Operational Charter of VSD dated 6 June 2009. VSD sends data to MOF instead of a payment request, and MOF sends instruction of cash transfer to settlement banks.

(ii) **CSD**
VSD is designated as CSD in Viet Nam, and has no banking license. VSD has an own cash account in the RTGS system of BIDV, which is designated as a settlement bank

for cash settlement. VSD generates and sends members the bondholder list and the receiving members send VSD written confirmation of the lists.

(iii) **Payment Flow**
For interest and redemption payment, MOF transfers funds for principal and interest into VSD's cash account from which principal and interest are distributed to related depository members. Interest and redemption payment is conducted through BIDV.

(iv) **Tax**
According to Circular No. 111/2013/TT-BTC of MOF dated 15 August 2013, residential and non-residential investors are exempt from tax on interest from government bonds.

For further details, **please refer to Part 3 VN06 (Interest Payment Flow of Government Bond)** and **Part 3 VN08 (Redemption Payment Flow of Government Bond)**.

Interest Payment and Redemption of Corporate Bonds

The business flow of interest payment and redemption of corporate bonds is analyzed using a typical flow. Key findings of the analysis are given below.

(i) **PA**
For corporate bonds, VSD is appointed as the PA, according to Decision No. 1393/QD-BTC dated 6 June 2009 on the Organizational and Operational Charter of VSD. VSD sends a list of bondholders entitled to interest payment to the bond Issuer instead of a payment request. Within 2 business days of settlement day, the issuer must transfer cash to VSD's account at BIDV. Then, VSD distributes cash to relative members.

(ii) **CSD**
VSD is designated as CSD in Viet Nam, though it has no banking license. VSD has an own cash account in the cash settlement system of BIDV, which is designated as a settlement bank for cash settlement. VSD receives the bondholder list with tax data from CSD participants.

(iii) **Payment Flow**
For interest and redemption payment, the issuer transfers funds for principal and interest into VSD's cash account from which principal and interest are distributed to related depository members. Interest and redemption payment is conducted through BIDV.

(iv) **Tax**
There are withholding taxes for both of residents and non-residents. The bond issuer directly pays tax to the tax office as withholding tax agent. As for corporate bonds, according to Circular No. 111/2013/TT-BTC of the MOF dated 15 August 2013, non-residential and residential individual investors are imposed a 5% tax on interest and redemption payment. As for non-residential investors (institutional and individual), according to Circular No.60/2012/TT-BTC, the withholding tax on income received from fixed-income investments is 5% of taxable income.

For further details, please refer to **Part 3 VN08 (Interest Payment Flow of Corporate Bond)** and **Part 3 VN9 (Redemption Payment Flow of Corporate Bond)**.

Message Standard

Message Format

VSD has not adopted ISO15022 or ISO2002 for its book-entry system.

Message Items

VSD uses its own format for transferring data with exchanges, settlement banks, and members. However, VSD has been researching international standards such as ISO15022 and ISO20022 and may apply them to VSD's system in the near future.

Regarding the 10 common elements of settlement instruction and confirmation defined by the

Securities Market Practice Group (SMPG), VSD has elements of instruction identification, trade data, and a client receiving–delivering agent in its proprietary format, and uses ISIN for financial instruments in its settlement instruction and confirmation. In VSD, the element of the effective settlement date is automatically calculated from the trade date, so it is not included in the settlement confirmation while it is contained in the instruction. VSD gets the element of receiving–delivering agent from the trading system right before the settlement instruction from the sell side and buy side, so it is not included in settlement instruction or confirmation. VSD does not have the elements of effective quantity of financial instruments, effectively settled amount, safekeeping account, or place of settlement in its settlement instruction and confirmation.

Market Practices

Operating Hours

Operating hours are from 8:00 to 17:00. The cutoff time is 9:00 for bond settlement and 11:00 for cash settlement on the settlement date. The cut-off time is the time to close the balance of listed securities clearing and settlement deposit accounts of VSD members at the settlement bank, and the balance of securities accounts at VSD to determine the solvency of members.

The government bond market is open from 8:30 to 11:00 on business days. Listing on the bond market takes place from 9:00 to 11:30 and from 13:00 to 14:15.

Settlement Cycle

The settlement cycle for both government bonds and corporate bonds is T+1. However, the definition of trade date in Viet Nam is different from that of other ASEAN+3 markets. In Viet Nam, the date when trade data are entered into HNX is regarded as the trade date instead of the date when the bond is actually traded and agreed upon by phone or some other measure.

Fails

A fail means that a party does not have sufficient balance (either cash or bond) at the cut-off time set by VSD to fulfill relevant securities transaction settlement obligations.

In the case a good-faith effort to resolve a fail is conducted, VSD shall automatically cover the shortage of funds in accordance with the settlement compensation mechanism and procedures set out in VSD's Guideline on Securities Clearing and Settlement.

A penalty is assessed for a fail due to insufficient bonds resulting in the cancellation of a transaction. Members having cancelled settlement transactions shall be completely responsible for client losses and relevant members if the transaction is not settled. The compensation is negotiated between members but is not to exceed 10% of the value of the cancelled transaction.

A penalty is also assessed for a fail due to insufficient funds. In cases of funds from a settlement compensation fund, an interest rate on loaned funds of 0.1% per day is assessed for the first 5 days and 0.15% per day for every day thereafter. In cases of using funds supported from the settlement bank, an interest rate is assessed regulated at loan supportive contract for ensuring payment ability signed between the failing party and the settlement bank. In cases of using funds supported from the settlement bank, such as a shortage of funds of more than VND25 billion, an interest rate is assessed regulated at loan supportive contract for ensuring payment ability signed between the failing party and the settlement bank.

Bilateral Netting

There is no bilateral netting scheme in Viet Nam.

Taxation

For corporate bonds, according to the Circular No. 111/2013/TT-BTC of the MOF dated 15 August 2013, non-residential and residential individual investors are imposed a 5% tax on interest and redemption. For non-residential investors (institutional and individual), according to the Circular No. 60/2012/TT-BTC, the withholding tax on income received from fixed-income investments is 5% of taxable income.

Numbering and Coding

Numbering and Coding for the OTC and Exchange Markets

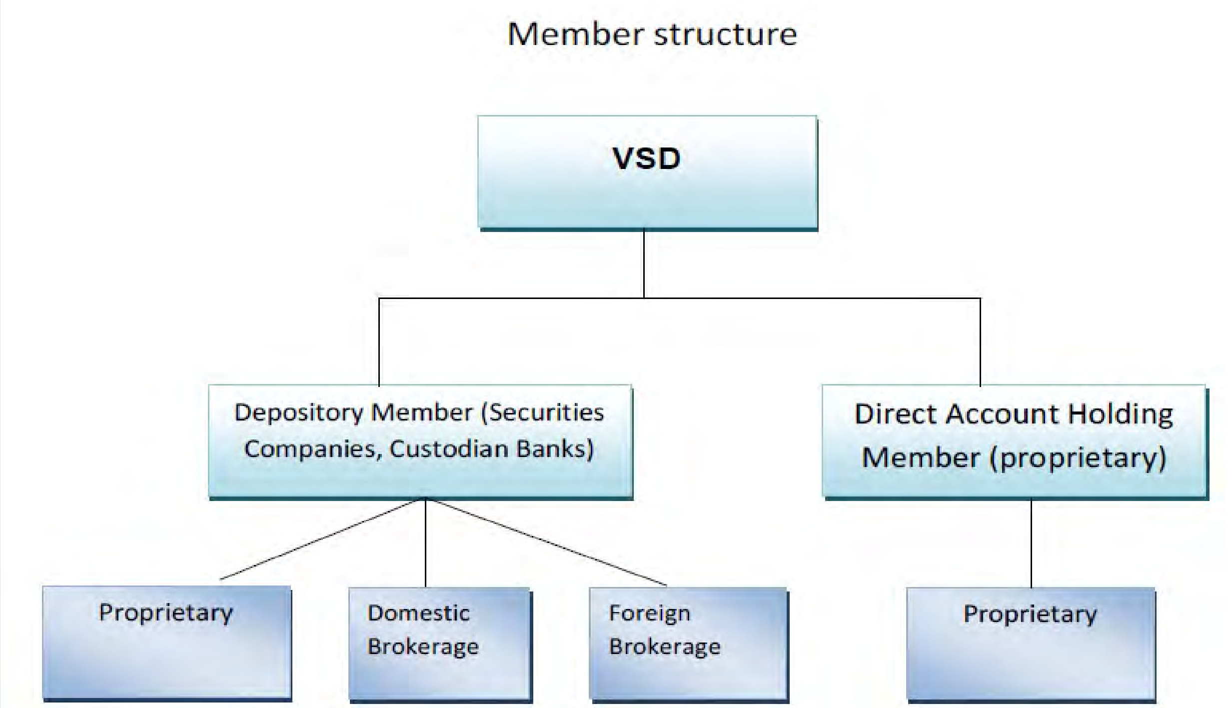
Securities Numbering
VSD issues International Securities Identification Number (ISIN) for all bonds registered with VSD and listed in the stock exchanges since VSD is a full member of the Association of National Numbering Agencies (ANNA). Local code is used domestically and needs to be converted to ISIN. The market allows investors the option of using ISIN code and local code. However, local code is always used for domestic trades. ISIN codes are alternatively used subject to specific conditions.

Financial Institution Identification
Local code is used domestically. VSD does not accept Business Identifier Code (BIC). Therefore, the participants of VSD need to convert BIC into local code when BIC is used by foreign investors.

Securities Account
The security account structure is omnibus type and multi-layer. CSD participants manage their own bonds and customer's bonds separately in CSD. A local securities account is used. VSD's mechanism of account management is described in **Figure VN03**.

Cash Account
Local cash account numbering is used.

Figure VN03: VSD Mechanism of Account Management



Source: Vietnam Securities Depository

Character Code and Language
Unicode (UTF-8) is used. Vietnamese is used as the official language for bond trade and settlement infrastructures.

Medium- to Long-Term Strategies

STP is realized given the current situation in Viet Nam in which data are processed and transmitted to BIDV for cash settlement through VSD after entering traded data into HNX. However, there are still many paper-based processes between participants (sell side and buy side) and infrastructure operators (HNX, VSD, and BIDV), which need to be improved. Therefore, VSD is working on development of bond trade- and settlement-related infrastructures based on international standards. New IT-related initiatives to introduce STP from trade to settlement, including depository, are being planned by the stock exchanges and VSD. New investments to meet technical criteria set up by the stock exchanges and VSD also need to be considered.

There is no system infrastructure for CCP in Viet Nam. However, Viet Nam market is working on a CCP project and will implement a CCP model.

Viet Nam has been researching international standard such as ISO15022 and ISO20022 and is expected to apply them to VSD's system in the near future.

Viet Nam is also pursuing an initiative to switch the payment function for government bond transactions from BIDV to SBV.

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Note: Some parts in this report are quoted from sources, such as the above references, and the websites of bond market infrastructure operators.

Questionnaire for Phase2 of ABMF SF2

For all ABMF SF2 members and experts

Economy or country	

Contact person	
Institution	
Mailing address	
Phone number	
e-mail address	

Alternate person	
Institution	
Mailing address	
Phone number	
e-mail address	

Notes:
National members (and experts) are expected to answer the following questions to the extent possible. If International Experts could voluntarily answer the following questions for all possible economies, ADB Consultant for SF2 will be extremely appreciative.

ADB consultant for SF2 does understand this is an extremely demanding request, but very much appreciates the kind support of SF2 members and experts wherever possible in order to develop efficient and smooth cross-border bond trading and settlement for liquid and stable bond markets in ASEAN+3.

Could you please post all answers on the ADB site for phase 2, or send answers back to Dr. Taiji Inui, ADB Consultant for SF2 by the end of May? All questions and comments are welcome. Taiji Inui, e-mail: inuit@nttdata.co.jp

Introduction

The scope of the phase 2 activities of ABMF SF2, reported to and approved by ABMI TF3 Meeting on 2 March in 2012 in Siem Reap, Cambodia is as follows:

A) Continue identification of transaction flows, messaging, and market practices.
- DVP flows and procedures for corporate bonds
- Interest payment and redemption of government bonds
- Interest payment and redemption of corporate bonds

B) ISO 20022 fit-and-gap analysis

C) Propose a roadmap and policy recommendations to standardize and harmonize transaction flows

D) Information sharing: LEI, data collection, etc.

General explanations of the questionnaire

1) As a result of ABMF SF2 phase 1 survey, the Government Bond Market Infrastructure Diagram in ASEAN+3 was reported to ABMI TF3 and published. The Corporate Bond Market Infrastructure Diagram in ASEAN+3 will be presented as a result of phase 2 survey of ABMF SF2.
   - Phase 1 report of ABMF SF2 mainly discussed government bond markets in ASEAN+3. But, for the phase2 survey and report of ABMF SF2, corporate bond markets will also be discussed.
   - SF2 members are expected to provide the Government Bond Market Infrastructure Diagram and Corporate Bond Market Infrastructure Diagram separately.

2) ABMF SF2 report to ABMI TF3 will be expanded including corporate bond market descriptions. DVP flows of corporate bonds will also be surveyed and analyzed as a phase 2 activity.
   - SF2 members are expected to update and refine the phase 1 report based on the new contents shown in the Appendix describing government bond markets and corporate bond markets separately.
   - ADB Consultant of SF2 will try to include bond markets and settlement infrastructures, including future plans and initiatives in Brunei Darussalam, Cambodia, Lao PDR, and Myanmar, as much as possible in the phase 2 report with the kind support of the four respective countries.

3) During the phase 1 of ABMF activities, ABMF SF2 mainly discussed DVP transactions for government bonds. As a phase 2 activity, the SF2 will survey the processes of interest payment and redemption of government and corporate bonds in each economy.
   - Some members and experts have expressed the intentions that corporate actions should be included in the scope of phase 2 activities. The importance of corporate actions has been pointed out from the standpoint of enhancing straight-through-processing (STP). For example, Statement on the Need for Universal, Standardized Messaging in Corporate Actions, written by the Association of Global Custodians (AGC), recommended that issuers should comply with international standard, ISO15022, when they contact with market participants.
   - In this regard, if market participants conform to ISO20022, information distributions about various types of corporate actions will become more flexible because of using XML. Also, issues about corporate actions have been discussed in various institutional frameworks. Therefore, discussions of ABMF need to be focused on the main purposes of ABMF.

- Considering the current situation of ASEAN+3 and the outcome of phase 1, interest payment and redemption of government and corporate bonds would be appropriate topics to start our survey on corporate action.

4) In terms of DVP transaction for government bonds, SF2 shows a model message flow based on the discussions during Phase 1. SF2 members and experts are expected to discuss characteristics of each bond market based on the model message flow. Barriers and impediments to cross-border DVP transactions in each market will also be discussed based on the model message flow.

5) SF2 will try to conduct gap analysis of message instructions and confirmations of government bond DVP transactions. SF2 will compare messages between ISO20022 and proprietary messages of each CSD. This fit-and-gap analysis will be made based on the 10 common elements provided by SMPG. Further, detailed analysis which is out of the scope of SF2 phase 2 activities will be necessary when actually migrating bond market infrastructures to be compliant with ISO20022.

6) As for a phase 2 activities, cross-border DVP flows directly connecting a CSD and a RTGS located in different economies will be discussed. This will provide some information for future possibilities of new types of bond-related trades and settlements such as cross-border collateral and cross-border repo in an automated real-time manner. "Model cross-border DVP flow is presented as an example of such a trade and settlement. SF2 members and experts are expected to point out some issues and challenges related to market practices and standardization. Related cases are shown in the Attachment.
   - As a result of phase 1 survey, there are some extra transaction flows for foreign exchange (FX) control in some countries. This FX control barriers may be removed by direct connections between CSD and RTGS systems utilizing cross-border DVP.

7) SF2 will try to draw the Roadmap. SF2 will rearrange the barriers, which are pointed out from gap analysis of phase 2 activities and the GoE Report of Task Force 4, and will discuss how to overcome these barriers. Members and experts need to argue the short-, mid-, and long term solutions for these barriers.
   - Practical issues such as settlement-related barriers, including market practices regulated by SROs, will be discussed.
   - Laws and regulations, including taxes, will be discussed as long as the issues are related to message flows of government and corporate bonds.

8) SF2 will continue to follow up the phase 1 activities by refining and updating the issues identified by GoE and ABMF SF2.

9) In terms of Legal Entity Identifier (LEI), SF2 will collect and update information for SF2 members and experts to further discuss this issue and find out some direction in each economy (possibly having some consensus in ASEAN+3).

10) In order to enhance cross-border bond transactions, the transparency of market information—such as listed bonds, information on limits placed on non-residents, and pricing and interest rates—is important. SF2 will try to share information to discuss some infrastructures for data collection and dissemination.

11) If there are some pre-conditions to answer these questions, please describe these conditions.

Premises

Bond Market Infrastructure Diagram

Could you draw the following diagrams, please?

- If you have some relevant information, documents, and websites (URL), please provide and share them with the ADB Consultant.

- ADB Consultant for SF2 would very much appreciate it if Brunei Darussalam, Cambodia, Lao PDR, and Myanmar could draw these diagrams to the extent possible.

Government Bond Market Infrastructure Diagram

ANSWER
(Please use PowerPoint template) Also, could you refer to the case of Japan, please?

Could you describe (update) government bond market in your economy, please?

ANSWER
(Could you refer to phase 1 report, please?)

Corporate Bond Market Infrastructure Diagram

ANSWER
(Please use PowerPoint template) Also, could you refer to the case of Japan, please?

Could you describe (update) corporate bond market in your economy, please?

ANSWER
(Could you refer to phase 1 report, please?)

Delivery-versus-Payment (DVP) flows of corporate bond in each market

Identifying DVP flow and procedure of corporate bond in each market to discuss cross-border STP.

Draw the typical business flowchart of corporate bonds, domestic DVP transactions, and cross-border DVP transactions, based on the template of phase 1 activities.

If you have some relevant information, documents, and websites, please provide and share with the ADB consultant.

ANSWER
(Please use PowerPoint template) When you draw them, please use sample answers as a reference.

Interest Payment and Redemption

Interest payment of government bonds

Draw the typical business flowchart for interest payment of a typical government bond to domestic investors.

[redacted]

(Please use PowerPoint template)

In cases of investment by non-residents, are there any different procedures or market practices in your economy compared with domestic investors? If yes, please write down details of the differences.

[redacted]

Present issues and challenges including barriers, short-term solutions, and medium- to long- term solutions.

ANSWER

Interest payment of corporate bonds

Draw the typical business flowchart for interest payment of a typical corporate bond to domestic investors.

ANSWER

(Please use PowerPoint template)

In cases of investment by non-residents, are there any different procedures or market practices in your economy compared with domestic investors? If yes, please write down details of the differences.

ANSWER

Present issues and challenges including barriers, short-term solutions, and medium- to long- term solutions.

ANSWER

Redemption of government bonds (with final interest payment)

Draw the typical business flowchart for redemption of a typical government bond to domestic investors. If redemption includes final interest payment, please write the comments in the process definition.

ANSWER

(Please use PowerPoint template)

In case of investment by non-residents, are there any different procedures or market practices in your economy compared with domestic investors? If yes, please write down details of the differences.

ANSWER

Present issues and challenges including barriers, short-term solutions, and medium- to long- term solutions.

ANSWER

Redemption of corporate bonds (with final interest payment)

Draw the typical business flowchart for redemption of a typical corporate bond to domestic investors. If redemption includes final interest payment, please write the comments in the process definition.

ANSWER
(Please use PowerPoint template)

In cases of investment by non-residents, are there any different procedures or market practices in your economy comparing with domestic investors? If yes, please write down details of the differences.

ANSWER

Present issues and challenges including barriers, short-term solutions, and medium- to long- term solutions.

ANSWER

Other issues

If there are any issues and challenges including barriers, could you explain them and provide us with short-term solutions, and medium- to long- term solutions, please?

ANSWER

Fit-and-gap analysis for a channel using global custodians to settle cross-border trade.[1]

In ASEAN+3, cross-border bond transactions are usually conducted through global custodians and settled as a DVP transaction in the same market (country) domestically. Therefore, the cross-border line is located between the global custodian and local custodian as shown in Figure 4.1.

The purpose of fit-and-gap analysis of business flows and market practices is to identify gaps in the DVP flow of government bonds in each market in comparison with a model cross-border DVP flow in order to realize cross-border STP. Discuss the solutions against barriers and the enhancement of cross-border DVP in each market, based on the phase 1 survey of DVP transaction flows. Output of analysis is to identify technical barriers, including market practices preventing the flow from cross-border STP.

Fit-and-gap analysis between typical cross-border DVP transaction and local procedures

Based on the model cross-border DVP transaction flow (refer to Figure 4.1), challenges and barriers in each market in terms of market practices and business processes will be discussed from a cross-border STP perspective.

- Could you focus on new issues and issues related to each infrastructure, please?

Order-management system

Do you have a system for OTC market handling an order between investment manager and agent (local broker–dealer) in your economy? If yes, could you describe it, including the types of transactions (i.e. customer side trades as well as domestic securities trades or foreign securities trades), please? What is the name of the system? Who developed the system? What are specific characteristics (differences) of the system? When did the system start production operation? What are current challenges?

ANSWER

Trading system for the OTC market

Do you have a trading system, which also has a trade matching function, between the sell side and buy side (local brokers–dealers) of the OTC market in your economy? If yes, could you describe it, including the types of eligible transactions (i.e. broker–dealer trades or customer side trades as well as domestic securities trades or foreign securities trades), please? What is the name of the system? Who developed the system? What are specific characteristics (differences) of the system? When did the system start production operations? What are current challenges?

ANSWER

1 Channel using global custodians means that settlement processes go through not only global custodians but also local custodians in each economy instead of directly connecting CSD with ICSD or other CSDs.

Post-trade matching

A) Do you have a post-trade matching system other than the trading system? If yes, what is the name of the system? Also, could you describe the system, please? Who developed the system? What are specific characteristics (differences) of the system from conventional and/or standard processes? When did the system start production operations? What are current challenges?

ANSWER

B) How you process allocation between investors and brokers for cross-border bond transactions? What are challenges for cross-border transactions?

ANSWER

Do you have standing settlement instruction (SSI) database for cross-border transactions? If yes, who is maintaining it? Also, how is it maintained? What are challenges from a cross-border transaction perspective?

ANSWER

Pre-settlement matching

Are there any system infrastructures for pre-settlement matching in your economy? If yes, what is the name of the system? Also, could you describe the system, please? When is pre-settlement matching carried out? For what purposes is pre-settlement matching needed? Do you have any other alternative measure to conduct pre-settlement matching such as using future date data entry in a book-entry system? If there is no pre-settlement matching system infrastructure, how is pre-settlement matching conducted (e.g., telephone, facsimile, or e-mail)? Is it required by regulation or market practice to conduct pre-settlement matching? If yes, is the use of a pre-settlement matching system mandatory?

Note: If a market already has post-trade matching process, pre-settlement matching does not seem to be essential. What do you think about this?

ANSWER

CSD (book-entry system)

What are the characteristics and differences of practices from other CSD systems?

- During the phase 1 survey, CSDs and its book-entry systems were mainly discussed. Ten ASEAN+3 economies have book-entry systems.

ANSWER

Central bank (RTGS system)
What are the characteristics and differences of practices from other RTGS systems?

- During the phase 1 survey, central banks and RTGS systems were mainly discussed. In ASEAN+3, 9 economies have RTGS systems.

ANSWER

CCP
Are there any system infrastructures for CCP in your economy? If yes, please describe the name of system(s) and explain the details of the system. In addition, are there any intentions to apply the clearing procedures to the non-residential transactions?

- There is no CCP for cross-border transactions in ASEAN+3 economies.

ANSWER

Details of message flows (refer to Figure 4.1)
Please make specifications for each message listed below.

C.1 / C.2 Order and Affirmation (between OTC Market or Trading System and Investment Manager and International Broker)

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C.3-2 Instruction (between post-trade matching system and pre-settlement matching system)

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C.7 Instruction and matching status

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C9-2.Instruction (from pre-settlement matching)

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C10.Instruction and settlement confirmation

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C11.Settlement data (DVP)

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

C13. Settlement confirmation (Cash)

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

S2.Instruction and settlement data

	Answer
Manual operation or system interface	
Type of line(s)	
Protocol(s)	
Interface(s)	
Message Format(s)	

Network between market infrastructures and the infrastructures and participants

Could you discuss how to connect each other by referring to the Figure 4.4: Network Between Market Participants, Table 4.1: Settlement Instructions and Confirmation of Bond and Cash, and Table 4.2: Protocols and Message Formats in ASEAN+3 Bond Markets of ABMF SF2 Report Part 1, please?

ANSWER

Market practices for government bond settlement

On the basis of assuming the observance of the government bond trade and settlement-related regulations, practices that market participants must follow to ensure fair and efficient trades, to reduce settlement risks in changing environment, and to facilitate smooth settlements in government securities transactions are to be compared across markets.

Harmonization of market practices that are not stipulated by laws or acts but agreed as rules by stakeholders such as SRO members will be an important issue for cross-border STP.

Limitation on size of settlements

The upper limit on size of bond settlements

- Each market participant should set an upper limit on the size of settlements processed in order to curb the daytime accumulation of settlements outstanding and to resolve the delay of settlements by reducing the amounts of government securities and funds necessary per settlement.

Do you have an upper limit on the size of bond settlement? If yes, what is the size of and reason for the limit? How do you handle transactions with face values exceeding the upper limit? Do you have exceptions to the upper limit on size of settlements? If yes, what kinds of transactions are exceptions?

ANSWER

Establishment of cut-off time and reversal time

A) Establishment of cut-off time

- For the purpose of recognizing fails aimed at completing all settlements on the day, cut-off time shall be the deadline decided by market participants for government securities settlements prior to the closing time of the book-entry system of the CSD.

Do you have a cut-off time in your market? If yes, what time is cut-off time in your market? What is the definition of cut-off time? Do custodians set different cut-off times for domestic and cross-border customers? Could you explain it, please?

ANSWER

B) Establishment of reversal time

- Reversal time is the period during which parties executing the relevant transaction can resolve fails if they have agreed to extend the delivery deadline over cut-off time, and correct errors in the case of any errors in settlement procedures.

Do you have reversal time in your market? If yes, what time is reversal time? What is the definition of reversal time? Could you explain it, please?

ANSWER

Guidelines for activities of market participants on settlement day

Do you have any other guidelines and/or market practices for market participants to observe? Are those guidelines and/or market practices (e.g., through-put guidelines) applicable to cross-border transactions? If yes, could you explain them, please?

ANSWER

Guidelines concerning fails

A) Definition of a fail

- In general a fail means a situation whereby a party receiving government securities has not received delivery of the relevant securities from the delivering party after the end of the scheduled settlement date.

What is the definition of a fail in your market? What is the concept such as good-faith efforts to resolve fails? What are conditions to the guidelines concerning fails?

ANSWER

B) Guidelines related to fails

Do you have guidelines related to fails? If yes, what are guidelines related to Fails?

ANSWER

C) Cost of fails

Could you explain your policy regarding costs incurred under fails?

ANSWER

D) Fails charges

Could you explain how you handle fails charges, please?

ANSWER

E) Other issues related to fails

ANSWER

Guidelines concerning bilateral netting

Do you have bilateral netting scheme? If yes, what is the netting scheme such as netting structure, face value applicable to netting, settlement type (DVP or not), contract time of original transactions (by what time), transaction types, mode of possession (only book-entry transfer government securities), transaction accounts applicable to netting, pairing method, effective timing of netting in the case of the same settlement amount, and the account for fund settlement?

ANSWER

What are operational procedures in netting such as pairing instructions, exchange of comparison notices, deadline for comparisons, method to send comparison notices, principle for sending of comparison notices, notice of objection, and sections in charge of comparison?

ANSWER

Do you have prior confirmation, prior notice, and their relation with the comparison notice?

ANSWER

Any other market practices

Any other market practices related to DVP transaction flows may be discussed. If you have any ideas, please mention them. Are there any guidelines that specialize in cross-border transactions?

ANSWER

Fit-and-gap analysis for government bond DVP transactions

The purpose of fit-and-gap analysis of message items is to identify gaps in government bond settlement instruction (sese 023.001.01 of ISO 20022 and MT541, MT543 of ISO15022) and confirmation (sese 025.001.01 of ISO 20022 and MT545, MT547 of ISO15022). Comparing the messages between international standards and local proprietary codes, SF2 will provide information about similarities and uniqueness of each market. In some cases, market practices in ASEAN+3 may be better than in other regions outside of ASEAN+3. In such cases, ASEAN+3 may contribute to forming international standards positively though ABMF activities. Also, when each economy will develop a new book-entry system complying with ISO20022, this analysis may help in the creation of a requirement definition document for the new system.

Regarding ISO15022, the following sites are referred:
http://www.iso15022.org/UHB/uhb2006/finmt543.htm
http://www.iso15022.org/UHB/UHB2005/finmt545.htm

Regarding ISO20022, the following site is referred:
http://www.iso20022.org/documents/general/Securities_SnR_Maintenance_2011.zip

The goals of fit-and-gap analysis are to identify message items in each market different from international standards. The dissolution of gaps will lead to enhance the interoperability and promote straight-through-processing of cross-border bond transactions.

The scope of fit-and-gap analysis is government bond messages only. If there are some CSDs of government bonds, please mention them.

Fit-and-gap analysis of the 10 common Elements for securities settlement instruction between ISO20022 and local practices in terms of business element name, definition, format, multiplicity, optional or mandatory, and others. The 10 Common Elements are listed below:

Elements of answer:

- Business element name
  Please specify the element name of each CSD in accordance with each ISO20022 message item
- Definition and explanation
  Please describe the definition and explanation of business elements in each CSD
- Message format
  Which is the message format in your market, ISO20022 compliant or proprietary? If it is ISO20022 compliant, please describe further details about tag structure.
- Element format
  Please describe the format of each message item, text, or number types and length (minimum and maximum) of each message item.
- Multiplicity
  Please check each message item, single or multiple?
- Optional or mandatory
  Please check each message item, optional or mandatory?
- Others
  Other relevant information, if any.

Instruction Identification (16x)

Reference assigned by the sender to unambiguously identify the message.
(MT 543: Mandatory Sequence A General Information>Sender's Message Reference)

	ISO20022(sese.023.001.02)
Element Name	Transaction Identification
Tag Structure	<SctiesSttlmTxInstr> <TxId>
Element Format	Text maxLength: 35 minLength: 1
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Trade Date (Date and Time)

Date and time at which the trade was executed.
(MT 543: Mandatory Sequence B Trade Details> Trade Date and Time)

	ISO20022(sese.023.001.02)
Element Name	Trade Details >Trade Date
Tag Structure	<SctiesSttlmTxInstr> <TradDtls> <TradDt> <Dt>/<DtTm>
Element Format	ISODate: YYYY-MM-DD ISODateTime: UTC time format (YYYY-MMDDThh: mm:ss.sss), local time with UTC offset format (YYYY-MM-DDThh: mm:ss.sss +/-hh:mm), or local time format (YYYY-MM-DDThh: mm:ss.sss)
Multiplicity	Single
Optional or Mandatory	Optional

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Settlement Date (Date and Time)

Date and time at which the financial instruments are to be delivered or received.
(MT 543: Mandatory Sequence B Trade Details> Settlement Date and Time)

	ISO20022(sese.023.001.02)
Element Name	TradeDetails >SettlementDate
Tag Structure	<SctiesSttlmTxInstr> <TradDtls> <SttlmDt> <Dt>/<DtTm>
Element Format	ISODate:YYYY-MM-DD ISODateTime: UTC time format (YYYY-MMDDThh:mm:ss.sssZ), local time with UTC offset format (YYYY-MM-DDThh:mm:ss.sss +/-hh:mm), or local time format (YYYY-MM-DDThh:mm:ss.sss)
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Quantity of Financial Instrument (Expressed as face amount)

Original par or nominal value of a financial instrument.
(MT 543: Optional Subsequence B1 Financial Instrument Attributes> Quantity of Financial Instrument> Original Face Amount)

	ISO20022(sese.023.001.0(ii)
Element Name	QuantityAndAccountDetails >SettlementQuantity
Tag Structure	<SctiesSttlmTxInstr> <QtyAndAcctDtls> <SttlmQty> <Qty> <FaceAmt>
Element Format	fractionDigits: 5 minInclusive: 0 totalDigits: 18
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Financial Instrument (International Securities Identification Number [ISIN])

This field identifies the financial instrument.
(MT 543: Optional Subsequence B1 Financial Instrument Attributes>Identification of the Financial Instrument)

	ISO20022(sese.023.001.02)
Element Name	FinancialInstrumentIdentification>ISIN
Tag Structure	<SctiesSttlmTxInstr> <FinInstrmId> <ISIN>
Element Format	[A-Z0-9]{12,12}
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Settlement amount (currency and amount)

Total amount of money to be paid or received in exchange for the financial instrument
(MT 543: Repetitive Mandatory Sequence C Financial Instrument/Account> Settlement Amount)

	ISO20022(sese.023.001.02)
Element Name	Settlement Amount >Amount
Tag Structure	<SctiesSttlmTxInstr> <SttlmAmt> <Amt>
Element Format	ActiveCurrencyAndAmount fractionDigits: 5 minInclusive: 0 totalDigits: 18 ActiveCurrencyCode [A-Z]{3,3}
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Safekeeping account to be credited or debited (35x)

Account where financial instruments are maintained.
(MT 543: Repetitive Mandatory Sequence C Financial Instrument/Account> Account >Safekeeping Account)

	ISO20022(sese.023.001.02)
Element Name	DeliveringSettlementParties/ReceivingSettlementParties >Party1 >SafekeepingAccount >Identification
Tag Structure	<SctiesSttlmTxInstr> <DlvrgSttlmPties/RcvgSttlmPties> <Pty1> <SfkpgAcct> <Id>
Element Format	Text maxLength: 35 minLength: 1
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Place of Settlement (ISO9362 Bank Identifier Codes [BIC])

Place of settlement.
(MT 543: Repetitive Mandatory Subsequence E1 Settlement Parties> Party> Place of Settlement)

	ISO20022(sese.023.001.02)
Element Name	StandingSettlementInstructionDetails > Delivering/ Receiving SettlementParties >Depository > Identification > AnyBIC
Tag Structure	<SctiesSttlmTxInstr> <StgSttlmInstrDtls> <DlvrgSttlmPties/ RcvgSttlmPties > <Dpstry> <Id> <AnyBIC>
Element Format	[A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1}
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Receiving–Delivering Agent (ISO9362 Bank Identifier Codes (BIC) or CSD Local Code)

Receiving–Delivering party that interacts with the place of settlement.
(MT 543: Repetitive Mandatory Subsequence E1 Settlement Parties> Receiving–Delivering Agent)

	ISO20022(sese.023.001.02)
Element Name	CashParties >DebtorAgent/CreditorAgent >Identification >AnyBIC/ProprietaryIdentification >Identification
Tag Structure	<SctiesSttlmTxInstr> <StgSttlmInstrDtls> <CshPties> <DbtrAgt/CdtrAgt> <Id> <BICFI> <SctiesSttlmTxInstr> <StgSttlmInstrDtls> <CshPties> <DbtrAgt/CdtrAgt> <Id> <PrtryId> <Id>
Element Format	BICFI <BICFI> [A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1} Id <Id> Text maxLength: 35 minLength: 1
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Client of Receiving–Delivering Agent (ISO9362 Bank Identifier Codes [BIC)])

Party that receives or delivers the financial instrument.

(MT 543: Repetitive Mandatory Subsequence E1 Settlement Parties> Party> Buyer–Seller)

	ISO20022(sese.023.001.02)
Element Name	CashParties >Debtor/Creditor >Identification >AnyBIC/ProprietaryIdentification >Identification
Tag Structure	<SctiesSttlmTxInstr> <StgSttlmInstrDtls> <CshPties> <Dbtr/Cdtr> <Id> <AnyBIC> <SctiesSttlmTxInstr> <StgSttlmInstrDtls> <CshPties> <Dbtr/Cdtr> <Id> <PrtryId> <Id>
Element Format	AnyBIC [A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1} Id Text maxLength: 35 minLength: 1
Multiplicity	single
Optional or Mandatory	mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Country specifics as per local market practice (if any)

If there are any messages which are specific in each economy, please write down the details in matrix below.

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	
Reason and background why the specific messages are necessary	

Fit-and-gap analysis of the 10 common elements for securities settlement confirmation between ISO20022 and local practices in terms of business element name, definition, format, multiplicity, and optional or mandatory. The 10 common elements are listed below.

Instruction Identification (16x)

Reference assigned by the Sender to unambiguously identify the message.

(MT 545: Mandatory Sequence A General Information> Sender's Reference)

	ISO20022(sese.025.001.02)
Element Name	TransactionIdentificationDetails >AccountOwnerTransactionIdentification
Tag Structure	<SctiesSttlmTxConf> <TxIdDtls> <AcctOwnrTxId>
Element Format	Text maxLength: 35 minLength: 1
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Trade Date (Date and Time)

Date/ time on which the deal was agreed

(MT 545: Mandatory Sequence B Trade Details> Trade Date and Time)

	ISO20022(sese.025.001.0(ii)
Element Name	TradeDetails >TradeDate
Tag Structure	<SctiesSttlmTxConf> <TradDtls> <TradDt> <Dt>/<DtTm>
Element Format	ISODate:YYYY-MM-DD ISODateTime: UTC time format (YYYY-MMDDThh:mm:ss.sssZ), local time with UTC offset format (YYYY-MM-DDThh:mm:ss.sss +/-hh:mm), or local time format (YYYY-MM-DDThh:mm:ss.sss)
Multiplicity	Single
Optional or Mandatory	Optional

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Effective Settlement Date (Date and Time)

Date/time on which the settlement effectively took place.

(MT 545 Receive A(MT 545: Mandatory Sequence B Trade Details> Effective Settlement Date and Time)

	ISO20022(sese.025.001.02)
Element Name	TradeDetail >EffectiveSettlementDate
Tag Structure	<SctiesSttlmTxConf> <TradDtls> <FctvSttlmDt> <Dt>/<DtTm>
Element Format	ISODate:YYYY-MM-DD ISODateTime: UTC time format (YYYY-MMDDThh:mm:ss.sssZ), local time with UTC offset format (YYYY-MM-DDThh:mm:ss.sss +/-hh:mm), or local time format (YYYY-MM-DDThh:mm:ss.sss)
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Effectively Settled Quantity of Financial Instrument (Expressed as face amount)

Quantity of financial instrument deposited into specified account (MT 545: Repetitive Mandatory Sequence C Financial Instrument/Account>Quantity of Financial Instrument> Quantity of Financial Instrument Settled)

	ISO20022(sese.025.001.02)
Element Name	QuantityAndAccountDetails >SettledQuantity >Quantity > FaceAmount
Tag Structure	<Scties SttlmTxConf> <QtyAndAcctDtls> <SttldQty> <Qty> <FaceAmt>
Element Format	fractionDigits: 5 minInclusive: 0 totalDigits: 18
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Financial Instrument (International Securities Identification Number: ISIN) This field identifies the financial instrument.
(MT 545:Mandatory Sequence B Trade Details> Identification of the Financial Instrument)

	ISO20022(sese.025.001.02)
Element Name	FinancialInstrumentIdentification > ISIN
Tag Structure	<SctiesSttlmTxConf> <FinInstrmId> <ISIN>
Element Format	[A-Z0-9]{12,12}
Multiplicity	Single
Optional or Mandatory	Optional

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Effectively Settled Amount (Currency and amount)

Amount effectively settled and which will be credited to / debited from the account owner's cash account. It may differ from the instructed settlement amount based on market tolerance level.
(MT 545: Repetitive Mandatory Sequence C Financial Instrument/Account> Amount> Settled Amount)

	ISO20022(sese.025.001.02)
Element Name	SettledAmount>
Tag Structure	<SctiesSttlmTxConf> <SttldAmt> <Amt>
Element Format	ActiveCurrencyAndAmount fractionDigits: 5 minInclusive: 0 totalDigits: 18 ActiveCurrencyCode [A-Z]{3,3}
Multiplicity	Single
Optional or Mandatory	Mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Safekeeping Account effectively credited or debited (35x)

Safekeeping account held by the party specified in this sequence.
(MT 545: Repetitive Mandatory Subsequence E1 Settlement Parties> Account> Safekeeping Account)

	ISO20022(sese.025.001.02)
Element Name	DeliveringSettlementParties/ReceivingSettlementParties >Party1 >SafekeepingAccount >Identification
Tag Structure	<SctiesSttlmTxConf> <DlvrgSttlmPties/RcvgSttlmPties> <Pty1> <SfkpgAcct> <Id>
Element Format	Text maxLength: 35minLength: 1
Multiplicity	single
Optional or Mandatory	mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Place of Settlement (ISO9362 Bank Identifier Codes (BIC))

Place of Settlement.
(MT 545:Repetitive Mandatory Subsequence E1 Settlement Parties>Party>Place of Settlement)

	ISO20022(sese.025.001.02)
Element Name	StandingSettlementInstructionDetails > Delivering/ Receiving SettlementParties >Depository > Identification > AnyBIC
Tag Structure	<SctiesSttlmTxInstr> <StgSttlmInstrDtls> <DlvrgSttlmPties/ RcvgSttlmPties > <Dpstry> <Id> <AnyBIC>
Element Format	[A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1}
Multiplicity	Single
Optional or Mandatory	mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Receiving/Delivering Agent (ISO9362 Bank Identifier Codes (BIC))

Receiving/Delivering Agent. (MT 545:Repetitive Mandatory Subsequence E1 Settlement Parties>Party> Receiving/ Delivering Agent)

	ISO20022(sese.025.001.02)
Element Name	CashParties >DebtorAgent/CreditorAgent >Identification >AnyBIC/ProprietaryIdentification >Identification
Tag Structure	<SctiesSttlmTxConf> <StgSttlmInstrDtls> <CshPties> <DbtrAgt/CdtrAgt> <Id> <BICFI> <SctiesSttlmTxConf> <StgSttlmInstrDtls> <CshPties> <DbtrAgt/CdtrAgt> <Id> <PrtryId> <Id>
Element Format	BICFI <BICFI> [A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1} Id <Id> Text maxLength: 35 minLength: 1
Multiplicity	single
Optional or Mandatory	mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Client of Receiving/Delivering Agent (ISO9362 Bank Identifier Codes (BIC))

Buyer/Seller. (MT 545:Repetitive Mandatory Subsequence E1 Settlement Parties>Party> Buyer/Seller)

	ISO20022(sese.025.001.02)
Element Name	CashParties >Debtor/Creditor >Identification >AnyBIC/ProprietaryIdentification >Identification
Tag Structure	<SctiesSttlmTxConf> <StgSttlmInstrDtls> <CshPties> <Dbtr/Cdtr> <Id> <AnyBIC> <SctiesSttlmTxConf> <StgSttlmInstrDtls> <CshPties> <Dbtr/Cdtr> <Id> <PrtryId> <Id>
Element Format	AnyBIC [A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1} Id Text maxLength: 35 minLength: 1
Multiplicity	Single
Optional or Mandatory	mandatory

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	

Country specifics as per local market practice (if any)

If there are any messages which are specific in each economy, please write down the details in matrix below.

	Answer
Element Name	
Definition and Explanation	
Message Format	
Element Format	
Multiplicity	
Optional or Mandatory	
Reasons and background why the specific message items are necessary	

Fit and gap analysis for securities settlement instruction (sese 02(iii) and confirmation (sese02(v) between ISO 20022 and local practices. Through the survey of all message items, identify country specifics as per local market practices and unsupported mandatory message items of ISO 20022.

ANSWER

Fit and gap analysis other than securities settlement instruction and securities settlement confirmation. SF2 may analyze other message items or not.

ANSWER

Cross-border transaction flows (Case 6 and 8)

In ASEAN+3, the most prevalent cross-border bond transactions are through global custodians and settled as a DVP transaction in same market (country) domestically. Therefore, the cross-border line is located between global custodian and local custodian as shown in Figure 4.1.

In this section, a cross-border DVP transaction settling bond and cash in different countries simultaneously (bond should be settled when and only when cash is settled) is to be discussed as a model cross-border DVP transaction as shown in Figure 6.1.

Possible barriers and impediments including market practices will be discussed.

There are 16 possible cross-border DVP patterns. In case 6, which was presented at the Hong Kong, China Meeting, there are several premises: bond issued by economy A must settle in the system of CSD in economy A, and currency issued by economy B must settle in the cash settlement system in economy B. Offshore trading is out of scope in case 6.

Cross-border OTC market (including repo market)

Currently there may be no significant cross-border bond OTC market in ASEAN+3 though a few companies are providing trading systems.

Could you explain the current situation of the cross-border OTC market relating to your economy, please? What are the barriers to foster such a market? What are the benefits to promoting cross-border OTC market from your perspective (investor perspective, issuer perspective, international broker perspective, local broker perspective, global custodian perspective, local custodian perspective, trading system provider perspective, CSD perspective, and central bank perspective)?

ANSWER

Linkage between CSD and CSD

In case of connection between a CSD in your economy and another CSD located in another economy, please mention issues and impediments as much as possible (refer to Figure 6.1 and 6.2). A buyer approved by the access control of CSD-B needs to be allowed to access to CSD-A via CSD-B. Do you think it is acceptable for CSD in your country? If yes, what are the conditions for CSD-to-CSD link? If not, is it prohibited by legislation, regulation or CSD rules? What are the reasons for not allowing remote access from foreign CSD (e.g., risk concerns, system limitation, tax issues)? What kinds of authentication systems to mutually accept access control will be necessary? What kinds of communication protocols will be appropriate? Who will control settlement matching? How do you handle queue and offsetting?

		Answer
General comment		
*Access control		
(Pre-settlement) matching		
Operating hours		
System	Type of line(s)	
	Protocol(s)	
	Interface(s)	
	Message Format(s)	
Priority of queue or offsetting		
Any other issues and impediments		

* Access control: CSD can admit to participation of non-residents which are approved or registered by other countries' CSD.

Linkage between CSD and Central Bank

In case of connection between CSD in your economy and a central bank located in another economy for DVP settlement of cross-currency transactions, please mention impediments as much as possible. To what extent, are cross-currency transactions of domestic bonds (or transactions of foreign-currency denominated bonds) carried out in your country? How do you evaluate the potential needs for such cross-currency transactions? Are there any barriers (e.g., regulation or banking guidelines) for the conduct of cross-currency securities transactions or foreign currency-denominated bonds? When conducting DVP for a government bond, the seller's bond is locked (earmarked, blocked, or transferred to a temporary account) and released when cash payment is completed. What kind of status does the locked bond has? Who is the owner of the locked bond? Does CSD have its own securities account in the book-entry system? If yes, for what purposes does the CSD have the account? What kinds of communication protocols will be appropriate? How do you handle queue and offsetting?

		Issues and Impediments
Types of BIS DVP model		
General comment		
Operating hour		
System	Type of line(s)	
	Protocol(s)	
	Interface(s)	
	Message Format(s)	
Any other issues and impediments		

Roadmap

When answering this section (Roadmap) of questions, please refer to Table 10.2: Summary of Market Barriers Assessment of ASEAN+3 Bond Market Guide Volume 1 Part2 and Re-Assessment of ABMI Group of Experts Report on Legal and Regulatory Feasibility. In the GOE Report one of the general recommendations encourages the publishing of a roadmap for reducing the barriers in each market. Having said that this does not necessary means that those barriers remain as barriers for ever. Also, the GOE Report recommended refining the assessment. As a matter of fact, technological advancement could turn the barriers into advantages.

When discussing a roadmap, the following are definitions of terms used:

Short-term: by 2015 or without having any system infrastructure
Medium-term: from 2016 to 2020
Long-term: after 2020

Could you share information on current activities and plans addressing the barriers and list all plans (in particular related to 7.4 Regulatory barriers pointed by GoE Report), please?

ISO 20022 migration plan

Registration agency is expected to explain migration plan of ISO 20022 world- wide and each country for each message type.

ANSWER

Follow up and refinement of barriers

Messaging standards

A) Trading system (including trade and post-trade matching system)
Do you have a trading system in your economy? If yes, what kind of messaging standard does the system use, proprietary standard, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term, and long-term plans. When did the current system start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO15022, or ISO20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

B) Clearing system or CCP
Do you have a clearing system or CCP in your economy? If yes, what kind of messaging standard does the system use, proprietary standard, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term, and long-term plans. When did the current system start production operations? Could you explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO15022, or ISO20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

C) Pre-settlement matching system

Do you have a pre-settlement matching system in your economy? If yes, what kind of messaging standard does the system use, proprietary standard, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term, and long-term plans. When the current system started production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO15022, or ISO20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

D) CSD book-entry system

Do you have a book-entry system in your economy? If yes, what kind of messaging standard does the system use, proprietary standard, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term, and long term plans. When the current system started production operation? Could explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO 15022, or ISO 20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

E) RTGS system
Do you have an RTGS system in your economy? If yes, what kind of messaging standard does the system use, proprietary standard, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term, and long-term plans. When did the current system start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO 15022, or ISO 20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

F) Bond trading and settlement system of market participants
This question is for International Experts (and National Experts). Do you have bond trade and settlement related system of your company? If yes, what kind of messaging standard does the system use, proprietary practice, ISO15022, or ISO20022? If the message standard is not ISO20022, please describe short-term, medium-term and long-term plans. When the current system started production operation? Could you explain this issue generally, please?

ANSWER	
System Name	
Standard	(proprietary, ISO 15022, or ISO 20022)
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

Settlement cycle as a market rule

A) Settlement cycle as a domestic market rule
Do you have a settlement cycle made as a common rule by a neutral organization such as a SRO (self-regulatory organization) in your market? If yes, please describe it for government bond and corporate bond. Is a domestic market rule for settlement cycle also applicable to cross-border transactions? If no, please describe future plan to have such a rule.

ANSWER	
Current rule if any for domestic players	Government bond: Corporate bond:
Current rule if any for non-residents	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

B) Settlement cycle as an ASEAN+3 market rule
Do you think common settlement cycle as a rule in ASEAN+3 market for cross-border transactions is necessary? If yes, what is an appropriate period (such as T+3 or T+2) for government bond trade and corporate bond trade? How do you set up this kind of common settlement cycle in the region?

- Settlement cycles for cross-border transactions with out-side ASEAN+3 such as with Europe and North America may be different from those inside ASEAN+3 considering time differences. Could you also comment on this issue, please?

ANSWER	
Possible goal	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Securities numbering

A) ISIN (International Securities Identification Number) issuance
In many economies, domestic securities identification numbers are still widely used. In some countries, significant period is necessary to disseminate the information. What is current situation of acceptance of ISIN in the market? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

B) Migration to ISIN for related infrastructures

Adopting ISIN is one of the important steps to implement cross-border STP in ASEAN+3. Could you describe migration plans from proprietary numbering to ISIN, for trading, clearing, pre-settlement matching, book-entry, and RTGS systems, please?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

C) ANNA (Association of National Numbering Agencies)

In 10 economies which have already bond markets, there is a full member in each economy. But, 4 countries which do not have full-fledged bond market yet, may need to establish a numbering agency. What is your plan related to numbering agency? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Party identification

A) BIC (Business Identifier Code)

In many economies, domestic securities identification numbers are still widely used. In some countries, significant period is necessary to disseminate the information. What is current situation of acceptance of BIC in the market? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

B) Migration to BIC for related infrastructures
Adopting BIC is one of the important steps to implement cross-border STP in ASEAN+3. Could you describe migration plans from proprietary code to BIC, for trading, clearing, pre-settlement matching, book-entry, and RTGS systems, please?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Matching
Please refer to the Table 6.1 Matching types in ASEAN+3 Markets of SF2 report Part1 page 25.

A) Trade matching including matching system and post-trade matching
Trade matching including trading system functions is very important to develop cross-border STP. What is current situation of trade matching? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

A) Pre-settlement matching
What is current situation of pre-settlement matching? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Dematerialization
Please refer to the Table 1.5 Exchangeability of Scripless Bonds to Physical Bonds of SF1 report Part1 page 5.

Only People's Republic of China and Japan have complete dematerialization policy.

What is current and future policy of dematerialization? What is your short, medium, and long-term plans?

ANSWER	
Current situation	Government bond: Corporate bond:
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Omnibus account or segregated account

If IT capacity such as database capacity, processing power, and network speed increases, segregated accounts can be handled without any system performance problem. Segregated account may be more transparent than omnibus account. Refer to Re-assessment of ABMI Group of Experts Report on legal and regulatory feasibility.

A) Beneficial ownership
How beneficial ownership is recognized?

ANSWER

B) Omnibus account or segregated account
What is current and future policy on omnibus account or segregated account? What is your short, medium, and long-term plans?

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Events in ASEAN+3

Members and experts present the events, projects and other plans which may have some impacts on bond trading and settlement.

ANSWER

Members and experts explain purposes and polices of each events and projects.

ANSWER

Technology advancement related to bond trading and settlement

Members and experts express their ideas about technology advancement: available schedule, merits of using these technologies. If possible, they illustrate the grounds and reasons.

ANSWER

Regulatory barriers pointed by GoE Report

Foreign investor quota
The existence of a quota implies an application process and period of waiting for a quota to become available.

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Foreign investor registration
The requirement for investor registration may potentially cause problems such as: onerous or unclear documentation requirements, length of time needed to gain approval and uncertainty of timing or outcome.

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Currency Exchange controls
Market participants may potentially experience difficulties caused by: Delays or uncertainty in the time taken to secure such approval, onerous documentation or lack of flexibility in the amount.

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

There are some FX related transaction flows for DVP trade and settlement. Could you answer FX related future plans, if possible, please?

Convertibility

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Pre-funding

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Rate management

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Reporting by non-residents

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Spot and tri-party repo

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Repatriation

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Any other barriers related to foreign exchange

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Cash controls – credit balances

Rules setting a limit on the local currency balances that may be held by non-resident investors, restrictions on investment in money market instruments or restrictions on interest-bearing accounts.

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Cash control – overdrafts

The restrictions or prohibitions on non-residents borrowing in local currency.

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Tax

A) Withholding tax

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

B) Capital gain tax

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

C) Transaction tax

ANSWER	
Current situation	
Short-term plan	
Medium-term plan	
Long-term plan	
General description	

Roadmap of payment related infrastructures

A) Trading system (including trade and post-trade matching system)
What is current platform of trading system? What are the short-, medium-, and long-term plans of the platform? When did the current system (platform) start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Platform	
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	
General description of the system	

B) Clearing system or CCP
What is current platform of clearing system? What are the short-, medium-, and long-term plans of the platform? When did the current system (platform) start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Platform	
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	

C) Pre-settlement matching system
What is current platform of pre-settlement matching system? What are the short-, medium-, and long-term plans of the platform? When did the current system (platform) start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Platform	
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	

D) CSD Book-entry system
What is current platform of book-entry system? What are the short-, medium-, and long-term plans of the platform? When did the current system (platform) start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Platform	
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	

E) RTGS system
What is current platform of RTGS system? What are the short-, medium-, and long-term plans of the platform? When did the current system (platform) start production operations? Could explain this issue generally, please?

ANSWER	
System Name	
Platform	
Short-term plan	
Medium-term plan	
Long-term plan	
Inauguration year of the system	

Connection with other CSDs

Plans for connection with other CSDs in ASEAN+3

ANSWER

Plans for connection with other CSDs of outside ASEAN+3

ANSWER

Plans for connection with ICSDs (Euroclear or Clearstream)

ANSWER

Plans for cross-border collateral

Are there any collateral management systems in your country for repo or other types of transactions, or are there any plans to develop collateral management system? What types of collateral (domestic securities or foreign securities, and collateral for repo or securities lending transactions) are eligible for these collateral management systems?

Do you have any plans to establish links between domestic RTGS systems and domestic or foreign collateral management systems?

ANSWER

Plans for development of reporting system

ANSWER	
Date	
New functions	
New Technologies	

Connection with central bank RTGS system in other countries

Plans for connection with RTGS systems in ASEAN+3

ANSWER

Plans for connection with RTGS systems outside ASEAN+3

ANSWER

Other barriers related to bond transaction

Allocation

In case of cross-border bond transactions, allocation may be executed by manual operation.

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

SSI (Standing Settlement Instruction)

In case of cross-border bond transaction, SSI may be handled by manual operation.

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Direct participant of CSD

Foreign institutions cannot be direct participants of some CSDs.

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Settlement tolerance level

Settlement tolerance lever differ from each CSD.

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Disclosure requirement
Some economies stipulate the report to authority trade by trade basis.

ANSWER	
Current conditions	
Short-term plan	
Mid-term plan	
Long-term plan	
General comment	

Changes in rules and regulations for bond markets from the standpoint of STP)

ANSWER

Changes in rules and regulations for non-resident transactions

ANSWER

Measurements for enhancement of secondary market transactions

ANSWER

Note:
Policy recommendations relating to barriers on technical aspects and business processes, including market practices, will be discussed.
Policy recommendations relating to regulatory changes, including tax and foreign exchange regime, will not be primary issues discussed, but rather shared as reference information. Information on regional infrastructures will also be shared.

Follow-up of phase 1 surveys

Filling in the blank spaces in Phase 1 report

ADB Consultant for SF2 would very much appreciate it if national members and experts could fill in the blank spaces of tables in Phase 1 report as much as possible. Could you check the attachment file (Figure 8.2) and fill in the blanks, please, if possible?

ANSWER	
Please use PowerPoint template	

Review and update the bond market diagrams and flowcharts

In phase 2 surveys, we will study corporate bond markets: overview of market, related organization, trading, CCP, and security and cash settlement. For comparison to other corporate bond markets, members and experts will update phase 1 surveys as necessary.

ANSWER
(Please use PowerPoint template)

Cross-border STP

In order to identify business processes (such as cross-border repo, securities lending, and cross-border collateral) with a high priority from cross-border STP viewpoint, further input from members and experts will be appreciated.

ANSWER

Cut-off time of each market may be surveyed and discussed from cross-border STP perspective.

ANSWER

Remote accesses: Sell side or buy side accesses from one country to other country's CSD.

ANSWER

Structure of accounts

Securities account

Members provide the information about structure of securities account in each CSD. (e.g., structure of registry)

ANSWER
(Please use PowerPoint template)

Cash account

Does central bank have its own account(s) in central bank?

ANSWER

In your economy, other economies are possible to open their own cash account in your economy's central bank or not.

ANSWER

Country codes

Could you comment on using international standard (ISO 3166-1 alpha2) as country codes for the Phase 2 report to the ABMI TF3, please?

ANSWER

Currency code

Currency code is also important for market harmonization. SF2 also recommends adopting ISO4217. If you have any idea, please present your ideas and backgrounds.

ANSWER

Detailed transaction flowchart of Government bonds

During the phase 1 activities, SF2 drew a Typical Business Flowchart for Government Bond DVP Transactions. In order to promote cross-border DVP and cross-border STP, SF2 would like to clear up the detail process of government bond DVP transaction flow in each market. Try drawing the detailed transaction flowchart as much as possible.

ANSWER
(Please use PowerPoint template)

Other issues

LEI (Legal Entity Identifier)

What is your policy on LEI? What is your current situation? How do you identify counterparties (investors), currently?

ANSWER

Data collection

What is your policy on data collection? What is your current situation on data collection? In order to enhance cross-border bond transaction, transparency of market information, such as listed bonds, limitation of non-residents, pricing and interest rate, is important. Infrastructures for data collection and dissemination could be a topic for ABMF. If you have any ideas, could you share it with members, please?

ANSWER

Contribution to ISO-related financial transactions

How do you think you can contribute to the ISO activities?

How you can contribute to sharing cost of standardization?

ANSWER

Challenges and future issues

Could you describe current challenges and future issues relating to bond markets, trading, clearing (CCP), and settlement, including cash settlement, please?

ANSWER

Any other issues related to SF2

If there are any other issues to be discussed as a topic of phase 2 of ABMF SF2 studies, could you propose them, please?

ANSWER

Fostering cross-border STP

How do you think we can foster cross-border STP in ASEAN+3?

ANSWER