# Part 1

# Bond Markets and Their Infrastructures in ASEAN+3

# Contents

# Executive Summary

The ASEAN+3 Bond Market Forum (ABMF) was established in September 2010 after being endorsed by the ASEAN+3 Finance Ministers' Meeting as a common platform to foster the standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region.[1] ABMF aims to discuss various bond market issues in order to enhance the mobilization of regional savings for regional investments, and to improve information flow in regional markets. ABMF consists of two forums: Sub-Forum 1 (SF1) and Sub-Forum 2 (SF2). The objective of SF1 is to close the information gap in regulations, market practices, and other areas in the region's bond markets.[2] SF2 focuses on enhancing regional straight-through-processing (STP) through the harmonization of transaction procedures and standardization of messages.

ABMF SF2 members and experts discussed how to enhance regional STP of bond transactions from trade to settlement. ABMF SF2 conducted a survey of delivery-versus-payment (DVP) flows and interest payment and redemption flows for both government and corporate bonds.

Survey findings on (i) bond market infrastructure, (ii) DVP flows, (iii) interest payment flows, (iv) message standards, (v) numbering and coding, (vi) market practices and other issues, and (vii) cross-border DVP flows are summarized in this report. Fit and gap analyses of DVP flows and interest payment flows were conducted to identify similarities and differences with an eye toward future harmonization in the region. Message format, numbering and coding, and market practices are also discussed with respect to standardization and harmonization. Some characteristics of cross-border DVP flows, such as additional messages to meet FX and cash controls in each economy, are also identified based on the survey results.

## Observations and Policy Recommendations

Based on our findings, the following observations and policy recommendations aimed at fulfilling the objectives of ABMF SF2 were compiled:

(i) **Bond market infrastructure**. Robust and sound bond market infrastructure such as Central Securities Depository (CSD) and Real Time Gross Settlement (RTGS) systems have already been implemented

[1] Currently, ASEAN+3 Finance Ministers and Central Bank Governors' Meeting.

[2] SF1 is presently focusing on the ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF).

in the 10 economies that have developed bond markets in the region.[3] However, infrastructure to promote further efficiency and risk reduction purposes—such as Pre-Settlement Matching System (PSMS), Central Counterparty (CCP), Trade Repository (TR), and automated Trading System (TS)—have not yet been implemented in most economies. Such infrastructure may be introduced eventually depending upon a variety of market conditions, including trade values, trade volumes, and the number of market participants.

**(ii) DVP flows**. Bond trade and settlement (DVP) flows in ASEAN+3 vary across different economies and CSDs. The flows for residents are in some cases different from those for non-residents. It is recommended that in discussing harmonizing trade and settlement flows the impact on both infrastructure and the connected participant systems be considered. Such harmonization could be utilized for defining the requirements of interlinking gateways and/or establishing a hub between CSD and/or RTGS systems in the region.

**(iii) Interest payment flows**. Interest payments and redemption flows also vary across different economies and CSDs. One of key reasons for the different flows lies in the different tax regimes applied. Regarding interest payment flows, it will be difficult to simply standardize them into a single flow since there are so many fundamental differences owing to different tax regimes (e.g., capturing the tax status of investors, legal interpretation of tax withholding agent). In our survey, many market participants expected regulators to be able to exempt non-residents from withholding tax (WHT).

**(iv) Message formats, including numbering and coding**. Message formats in most economies in ASEAN+3 are not yet compliant with international standards. It is recommended that the message format in all markets be made compliant with ISO 20022, and ABMF members and ASEAN+3 authorities are expected to support the migration of message standards of bond market infrastructure to ISO 20022. The numbering and coding standards already registered as international standards—such as International Securities Identification Number (ISIN) and Business Identifier Code (BIC)—are recommended to be adopted in ASEAN+3.

**(v) Market practices**. It is recommended that market practices be harmonized across ASEAN+3, which could lead to the smoother processing of cross-border trade and settlement. Also, it could increase the possibility for cross-border collateral, repurchases (repo), and DVP to be used more flexibly in the region. The harmonization of market practices might be discussed where possible considering the costs and benefits of implementation in ASEAN+3.

**(vi) Cross-Border STP and LCY liquidity**. FX and cash controls are perceived as one of the key barriers to executing cross-border trade and settlement. During the ABMF SF2 survey, many market participants addressed the need for deregulation of such controls to promote cross-border trade and settlement, and the improved availability of local currency (LCY). On the other hand, with changing regulatory demands and collateral landscapes in recent years, demand for cross-border collateral and cross-border repo services has been increasing worldwide, including in ASEAN+3. Under such circumstances, it is recommended that ABMF SF2 further study cross-border collateral and repo from a technological perspective, including current market practices, regulatory aspects, and infrastructures. The study could also include linking CSDs in ASEAN+3 with the intent of utilizing central bank money.

[3] The 10 economies comprise the People's Republic of China (the PRC); Hong Kong, China (Hong Kong, China); Republic of Indonesia (Indonesia); Japan (Japan); Republic of Korea (the Republic of Korea); Malaysia (Malaysia); the Philippines (the Philippines); Singapore (Singapore); (Thailand); and Viet Nam (Viet Nam).

# Suggestions for the Next Phase of ABMF Activities

Considering the above observations and policy recommendations, the following are suggested topics for ABMF SF2 to tackle in its next phase.

(i) **Harmonization of message flows.** Discuss best practices of message flows to identify commonalities and differences, including underlying requirements for critical messages, and propose reference models of message flows where practical.

(ii) **Standardization of messages—migration to international standard.** Adopt ISO 20022 and ISIN as an ASEAN+3 standard to promote cross-border trade and settlement.

(iii) **Harmonization of market practices.** Formulate a plan for the harmonization of market practices wherever it would be effective and possible.
- Specific market practices to be discussed will be chosen from the viewpoint of promoting cross-border STP in ASEAN+3 and considering the costs and benefits of standardization.
- Settlement cycles in line with foreign exchange (FX) spot dates and the time period between the record date and payment date could be candidates to be studied.

(iv) **Study on cross-border collateral and repo services.** Study current market practices, related legal and regulatory aspects, and infrastructures with the goal of identifying best practices and providing policy recommendations for the benefit of further development in cross-border collateral and repo markets.
- The study could include cross-border collateral and repo services linking CSD and RTGS systems.
- Interest payment flows related to cross-border collateral and repo services linking CSD and RTGS systems could also be studied.

**Roadmap and Work Plan.** In relation to the suggested next phase of ABMF activities, ABMF SF2 would like to propose the following Roadmap and Work Plan, subject to approval by Asian Bond Markets Initiative (ABMI) Task Force 3 (TF3) members.

(i) **Phase 3 activities (2014–15).** Provide proposals for the harmonization of ASEAN+3 bond markets, including a
- proposal on a reference model of DVP flows,
- proposal on ISO 20022 adoption of message items,
- proposal on harmonizing market practices wherever possible, and
- proposal on cross-border collateral and repo services.

(ii) **Medium- to long-term (after 2015).** Implement international standards by
- upgrading or redesigning bond market infrastructure in accordance with international standards (e.g., ISO 20022) in some economies,
- progressing in harmonizing market practices such as the settlement cycle, and
- progressing in discussing linkages among the region's bond market infrastructures.

**Submission of the report to ABMI TF3.** ABMF SF2 would like to submit this Phase 2 report to ABMI TF3 as the key findings of SF2. SF2 members expect that the information and data accumulated through ABMF SF2 activities will be utilized as substantial and practical references in pursuing the harmonization of transaction flows and market practices. ABMF SF2 members hope the suggested recommendations in this report can serve as a reference for authorities in the design and implementation of bond market policies.

A list of members and experts, including observers and the ADB Secretariat Team, is presented in Appendix 1.

# Introduction

## Purpose of ASEAN+3 Bond Market Forum

The ASEAN+3 Bond Market Forum (ABMF) was established in September 2010, based on the endorsement of the ASEAN+3 Finance Ministers' Meeting, as a common platform to foster the standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region.[1]

ABMF is expected to discuss various bond market issues to further develop liquid and well-functioning bond markets in order to make cross-border bond investment and settlement both smoother and less expensive; hence, the region's abundant savings can be channeled more effectively to meet the region's increasing investment needs.

ABMF aims to (i) assess existing regulatory frameworks and identify recommendations on how to foster the harmonization of regulations and market practices to facilitate cross-border bond transactions in the region, (ii) enhance dialogue between the private sector and ASEAN+3 officials to develop bond markets in the region and promote harmonization, standardization, and integration; and (iii) provide opportunities to exchange knowledge, expertise, and experience between the region's private and public sectors.

ABMF also took stock of the Group of Experts (GoE) report[2] on Cross-Border Bond Transactions and Settlement Issues.

[1] The Joint Ministerial Statement of the 13th ASEAN+3 Finance Ministers' Meeting on 2 May 2010 in Tashkent, Uzbekistan states: "We [ASEAN+3 Finance Ministers] took note of the Group of Experts' findings and suggestions on facilitating cross-border bond transactions and settlement, and welcomed the establishment of the technical working group on Regional Settlement Intermediary (RSI) to further evaluate the policy recommendations. We endorsed the establishment of ASEAN+3 Bond Market Forum (ABMF) as a common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region."

[2] ASEAN+3 ABMI Task Force 4–Groups of Experts. http://asean3goe.adb.org

# Organizational Structure and Governance

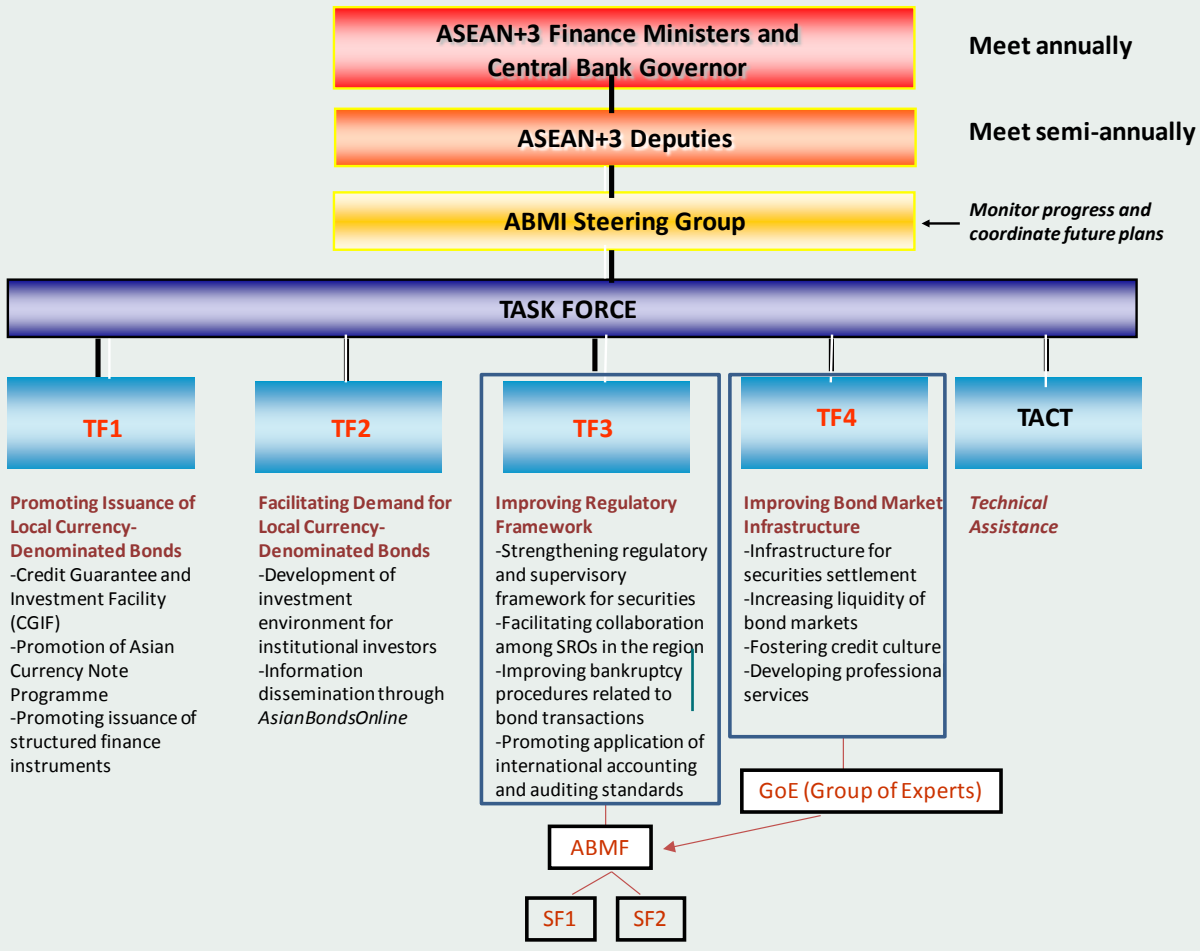
ABMF is organized under Task Force 3 (TF3) of the Asian Bond Markets Initiative (ABMI). ABMF occasionally consults with the co-chairs of TF3 in undertaking regional activities, and reports to TF3 on a regular basis regarding the progress of its activities. The organizational structure of ABMF is shown in **Figure 1.1.**

ABMF consists of two sub-forums: Sub-Forum 1 (SF1) and Sub-Forum 2 (SF2). The objective of SF1 is to close information gaps with respect to regulations, market practices, and other areas in the region's bond markets. SF2 focuses on enhancing straight-through-processing (STP) in ASEAN+3. This report covers activities under SF2.

# Purpose and Position of ABMF Sub-Forum2

The GoE report identified various settlement barriers related to messaging formats, securities numbering, matching, and the settlement cycle. Thus, ABMF SF2 seeks to address these problems to enhance regional STP through the harmonization of transaction procedures and standardization of messages.

**Figure 1.1 Organizational Structure of the ASEAN+3 Bond Market Forum**



It is desirable to execute cross-border transactions without any manual processes or data conversion among market infrastructure in the region. This ideal situation can be realized if all transactions are operated through a system using common standards and consistent messaging. This is not currently possible because individual economies have their own practices and standards, which is inevitable because certain transaction procedures follow unique national requirements. In addition, some segments of a market may prefer ways of handling transactions, which creates differences in transaction procedures and, hence, requires additional conversion to international practices. Furthermore, differences in language remain a significant barrier as some ASEAN+3 economies use their own characters for payment systems and communications. Adopting international standards frameworks such as ISO20022 can mitigate impediments and barriers, which will enhance interoperability in ASEAN+3 bond markets.[3]

Phase1 studies of ABMF SF2 mainly discussed business flows by focusing on government bond transactions, which are larger and relatively simpler than corporate bond transactions. The studies identified and standardized the procedures in trades and settlements, particularly delivery-versus-payment (DVP) of government bonds. In addition, ABMF SF2 discussed other settlement-related barriers such as securities numbering, settlement cycle, and matching to improve settlement procedures. The Phase1 report is posted on ADB's website.[4]

Phase2 studies of ABMF SF2 have built upon the agenda of the GoE report and Phase1 studies of SF2. The GoE report pointed out barriers to promoting STP in ASEAN+3 bond markets. Phase2 studies have covered five barriers that are also discussed in the GoE report: (i) messaging format, (ii) pre-matching, (iii) securities numbering, (iv) settlement cycle, and (v) physical certificate. Moreover, both studies address DVP flows of corporate bonds, government bond flows in BCLM countries,[5] flows of interest and redemption payments, message format and items, market practices, and FX and cash control in the implementation of STP **(Figure 1.2)**.

## Settlement Barriers Based on the Survey on the GoE Report

The GoE report pointed out the barriers to implementing STP in bond markets in ASEAN+3. Settlement-related barriers, including messaging standards, pre-matching, securities numbering, settlement cycle, and physical certificates, are discussed in the succeeding section of this report. The identified barriers to implementation are shown in **Figure 1.3.**

**(i) Messaging standards**

Messaging standards refer to the use (or non-use) of international standards for securities messaging in a local market. International standards, such as ISO20022, are regarded as necessary for enabling STP in securities post-trade processing. Where local proprietary practices are implemented, this revealed the need for interface and translation either at the level of the global custodian or the local custodian. This comes with associated costs of development and maintenance, as well as greater risk of error. In most cases, the local Central Securities Depository (CSD) does not use ISO messaging standards.

**(ii) Trade and settlement matching**

This refers to the matching of trade details between counterparties. Matching may take two forms: trade matching and settlement matching.

**(a) Trade matching.** There are two types of trade matching. Street-side matching is matching between counterparties. On the other hand, customer-side matching is matching between the execution agent (broker) and the order placing firm (investor). For more detail on matching, refer to Appendix 2.

**(b) Settlement matching.** Details of the agreed trade are compared between

[3] The International Standard Organization (ISO) is a worldwide federation of national standards bodies. ISO20022 provides the financial industry with a common platform for the development of messages in a standardized Extensible Markup Language (XML) syntax.

[4] Available at https://wpqr1.adb.org/LotusQuickr/asean3abmf/Main.nsf/h_Toc/3B929170855F3F0E482579D4002E9940/?OpenDocument.

[5] The BCLM countries comprise Brunei Darussalam, Cambodia, Lao People's Democractic Republic (Lao PDR), and Myanmar. Bond markets in these countries are under-developed.

**Figure 1.2 Positions of Phase2 Studies of ABMF Sub-forum 2**

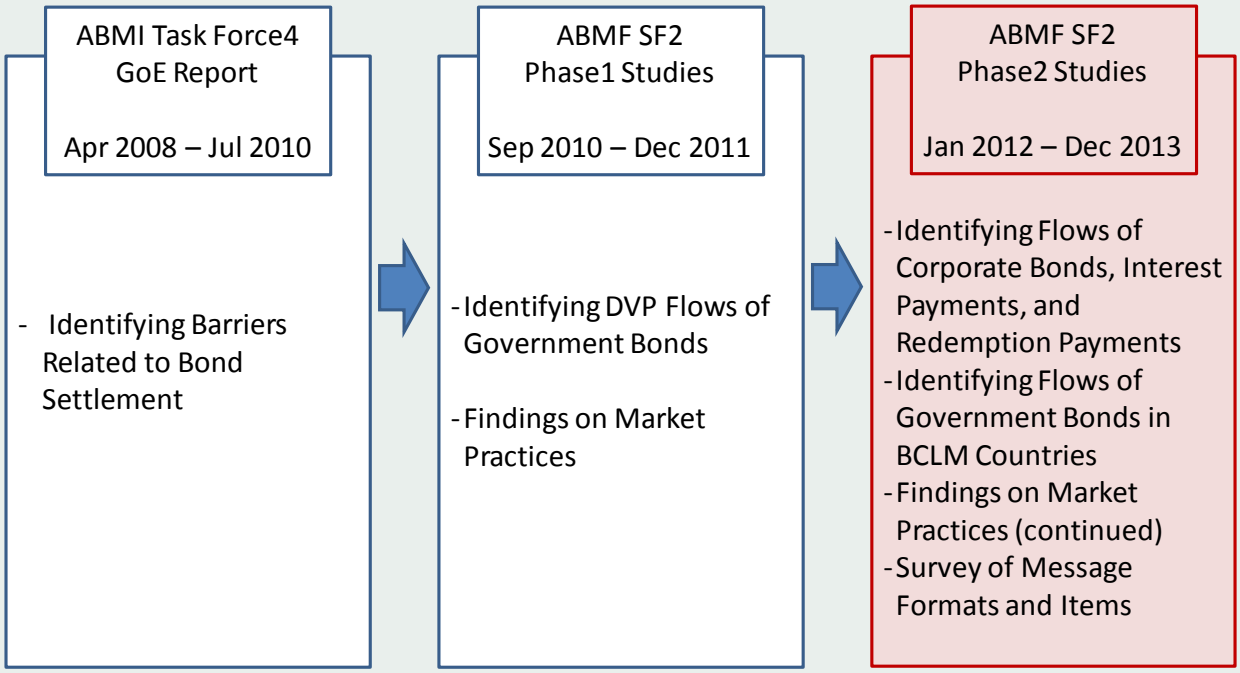
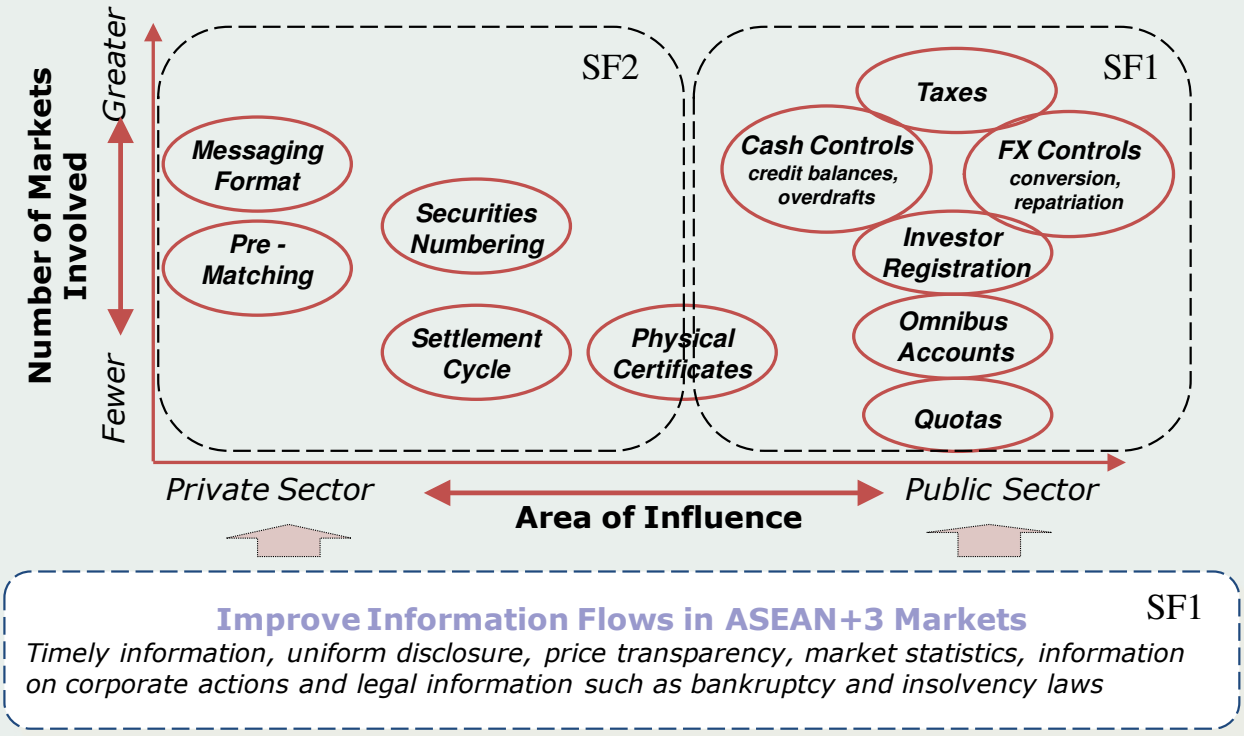



**Figure 1.3 Barriers Focused under ABMF**



the counterparties' settlement agents (e.g., local custodians) to ensure that all information needed for settlement is in place. Prior to bond settlement, counterparties conduct pre-matching in many economies. Pre-matching is a process of comparing settlement instructions between counterparties before irrevocability to reduce settlement failure. Some markets in ASEAN+3 operate a form of automated matching systems for pre-settlement and settlement matching, while others do not. The absence of automated matching is likely to lead to increased settlement failures and make it more difficult to shorten the settlement cycle.

**(iii) Securities numbering**

This refers to the use (or non-use) of an International Securities Identification Number (ISIN) in accordance with ISO6166 for securities numbering in a local market. As with securities messaging, non-use of ISIN makes STP more difficult and increases the risk of error. Most ASEAN+3 markets now have established local agencies for issuing and administering ISIN for locally issued securities. The limitations may include:

(a) ISINs are not available on the issue date of the bond, making trading and settlement more difficult.
(b) ISINs are not widely used by local market participants.
(c) ISINs are not used by local CSDs, instead local securities codes are widely used.

**(iv) Settlement cycle**

This refers to the number of days between the trade date and settlement date. Most markets operate on a standard settlement cycle. Typically this is trade date plus 1 (T+1) for government bonds, and T+2 or T+3 for corporate bonds. A short settlement cycle is better for local market participants, as it reduces counterparty risk. However, non-resident investors may find it difficult to settle on T+1 if they or their global custodian are located in a different time zone. For this reason, such investors look for the ability to negotiate a longer settlement period (T+2 or T+3 is the favored cycle). Settlement cycle as a market rule in the region is yet to be established.

**(v) Physical certificates**

Most bonds today are in dematerialized form held in book-entry at the local securities depository or central bank system. Some bonds are still in paper certificate form. The disadvantage of physical certificates are obvious—the need for manual examination, risk of loss, damage or forgery, and cost of storage. Typically, these remaining physical bonds are not of great interest to cross-border investors, and are unlikely to be traded at all. The ideal situation, clearly, is dematerialization. An intermediate step is to hold physical certificates, where they exist, in vaults of local securities depository for immobilization.

## Outline of Phase1 Studies by ABMF SF2

ABMF SF2 has been discussing the survey results from the viewpoint of enhancing cross-border STP and standardization of messages.

The following are the preliminary conclusions of the Phase 1 studies.

**(i) Robust and sound bond infrastructure.** Each surveyed market has its own robust and sound infrastructure. Operational risks associated with these systems are comparable with those of developed markets.

**(ii) Bonds are listed on exchanges and traded in over-the-counter (OTC) markets.** Bonds are listed on stock exchanges in many markets; however, these are mostly traded over the phone or through other communication tools by negotiation among brokers and dealers. Bond markets in the region are generally OTC markets. This is common elsewhere since bond trading is mainly quote-driven, with brokers and dealers needing to negotiate the price. In contrast, exchange trading is order-driven, where all of the orders of buyers and sellers can be seen and matched by systems.

**(iii) Connection between trade system and CSD.** In some markets in ASEAN+3, trade data are directly transmitted to CSD from the trade system to be used for bond settlement, which is efficient and effective from an STP

perspective. In order to enhance STP in the region, each market is expected to automate and connect systems between the trade system and book-entry system of the CSD.

**(iv) Cross-Border STP.** There are still a comparatively small amount of cross-border bond transactions in the region. Almost all trade data are entered in the CSD within the borders of individual markets. Both trade and book-entry systems are expected to be connected multilaterally to enhance cross-border bond transactions.

**(v) Cross-Border DVP.** In order to enhance cross-border STP in ASEAN+3, increasing the liquidity of government bonds and currencies in the region is essential. From this perspective, ABMF SF2 members and experts are expected to further discuss fit-and-gap analysis of cross-border DVP transactions.

**(vi) Matching.** All markets have matching at a trade or settlement level, and even at both levels in some cases. Some markets have adopted central matching and others local matching. In some markets, both central matching and local matching are used. Also, matching with additional features such as a reduction of input workloads has been implemented. Functions such as input of forward (future-dated) transactions for bond settlement book-entry systems and automated pre-settlement matching systems are expected to be implemented since manual pre-matching through facsimile and/or telephone in the region remains to be the mode of matching.

**(vii) Settlement cycle.** Settlement cycle for local bond transactions in many markets is already realized at T+1, but market practices of cross-border bond transactions depend on each market player, which seem to be more than T+2 and negotiable. As such, there is no standard settlement cycle in ASEAN+3. A settlement cycle, which is a rule for all market participants to observe, is expected though not stipulated in regulation or law.

**(viii) Harmonization of terminologies and definitions.** Terminologies need to be standardized before harmonizing systems and messaging in the region.

**(ix) Institutional framework.** Fostering a mutual relationship among market actors and stakeholders is needed to implement a cross-border bond trade and settlement facility. To this end, there is a need to establish an institutional framework involving authorities and experts in the fields of policy, payment, information technology, and business operations to facilitate efficient communications, especially in emergencies such as system failures and other disasters.

**(x) Reporting facility.** Most markets in ASEAN+3 are developing and improving their facilities for reporting trade data to authorities and self-regulatory organizations (SROs). A data collection scheme will be very important in ASEAN+3 to make markets more sound and transparent. Also, this kind of initiative may be coordinated with the activities of the ASEAN+3 Macroeconomic Research Office (AMRO).

**(xi) Monitoring new issues.** Issues such as new technologies and new standards, including a Legal Entity Identifier, will be monitored to understand market trends and possible breakthrough practices.

## Schedule of Sub-Forum2 during Phase2

ABMF members and experts, with support from the ADB Secretariat and ADB Consultant for ABMF-SF2, have discussed issues of cross-border bond transactions at ABMF meetings, which were held eight times between February 2012 and November 2013, and six times before then. The schedule of SF2 is shown in **Table 1.1**.

**Table 1.1 Schedule of Sub-Forum 2**

| | | Meeting Schedule | Tasks |
|---|---|---|---|
| 2012 | Jan | 7th ABMF SF2 in Hong Kong, China | Preparation of Questionnaire |
| | Feb | | |
| | Mar | 8th ABMF SF2 in Manila, Philippines | Reply to Questionnaire from each Economy |
| | Apr | | |
| | May | | |
| | Jun | Economy Visits (MY, VN, TH, SG, KR, CN, JP, ID, HK, and PH) | Discussion of Bond Markets and Bond Transaction Flows with National and International Experts |
| | Jul | | |
| | Aug | 9th ABMF SF2 in Seoul, Republic of Korea | Drafting Flows related to Corporate Bonds, Interest Payments, and Redemption Payments |
| | Sep | | |
| | Oct | 10th ABMF SF2 in Bangkok, Thailand | Fact Finding on Market Practices and Message Formats and Items |
| | Nov | BCLMV Knowledge Support in Shanghai, PRC | |
| | Dec | | |
| 2013 | Jan | 11th ABMF SF2 in Singapore, Singapore | |
| | Feb | | Preparation for Technical Assistance |
| | Mar | 12th ABMF SF2 in Jakarta, Indonesia | |
| | Apr | Interim Report to Finance Ministers and Central Bank Governors | |
| | May | Technical Assistance in Cambodia | Drafting the Report and Supplement Surveys |
| | | 13th ABMF SF2 in Tokyo, Japan | |
| | Jun | Technical Assistance in Lao, PDR | |
| | Jul | | |
| | Aug | Technical Assistance in Myanmar | |
| | Sep | 14th ABMF SF2 in Jeju, Republic of Korea | |
| | Oct | | Finishing the Report |
| | Nov | | |
| | Dec | | |

# Methodology and Approach of the Survey

## Possible Goals of SF2

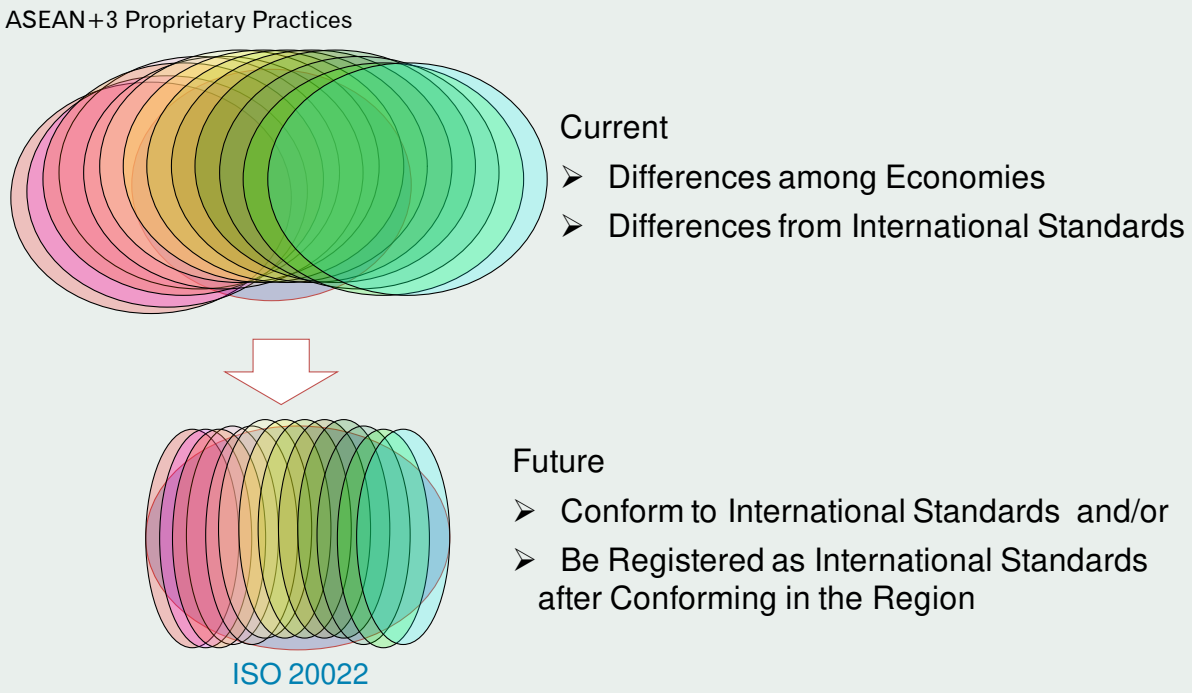
One of the possible goals of ABMF SF2 is to promote STP **(Figure 2.1)**. In order to promote STP, SF2 has clarified the differences among ASEAN+3 economies over DVP and interest payment flows, message items, and market practices. Moreover, SF2 defines typical DVP and interest payment flows for the reference of operators of bond market infrastructure. Another goal is to promote ISO 20022 and related international standards, in particular ISIN and BIC, based on the survey results.

Through the Phase1 and Phase2 studies, SF2 has revealed that each ASEAN+3 economy has its own DVP flows and market practices. Differences in these matters could be a barrier to achieving STP. Not all ASEAN+3 economies have adopted the same rules since they each have unique legal and business requirements. To promote STP, ASEAN+3 economies are expected to adopt the same DVP and interest payment flows to the extent possible as they upgrade their existing bond market infrastructure. If all ASEAN+3 economies were to comply with typical flows as defined by ABMF SF2, the barriers to promoting STP across the region would be reduced significantly.

Concerning message format and items, and numbering and coding, ASEAN+3 proprietary practices (local standards) show differences with international standards, including ISO20022. Also, proprietary practices differ across ASEAN+3 economies and markets.

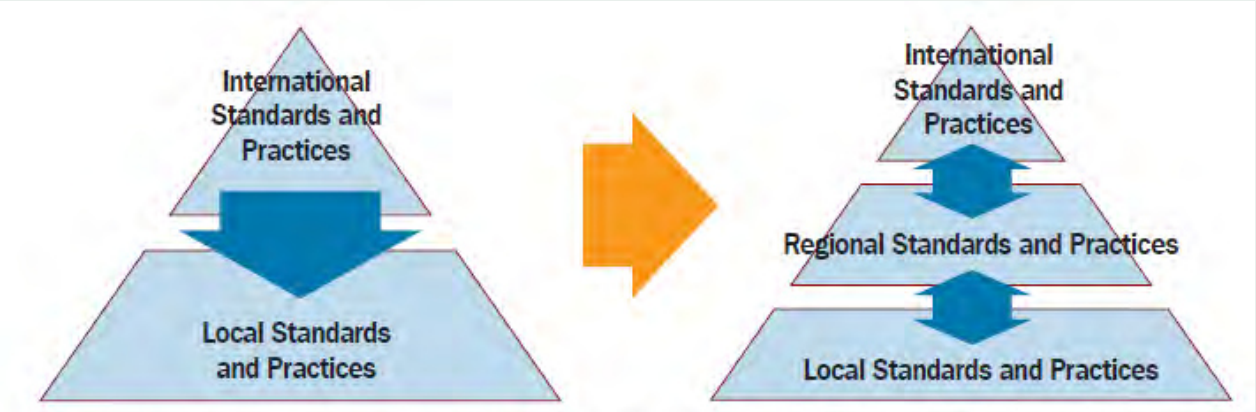
Therefore, the proprietary practices of ASEAN+3 economies should be changed to meet international standards **(Figure 2.1)**. It is important to harmonize practices in the region to make existing differences narrower. International standards such as ISO20022 should form the basis of local standards to make harmonization a reality. Also, practices in ASEAN+3 that have been identified as being on par with international standards should be considered as benchmarks **(Figure 2.2)**.

**Figure 2.1 Possible Goals of Sub-Forum 2**




Note: International standards (e.g., ISO20022) will be the focal point and hub of local standards.

**Figure 2.2 Contribution of ASEAN + 3 to International Standard**




International standards (such as ISO20022) will be the focal point and hub of local standards.

Source: ABMF SF2.

# Methodology Overview

Phase2 activities of ABMF SF2 are divided into six stages as illustrated in **Figure 2.3**.

**(i) Stage A: Fact Finding**

SF2 members agreed on the scope of the fact-finding survey questionnaire. Phase1 activities covered market practices and DVP flows in government bond markets, both for domestic and cross-border transactions. A generic model of cross-border bond transaction flows is shown in **Figure 2.4.**

In Phase2 , SF2 has surveyed DVP flows for corporate bonds, interest and redemption payments, and other market practices. Details of these findings are presented in **Figure 2.5**.

The ADB Consultant drafted the survey questionnaire for ASEAN+3 economies. It was then distributed to national ABMF members and experts for their responses.

The ADB Secretariat and Consultant visited each economy to validate the information and data contained in the survey responses. During such visits, discussions with ABMF experts were held to collect more information.

**(ii) Stage B: Fit and Gap Analysis**

ABMF SF2 conducted two types of fit and gap analysis: (a) gap analysis between proprietary practices and international standards such as message items and ISO20022; and (b) flow analysis between, for example, DVP flows and interest payment flows **(Figure 2.6)**. The outcomes of the fit

**Figure 2.3 Methodology**

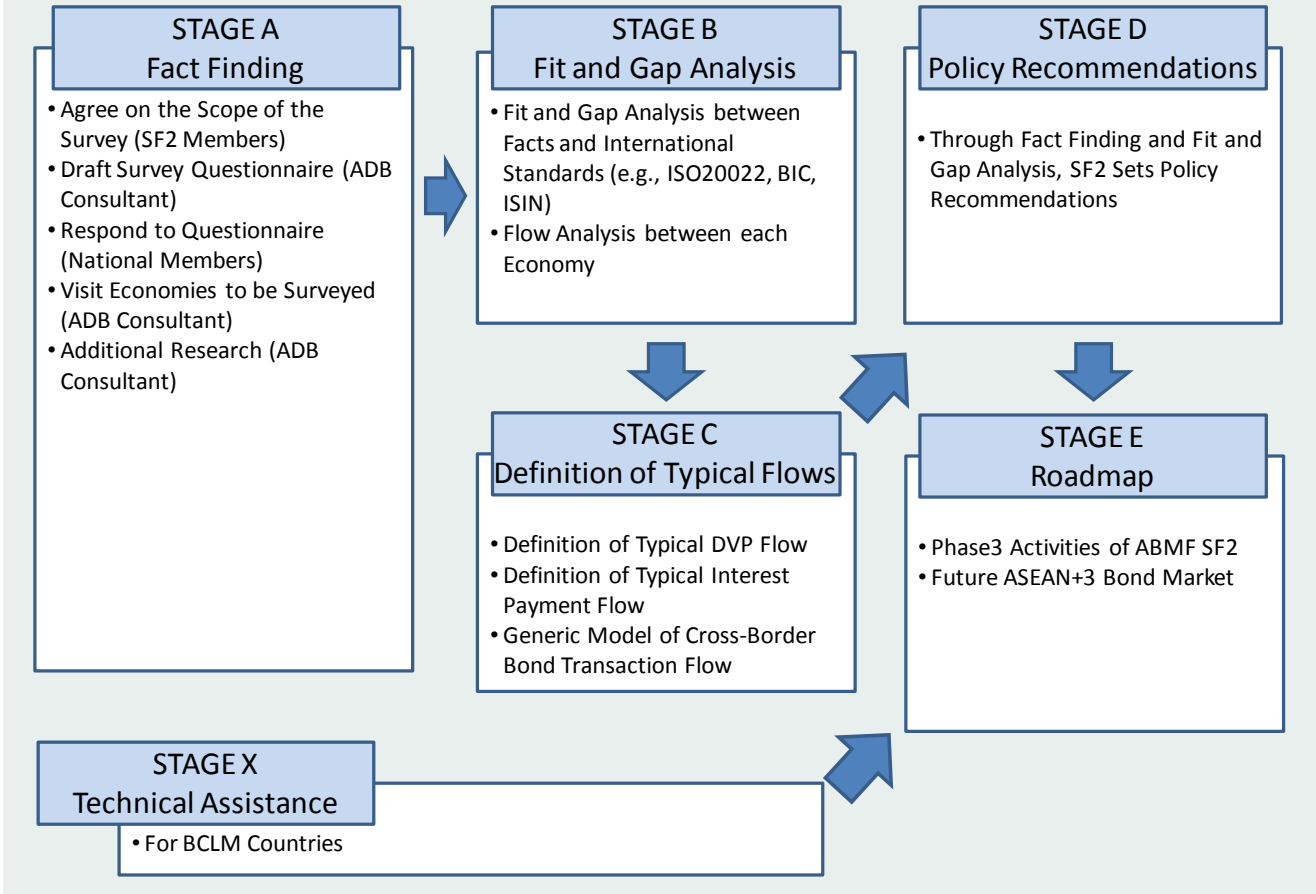
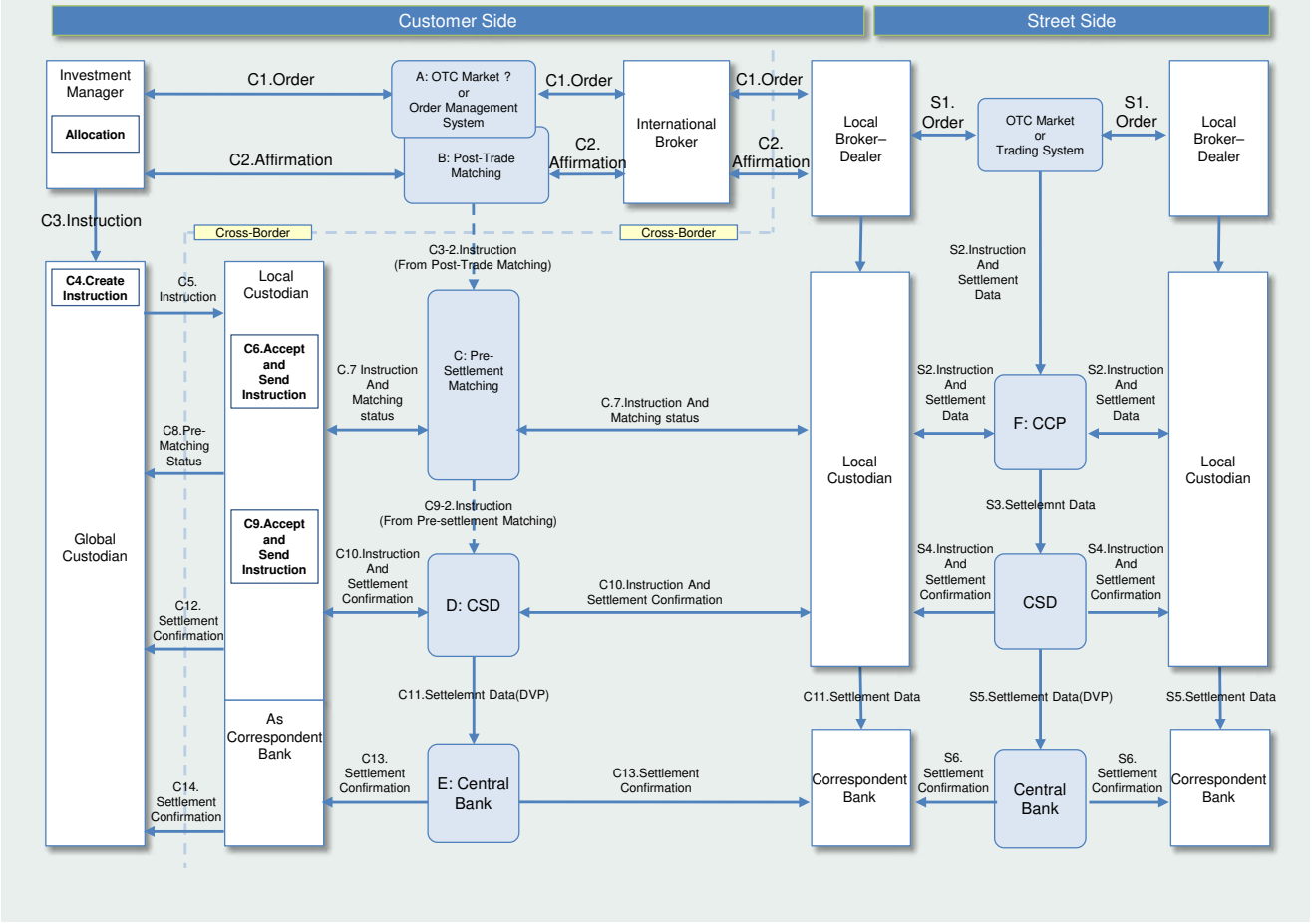


**Figure 2.4 Generic Model of Cross-border Bond Transaction Flow**




and gap analysis were divided into three types : (a) practices already standardized, (b) practices to be kept as status quo, and (c) practices to be standardized.

**(iii) Stage C: Definition of Typical Flows**

There is no international standard for transaction flows. SF2 has defined two types of typical transaction flows: (a) model DVP flow and (b) model interest payment flow.

**(iv) Stage D: Policy Recommendations**

Through the above stages, SF2 sets policy recommendations. Policy recommendations were submitted to ABMI TF3 members and then to the ASEAN+3 Finance Ministers and Central Bank Governors' Meeting in May 2013 as the interim report.

**(v) Stage E: Roadmap**

ABMF SF2 has set out a Roadmap for the future state of ASEAN+3 bond market infrastructures. The roadmap includes Phase3 activities under ABMF SF2.

**(vi) Stage X: Technical Assistance**

The ADB Secretariat and Consultant have sought to share knowledge with BCLM countries for fostering bond and cash settlement infrastructure. In addition, they visited Cambodia, Lao People's Democratic Republic (Lao PDR), and Myanmar to discuss the regulation and operation of bond market infrastructure.

**Figure 2.5 Scope of Fact Findings**

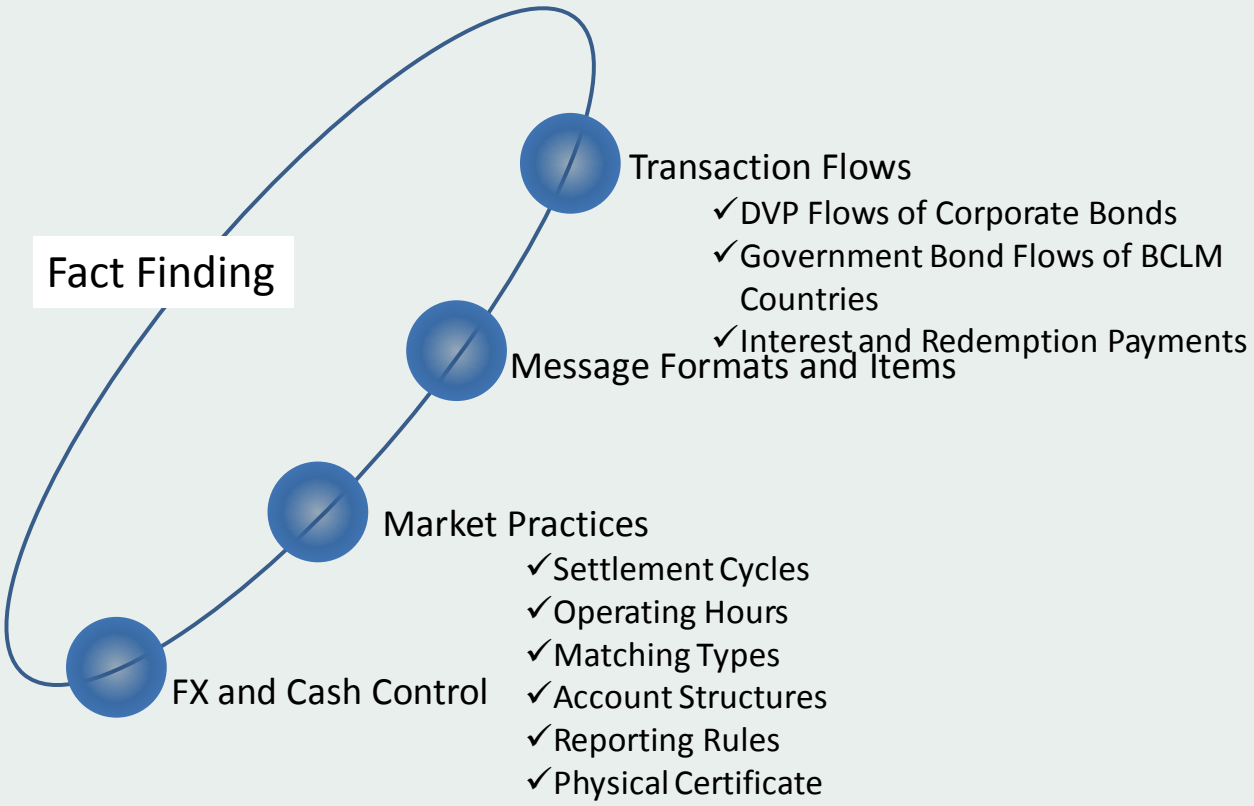
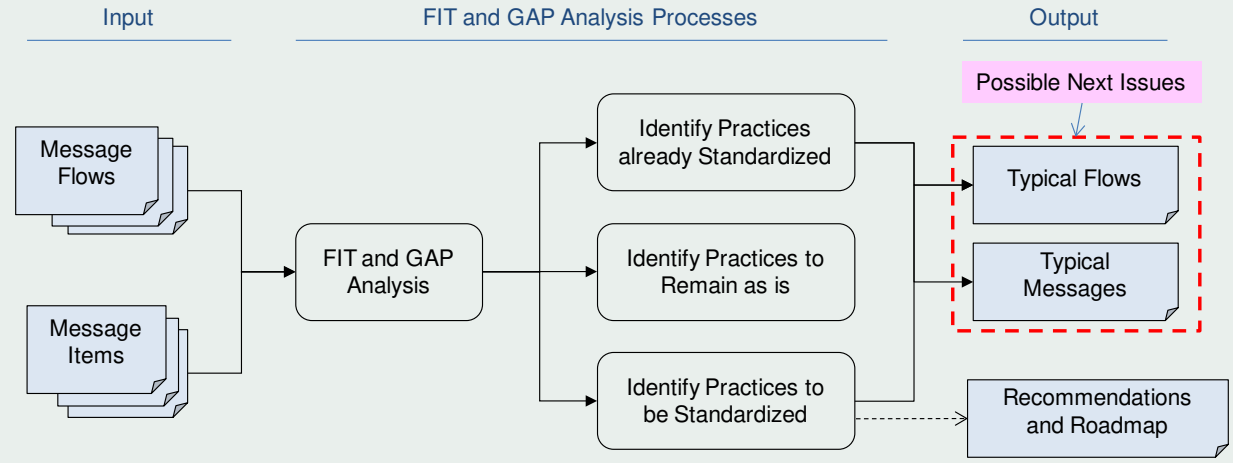



**Figure 2.6 Fit and Gap Analysis and Policy Recommendation**




Note: FIT and GAP analysis of proprietary practices with ISO 20022 is underway to harmonize bond trading and settlement in ASEAN+3.

## Survey Questionnaire

In order to try to reach its goals, ABMF SF2 conducted a survey on the issues related to barriers by sending a questionnaire to national members and international experts. The detailed questionnaire is presented in Part 2 of this report. The following are the primary categories of the questionnaire:

(i) bond market infrastructures,
(ii) DVP flows of corporate bonds in each market,
(iii) interest payment and redemption,

(iv) fit and gap analysis for channels using global custodians to settle cross-border trades,[9]
(v) fit and gap analysis for government bond DVP transactions,
(vi) cross-border transaction flows,
(vii) Roadmap,
(viii) follow-up of Phase1 surveys
(ix) cross-border STP, and
(x) other issues.

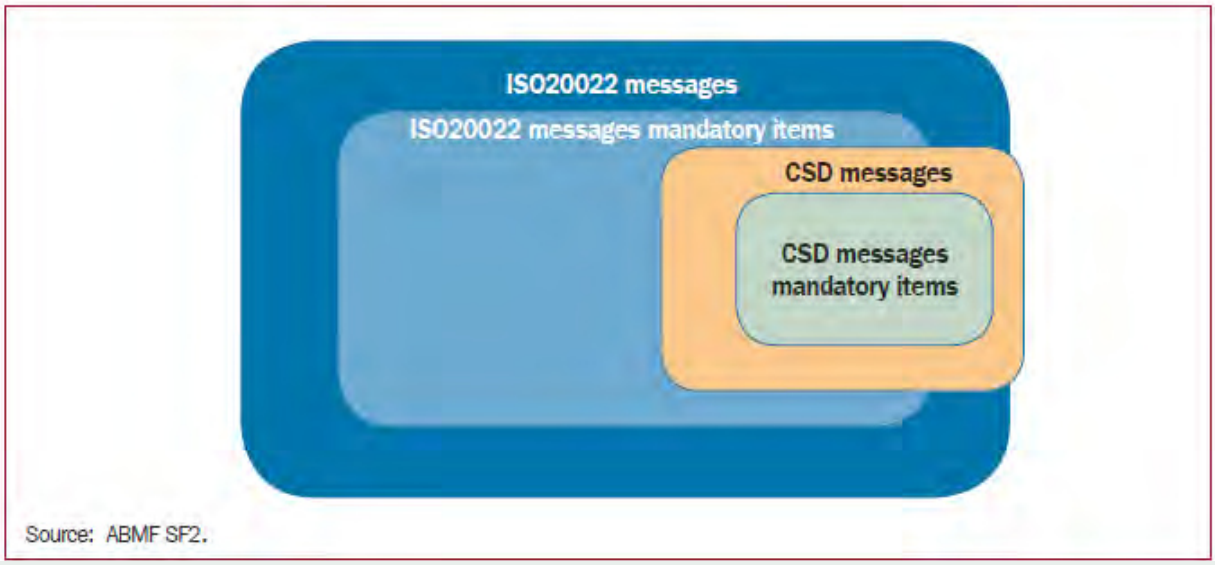
## Fit and Gap Analysis

### Background on Fit-and-Gap Analysis of Bond Transactions

Interoperability among bond trading and settlement systems is key to bringing the goal of regional STP for bond transactions to fruition. In fact, some CSDs in ASEAN+3 have already decided to adopt the ISO standard as their message standard when upgrading their bond settlement infrastructure. However, not all CSDs and bond trade and settlement-related infrastructures are compliant with the international standard yet. Also, there remain some differences among infrastructures in those markets that have already adopted the ISO standard for their message format.

As such, there are some differences in proprietary CSD messages and ISO20022 messages in some markets that do not follow the international standard **(Figure 2.7)**. Therefore, a fit-and-gap analysis between bond transactions of each market and international standards is one of the most important steps toward harmonizing bond markets in ASEAN+3. However, bond trade

**Figure 2.7 ISO 20022 and Central Securities Depository Messages**




Source: ABMF SF2.

[9] The terms "channels using global custodians" means that settlement processes go through both global and local custodians in each economy instead of directly connecting a CSD with an ICSD or other CSDs.

and settlement-related infrastructure, including CSDs that have already implemented the ISO standard as their message standard, may still have their own proprietary flows and processes in economies with a significant domestic bond market and therefore do not need to follow international standards **(Figure 2.8)**.

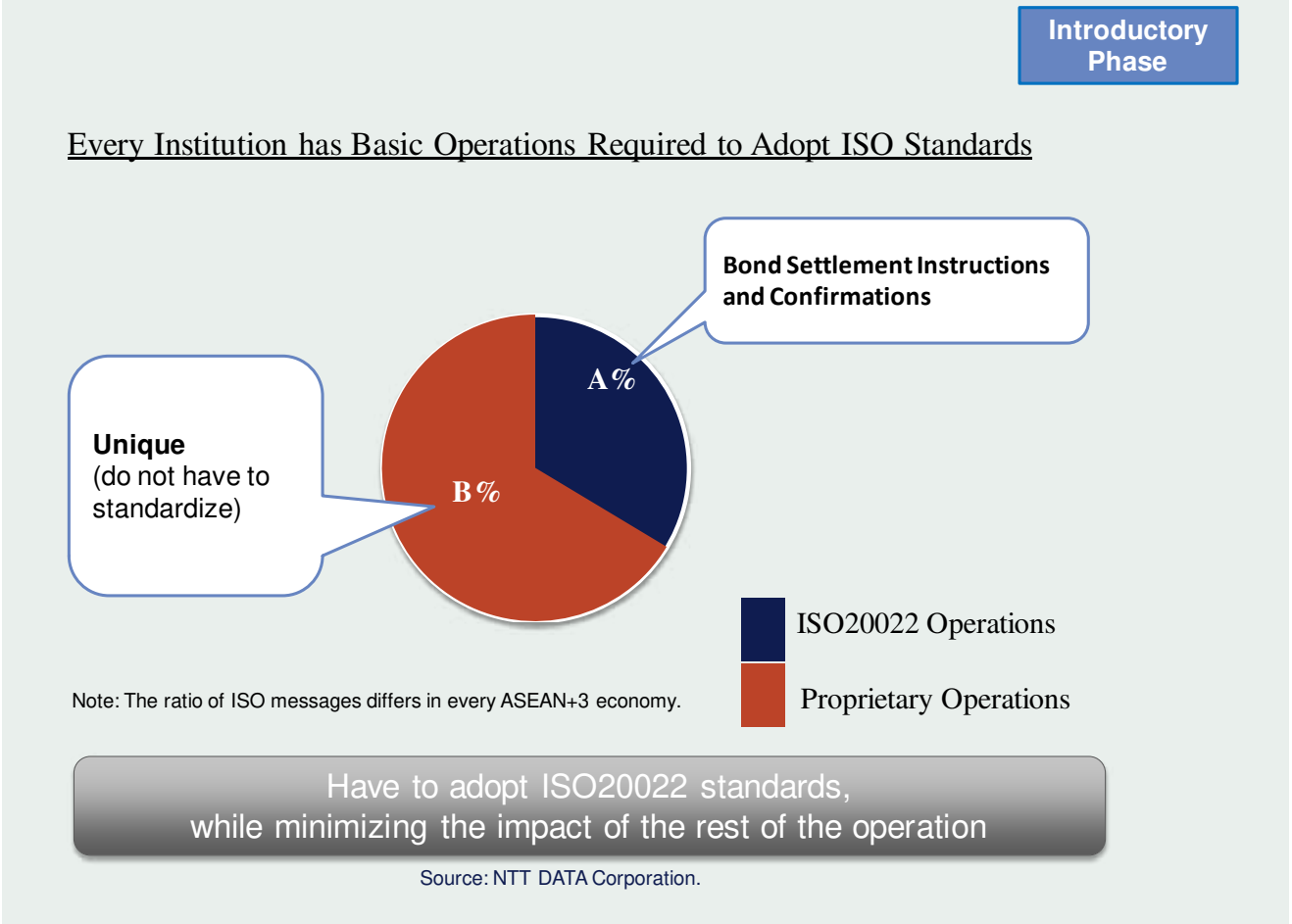
The mapping of ISO20022 with conventional standards is shown in **Figure 2.9**.

### Scope of Fit and Gap Analysis

There are different levels of fit-and-gap analysis for messages. A fundamental level is to check whether the business flow requiring a specific message exists. For fit-and-gap analysis, comparing bond transaction flows is also important. After conducting the basic fit-and gap analysis, message items and formats may be compared and analyzed **(Figure 2.10).**

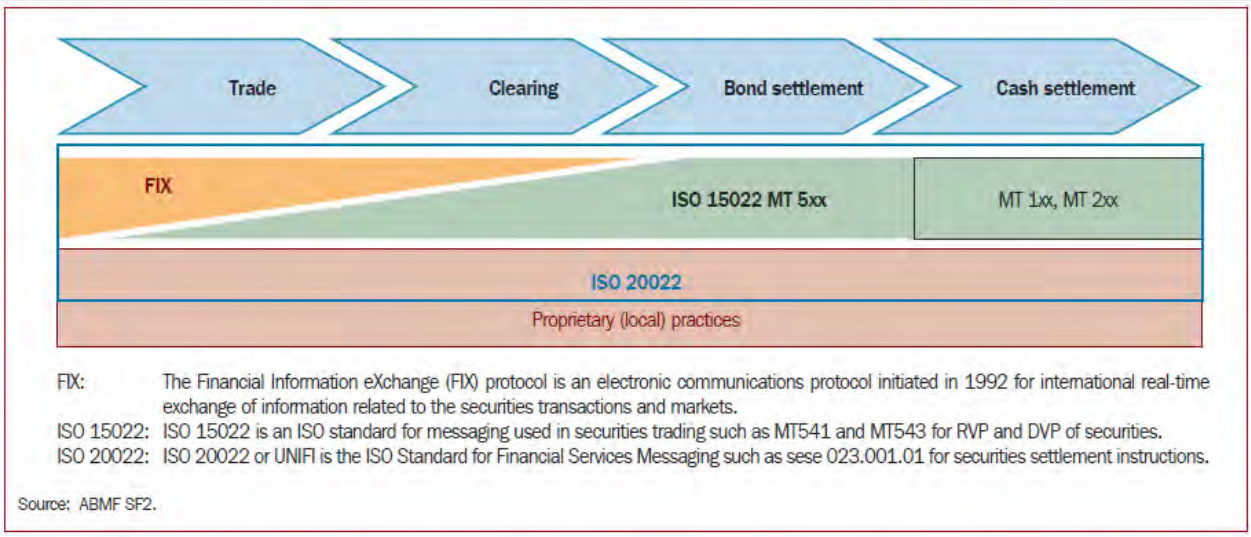
As a preliminary step, a fit-and-gap analysis of messages and their flow was conducted by surveying cross-border and domestic bond transaction flows.

**Figure 2.8 ISO 20022 and Proprietary Practices**




Source: NTT DATA Corporation.

**Figure 2.9 Mapping ISO20022 with Conventional Local Standard**




FIX: The Financial Information eXchange (FIX) protocol is an electronic communications protocol initiated in 1992 for international real-time exchange of information related to the securities transactions and markets.
ISO 15022: ISO 15022 is an ISO standard for messaging used in securities trading such as MT541 and MT543 for RVP and DVP of securities.
ISO 20022: ISO 20022 or UNIFI is the ISO Standard for Financial Services Messaging such as sese 023.001.01 for securities settlement instructions.

Source: ABMF SF2.

**Figure 2.10 Process of Fit and Gap Analysis for Message Items**

| | Step1: Message Level | Step2: Message Item Level | Step3: Item Format Level |
|---|---|---|---|
| **Tasks** | ➢ Collect information on message flow used in each CSD.<br>➢ Compare the message standards and confirm the status of adoption of ISO standard.<br>ISO 20022<br>ISO 15022<br>Proprietary | ➢ Compare the condition of each item (e.g., optional or mandatory).<br>➢ Compare the definition of each item as the item itself may not exist.<br>➢ Discuss the standard condition of each item.<br>➢ Map message items with ISO 20022 | ➢ Collect the detailed format information of each item.<br>➢ Compare the format of each item.<br>➢ Discuss the standard format of each item. (They should be compliant with ISO standards.) |
| **Output** | ➢ Table of Message Standards | ➢ Table of Message Items<br>➢ Summary and Policy Recommendations | ➢ Table of Message Items<br>➢ Summary and Policy Recommendations |

# Findings on Bond Market Infrastructures and Transaction Flows

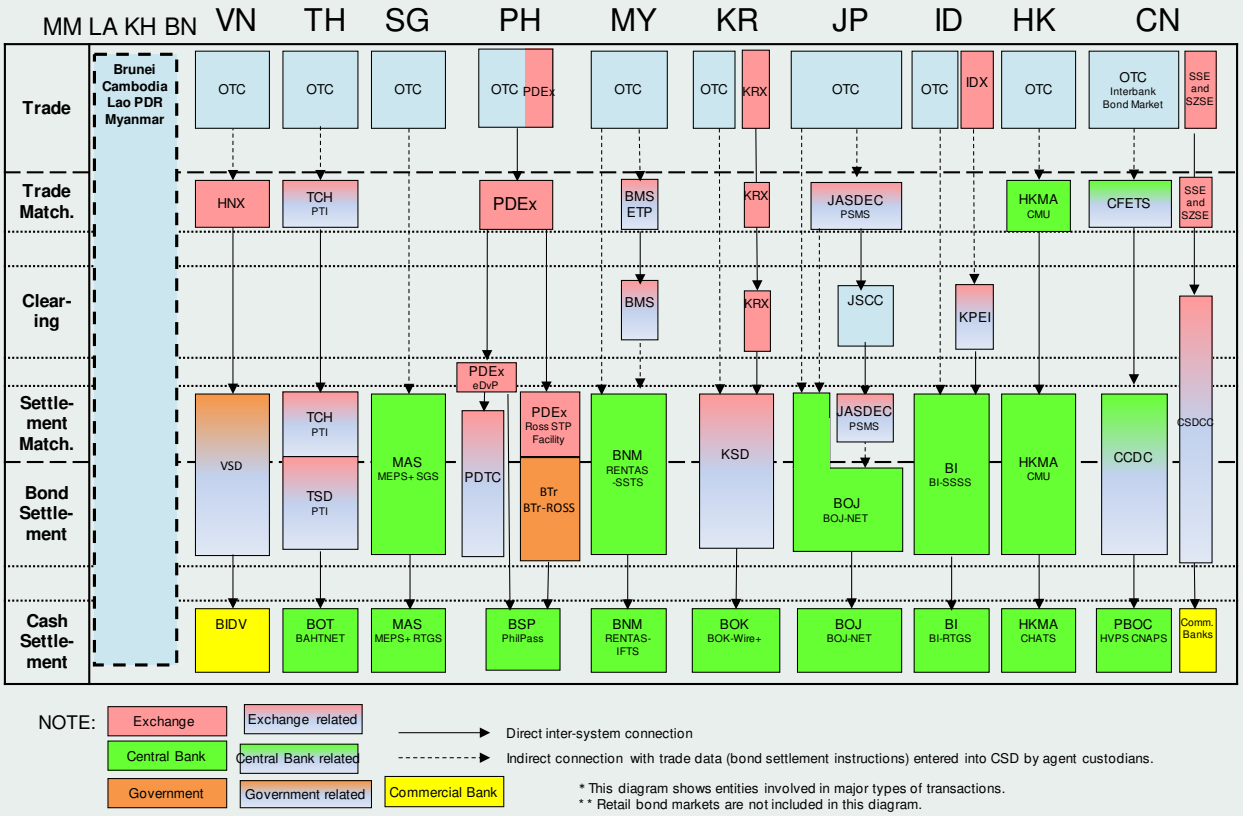
## Introduction

In-depth surveys on bond transaction flows were conducted for 10 of the 14 economies comprising ASEAN+3, including the People's Republic of China (PRC); Hong Kong, China; Indonesia; Japan; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam. Key findings are presented in this section with respect to (i) bond market infrastructures, (ii) DVP flows, (iii) interest payment flows, (iv) message standards, (v) numbering and coding, (vi) market practices and other issues, and (vii) cross-border DVP flows and LCY liquidity.

## Bond Market Infrastructures

Trade and settlement infrastructures in government and corporate bond markets in ASEAN+3 economies are depicted in **Figure 3.1** and **Figure 3.2**, respectively. In general, robust and sound bond market infrastructure such as CSD and RTGS systems are already in place in the 10 surveyed economies. However, infrastructure components that further promote efficiency and risk reduction—including Pre-Settlement Matching System (PSMS), Central Counterparty (CCP), Trade Repository (TR), and Automated Trading System (TS)—have not yet been implemented yet in most economies. Detailed findings of the survey include the following.

**Figure 3.1a ASEAN+3 Government Bond Market Diagram**




**(i) Bond markets**

(a) Where bond markets exist, most bonds (government and corporate) are not traded on exchanges as listed products but rather are traded in OTC markets.

(b) A significant volume of bonds are traded in exchange (order-driven) markets only in the Republic of Korea and the Philippines.

(c) Regarding bond trades, most of the trades are ordered and executed domestically.

**(ii) CCP**

(a) CCP has been established in some economies—including the PRC, Indonesia, Japan, the Republic of Korea, and Malaysia—for bond trades. CCP for the OTC market exists in the PRC (SHCH) and Japan (JSCC). CCPs in the PRC (CSDCC), Indonesia (KPEI), the Republic of Korea (the KRX), and Malaysia (Bursa Malaysia) are for exchange markets.

**(iii) Pre-settlement matching**

(a) Pre-settlement matching is done manually using telephone, facsimile, e-mail, or similar means in most ASEAN+3 economies.

(b) Japan, the Republic of Korea,[10] and the Philippines[11] have implemented automated PSMS for both government and corporate bonds. Singapore has implemented such a system for corporate bonds.

(c) Pre-settlement matching is conducted through forward (future-dated) transactions for both government and corporate bonds in some economies such as the PRC; Hong Kong, China; the Republic of Korea; and Singapore.

[10] Partial PSMS.

[11] Partial PSMS.

## Figure 3.1b ASEAN+3 Government Bond Market Diagram

| | CN | HK | ID | JP | KR | MY | PH | SG | TH | VN |
|---|---|---|---|---|---|---|---|---|---|---|
| Trade | OTC EX | OTC | OTC EX | OTC | OTC EX | OTC | OTC EX | OTC | OTC | OTC |
| Clearing | Y* | N | Y* | Y | Y* | Y* | N | N | N | N |
| Bond Settle-ment | Central Bank-Related CSD ** | Central Bank-Owned CSD | Central Bank-Owned CSD | Central Bank-Owned CSD | Ex-change -Related CSD | Central Bank-Owned CSD | Bureau of Treasury, Ex-change -Related CSD | Central Bank-Owned CSD | Ex-change -Related CSD | Ex-change -Related CSD |
| Cash Settle-ment | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Comm. Bank Money |

EX = exchange, OTC = over-the-counter.

* CCP exists as an exchange function, but transaction volumes and values are small.
** There is an exchange related CSD, but transaction volumes and values are small.

## Figure 3.2a ASEAN+3 Corporate Bond Market Diagram

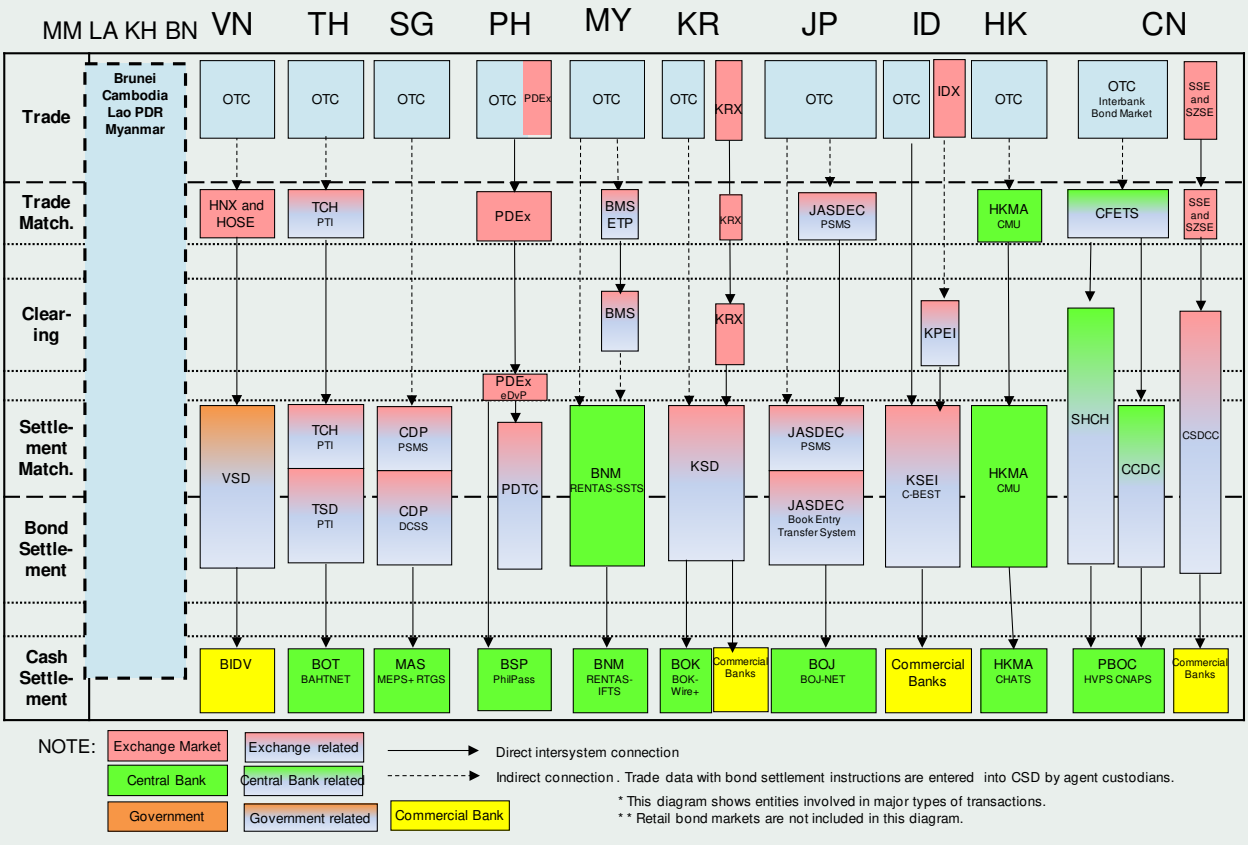


**Figure 3.2b ASEAN+3 Corporate Bond Market Diagram**

| | CN | HK | ID | JP | KR | MY | PH | SG | TH | VN |
|---|---|---|---|---|---|---|---|---|---|---|
| Trade | OTC EX | OTC | OTC EX | OTC | OTC EX | OTC | OTC EX | OTC | OTC | OTC |
| Clearing | Y* | N | Y* | N | Y* | Y* | N | N | N | N |
| Bond Settle-ment | CB-, EX-Related CSD | Central Bank -Owned CSD | EX -Related CSD | EX-Related CSD | EX-Related CSD | Central Bank -Owned CSD | EX-Related CSD | EX-Related CSD | EX-Related CSD | EX-Related CSD |
| Cash Settle-ment | Comm. and Central Bank Money | Central Bank Money | Comm. Bank Money | Central Bank Money | Comm. and Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Central Bank Money | Comm. Bank Money |

EX = exchange, N = No, OTC = over-the-counter, Y = Yes.

* CCP exists as an exchange function, but transaction volumes and values are negligibly small.

**(iv) Bond settlement**

(a) Central bank-related CSDs[10] primarily settle government bonds in six of the 10 ASEAN+3 economies with developed bond markets: the PRC; Hong Kong, China; Indonesia; Japan; Malaysia; and Singapore. Exchange-related CSDs mainly settle government bonds in the Republic of Korea and Thailand. Government-related CSDs settle government bonds in the Philippines and Viet Nam. At the same time, exchange-related CSDs settle a significant portion of government bonds as a sub-registry in Indonesia and the Philippines.

(b) Both central bank-related CSDs and exchange-related CSDs settle corporate bonds in the PRC, and central bank-related CSDs primarily settle them in Hong Kong, China and Malaysia. Exchange-related CSDs mainly settle them in Indonesia, Japan, the Republic of Korea, the Philippines, Singapore, Thailand, and Viet Nam. A significant percentage of bonds remain as physical certificates in all surveyed economies except the PRC and Japan.

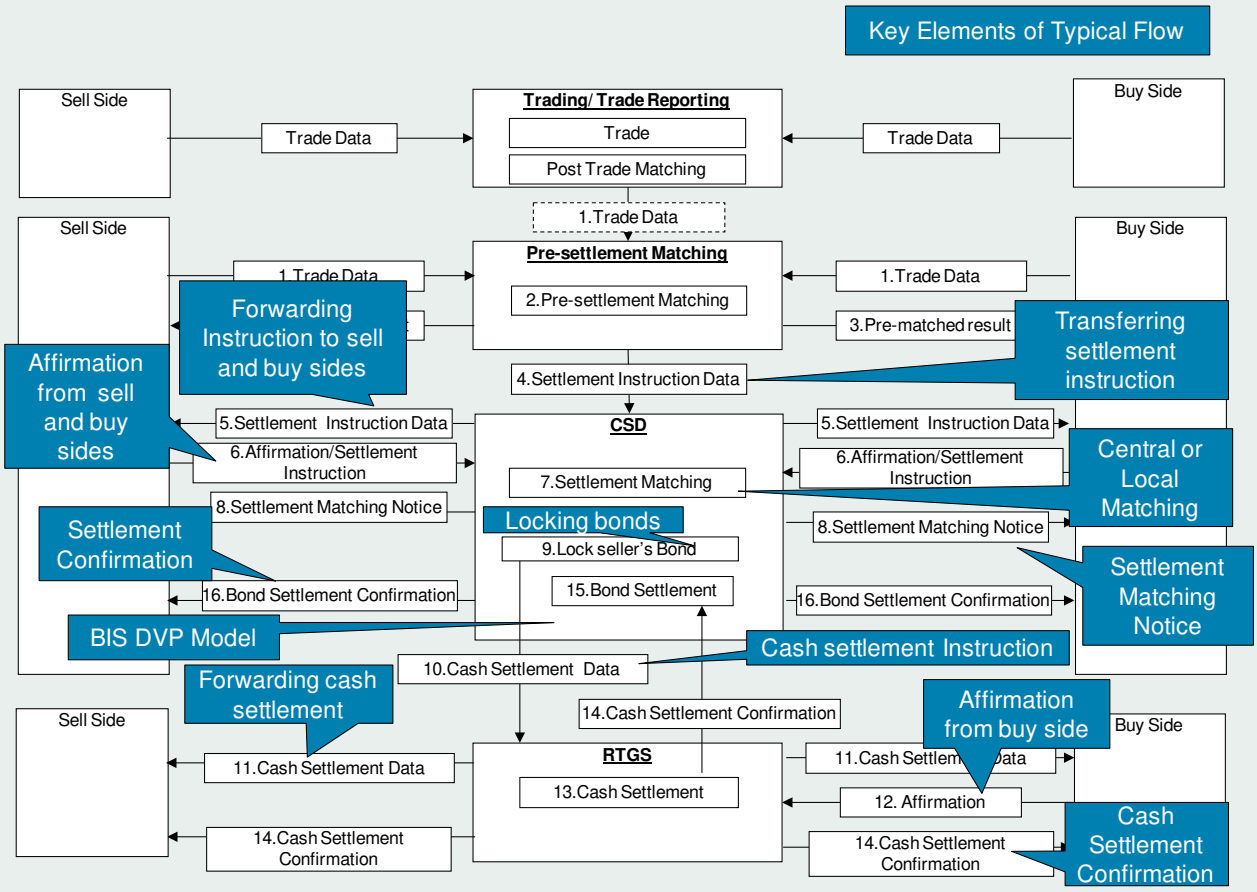
**(v) Cash settlement**

(a) With regard to government bonds, central bank money is used in all surveyed ASEAN+3 economies except Viet Nam. The State Bank of Viet Nam (SBV) is planning to migrate cash settlement from commercial bank money to central bank money. Commercial bank money can also be used in the PRC, though its percentage of total settlement value is very low.

(a) With regard to corporate bonds, central bank money is used in eight of the 10 surveyed economies: the PRC; Hong Kong, China; Japan; the Republic of Korea; Malaysia; Singapore; and Thailand. Commercial bank money is used in the PRC, Indonesia, the Republic of Korea, and Viet Nam. In the PRC, central bank

[10] The word "related" here implies owned, operated, and/or governed depending on the specific structure of each CSD.

**Figure 3.3 A Model DVP Flow (Key Elements)**




money is mainly used, but commercial bank money is also used when bonds are settled in the exchange-related CSD.

# DVP Flows

Fit and gap analysis has been conducted in reference to a selected typical model DVP flow **(Figure 3.3)**. More specifically, messages and the flows—including settlement instruction data, settlement confirmation, cash settlement instruction data, and cash settlement confirmation—were examined.

(i) Settlement instruction data are transferred online from an upstream system such as PSMS or other systems, including TR and TS, to the CSD. In the PRC, the Republic of Korea, Japan,[10] the Philippines, and Viet Nam, each book-entry system receives and/or can receive settlement instructions or trade data (online) from other systems for both government and corporate bonds. In other economies, the sell side and/or the buy side enter the data.

(ii) In cases when settlement instruction data are transferred from an upstream system to the CSD, the data are forwarded from the CSD to the sell side and buy side for affirmation. CSDs in the PRC, Japan, and the Philippines

[10] This connection will start operation when the new BOJ-NET is connected with PSMS.

forward the data to the sell side and buy side for both government and corporate bonds.

(iii) In cases where settlement instruction data are forwarded from the CSD to the sell side and buy side, both sides affirm the data. In the PRC, Japan, and the Philippines, the data are affirmed and sent back to the CSD for both government and corporate bonds.

(iv) Central matching and local matching are used as settlement matching for both government and corporate bonds. In Hong Kong, China; Indonesia; the Republic of Korea; Thailand; and Viet Nam; central matching is adopted for both government and corporate bonds. In Malaysia, local matching is adopted for both government and corporate bonds. In the PRC, the Philippines,[10] and Singapore, both types of matching are adopted for both government and corporate bonds. In Japan, local matching is adopted for government bonds and central matching is adopted for corporate bonds.

(v) All CSDs adopting central matching send a matching notice to the sell side and buy side. The CSDs adopting local matching functionally do not have such a notice.

(vi) Settlement confirmation is sent from the CSD to the sell side and buy side. CSDs send settlement confirmation in all surveyed economies, except the Philippines[11] and Viet Nam, for both government and corporate bonds.

(vii) The definitions and ownership of locked, earmarked, or blocked seller's bonds may vary from CSD to CSD. A follow-up survey will be necessary to clarify the use of such definitions.

(viii) The Bank for International Settlements (BIS) DVP Model 1 has been adopted with respect to OTC markets by all surveyed economies except Viet Nam for government bonds, and all except Singapore and Viet Nam for corporate bonds.[12] There are three BIS DVP models in the region:

- Model 1 has been adopted in the PRC (OTC); Hong Kong, China (OTC); Indonesia; Japan; the Republic of Korea (OTC); Malaysia; the Philippines; Singapore; and Thailand for government bonds; and in the PRC (OTC); Hong Kong, China (OTC); Indonesia; Japan; the Republic of Korea (OTC); Malaysia; the Philippines; and Thailand for corporate bonds.
- Model 2 has been adopted in the PRC (EX) for government bonds and in the PRC (EX) and Singapore for corporate bonds.
- Model 3 has been adopted in Hong Kong, China (OTC);[13] the Republic of Korea (EX); and Viet Nam for both government and corporate bonds.

(ix) Cash settlement instruction data are transferred online or directly to RTGS in all economies. In Japan[14] and Malaysia, CSD and RTGS systems are running on the same platform.

(x) Cash settlement instruction data are not forwarded from an RTGS system to the sell side and/or buy side after receiving the data from the CSD except in Japan and the Republic of Korea.

(xi) In cases when cash settlement instruction data are forwarded to the buy side, the data need to be affirmed. Only in the Republic of Korea do the sell side and buy side affirm the data for both government and corporate bonds.

[10] This only applies to free of payment (FOP). In the Philippines, central matching is mandatory for trades received from PDEx for both government and corporate bonds. But for FOP trades, the parties decide whether to use local or central matching.

[11] In the Philippines, settlement is notified to the counterparties via a change in the trade status, which parties can view online. Reports on settled trades can also be generated and printed from the settlement system.

[12] BIS DVP models are defined as follows: Model 1 are systems that settle transfer instructions for both bond and funds on a trade-by-trade (gross) basis, with final (unconditional) transfer of bonds from the seller to the buyer (delivery) occurring at the same time as final transfer of funds from the buyer to the seller (payment); Model 2 are systems that settle bond transfer instructions on a gross basis, with final transfer of bond from the seller to the buyer (delivery) occurring throughout the processing cycle, but settled funds are transfered on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle; Model 3 systems settle transfer instructions for both bonds and funds on a net basis, with final transfers of both bonds and funds occurring at the end of the processing cycle.

[13] In Hong Kong, China, about 10% of transactions are settled by BIS DVP Model 1 and the rest are settled by BIS DVP Model 3.

[14] This applies only to government bonds

(xii) Cash settlement confirmation is sent from an RTGS system to the sell side and buy side in almost all economies. In Malaysia and Viet Nam, the RTGS system does not send cash settlement confirmation for both government and corporate bonds. In Malaysia, the bond settlement confirmation and cash settlement confirmation are processed in the same message. In Viet Nam, there is no cash settlement confirmation.

# Interest Payment Flows

Typical interest payment flows, as well as the roles of the related entities such as the Paying Agent (PA), CSD, and Tax Withholding Agent (TWA), are shown in **Figure 3.4**. In general, interest payment flows differ in each economy, and the role of the related entities also differs.

(i) Regarding government bonds, central banks are the PA of the issuer (e.g., Ministry of Finance) for interest payment and redemption in seven out of the 10 ASEAN+3 economies with developed bond markets: Hong Kong, China; Indonesia; Japan; the Republic of Korea; Malaysia; Singapore; and Thailand. CSDs are the PA in the PRC and Viet Nam. The Bureau of the Treasury (BTr) is the PA in the Philippines. As for corporate bonds, commercial banks are the PA of issuers for interest payment and redemption in Hong Kong, China; Japan; the Republic of Korea; Malaysia; the Philippines; Singapore; and Thailand. CSDs are the PA in the PRC, Indonesia, and Viet Nam.

(ii) Account Management Agents (AMAs) of bond holders (investors) for interest payment and redemption are CSD participants (mainly custodians) for both government and corporate bonds. Commercial banks (custodians) manage accounts to receive interest payment and redemption from PAs on behalf of investors.

(iii) With regard to government bonds, no withholding tax (WHT) is imposed in the PRC; Hong Kong, China; Malaysia; and Viet Nam. In Japan and Singapore, only non-residents are exempt from WHT. With regard to corporate bonds, no WHT is imposed in Hong Kong, China and Malaysia. No WHT is imposed on non-residents in Japan and Singapore.[10] TWAs for interest payment and redemption differ in each of the remaining surveyed economies.

**Table 3.1** and **Table 3.2** present summaries of the findings on interest payment and redemption entities for government and corporate bonds, respectively.

# Message Standards

## Message Formats

A proprietary format is one of the critical factors of settlement barriers. Meanwhile, ISO15022 has replaced the proprietary formats of some ASEAN+3 economies. ISO15022 is the ISO standard for messaging used in securities trading. ISO15022 sets the principles necessary to provide the different communities of users with the tools to design message types to support their specific information flows. These tools consist of a set of syntax and message design rules, a dictionary of data fields, and a catalogue for present and future messages created by the industry with the above mentioned fields and rules.

ISO20022 is currently being discussed in ASEAN+3 economies broadly as a replacement for ISO15022. The ISO20022 standard provides the financial industry with a common platform for the development of standardized messages by using

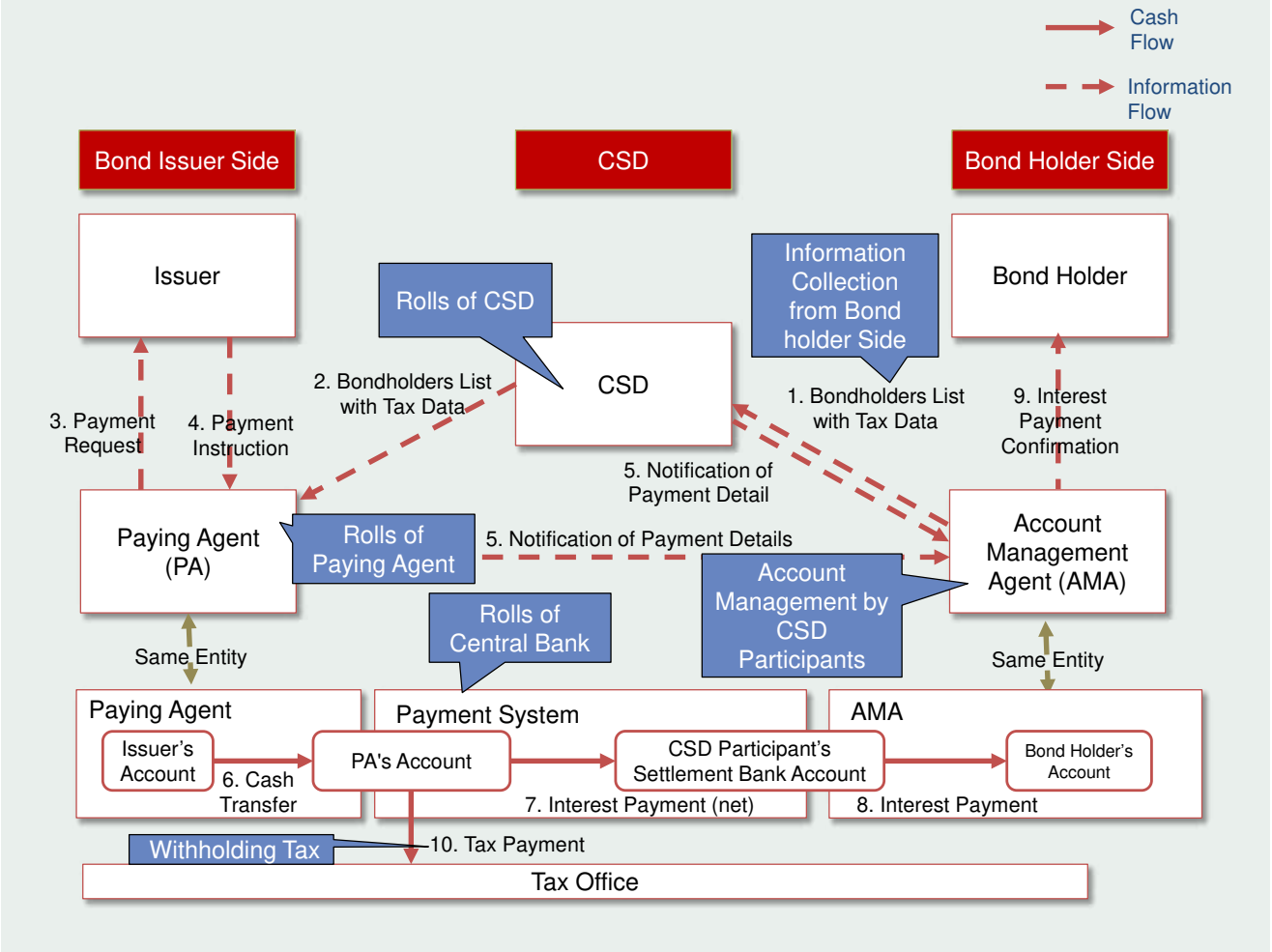
(i) a modeling methodology (based on UML) to capture in a syntax-independent way financial business areas, business transactions, and associated message flows;

(ii) a set of design rules to convert the messages into schemas; and

(iii) a predominant syntax that is flexible and modern (currently XML).

[10] Identifying an investor based on whether he is a resident or non-resident is an issue that could influence the WHT payment process.

**Figure 3.4 Interest Payment Flow (Key Elements)**




Existing global trends in the adoption of ISO20022 are presented in **Figure 3.5** and **Figure 3.6**.

Bond settlement-related message (ISO20022, ISO15022, or proprietary format) of individual CSDs were surveyed and the results are presented in **Table 3.3**. Highlights include:

(i) China Central Depository and Clearing (CCDC) and Shanghai Clearing House (SHCH) in the PRC, the Indonesian Central Securities Depository (KSEI) in Indonesia, and the Bank of Japan (BOJ) and the Japan Securities Depository Center (JASDEC) in Japan have adopted or will adopt ISO20022 for their message formats.

(ii) Hong Kong Monetary Authority (HKMA) in Hong Kong, China, the Monetary Authority of Singapore (MAS) in Singapore, and the Thailand Securities Depository (TSD) in Thailand have adopted or will adopt ISO15022.

(iii) CSDs in the Republic of Korea, Malaysia, the Philippines, and Viet Nam use proprietary formats.

## Message Items

Typical message items of a settlement instruction and a settlement confirmation are compared with those of ISO20022 in order to study differences among ASEAN+3 economies. An image of the mapping of message items to ISO20022 is shown in **Table 3.4**.

**Table 3.1:Government Bond Interest Payment-Related Entities**

| | PA of Issuer | CSD | Payment System | TWA Resident | TWA Non-Res. |
|---|---|---|---|---|---|
| CN | CCDC<br>CCDC | CCDC<br>CSDCC | CNAPS<br>Commercial Bank | None<br>None | None<br>None |
| HK | HKMA | HKMA | CHATS | None | None |
| ID | BI | BI | BI-RTGS | CSD Participant | CSD Participant |
| JP | BOJ | BOJ | BOJ-Net | BOJ or CSD participant | None |
| KR | BOK | KSD | BOK-Wire+ | KSD | CSD Participant |
| MY | BNM | BNM | RENTAS-IFTS | None | None |
| PH | BTr | BTr | PhilPaSS | BTr | BTr |
| SG | MAS | MAS | MEPS+ | CSD Participant | None |
| TH | BOT | TSD | BAHTNET | BOT | BOT |
| VN | VSD | VSD | BIDV System | None | None |

PA = paying agent, TWA = tax withholding agent.
Notes:
1. CSD participant includes a corresponding bank, which has an account in the payment system, designated by a bond holder.
2. BOJ and CSD participant are withholding agents for national and local taxes, respectively, in Japan .

Typical message items of DVP flows—such as (i) instruction identification, (ii) trade date, (iii) settlement date, and (iv) place of settlement—were chosen based on 10 common elements proposed by Securities Market Practice Group (SMPG) **(Table 3.5)** and are compared with that of ISO20022 **(Table 3.6)**.

(i) In ISO15022 and ISO20022, Instruction Identification refers to the sender's message reference, but there are some exceptions. For instance, in the Philippines, the TS of the Philippine Dealing and Exchange Corporation (PDEx) assigns unique numbers as Instruction Identification to individual transactions. Also, in Japan, the CSD system for government bonds (BOJ-NET) assigns unique numbers, known as *Torihiki*-Number, as Instruction Identification to individual transactions. (The new BOJ-NET will adopt a new "*Torihiki* Identification" in accordance with ISO standards.) The message reference number is essential (mandatory) to identify individual messages.

(ii) Some CSDs—such as KSD, MAS, BTr, PDTC, TSD, and VSD—specify the Trade Date as mandatory. In contrast, BOJ does not regard the Trade Date even as an input item. Trade Date is not necessary for settlement, but is necessary to acquire details of a transaction and tax-related information.

(iii) Settlement Date is mandatory for all CSDs. VSD calculates the settlement date within their system on the basis of Trade Date instead of entering it as an input item.[10]

[10] The definition of Trade Date in Viet Nam is the trade data capturing date.

**Table 3.2: Corporate Bond Interest Payment-Related Entities**

| | PA of Issuer | CSD | Payment System | TWA Resident | TWA Non-Res. |
|---|---|---|---|---|---|
| CN | CSDCC<br>SHCH<br>CCDC | CSDCC<br>SHCH<br>CCDC | Comm. Bank System<br>CNAPS<br>CNAPS or Commercial Bank System | CSDCC<br>Bond Holder<br>Bond Holder | CSDCC<br>Bond Holder<br>Bond Holder |
| HK | Commercial Bank | HKMA | CHATS | None | None |
| ID | KSEI | KSEI | KSEI's Bank System | KSEI | KSEI |
| JP | Commercial Bank | JASDEC | BOJ-Net | PA/CSD partic. | None |
| KR | Commercial Bank | KSD | BOK-Wire+<br>Com. Bank system | KSD | CSD partic. |
| MY | Commercial Bank | BNM | RENTAS-IFTS | None | None |
| PH | Commercial Bank | PDTC | PhilPaSS | Issuer | Issuer |
| SG | Commercial Bank | CDP | MEPS+ | CSD Participant | None |
| TH | Commercial Bank | TSD | BAHTNET | Commercial Bank | Commercial Bank |
| VN | VSD | VSD | BIDV System | Issuer | Issuer |

PA = paying agent, TWA = tax withholding agent.
Notes:
1. CSD participant includes a corresponding bank, which has an account in the payment system, designated by a bond holder.
2. PA and CSD participant are withholding agents for national and local taxes, respectively, in Japan .

(iv) Place of Settlement (PSET) is mandatory for PDEx, MAS, and TSD, but not for BOJ, KSD, and VSD. PSET is not required in cases when participants of a CSD can access only the specific CSD. But, PSET may be necessary from a cross-border STP perspective.

# Numbering and Coding

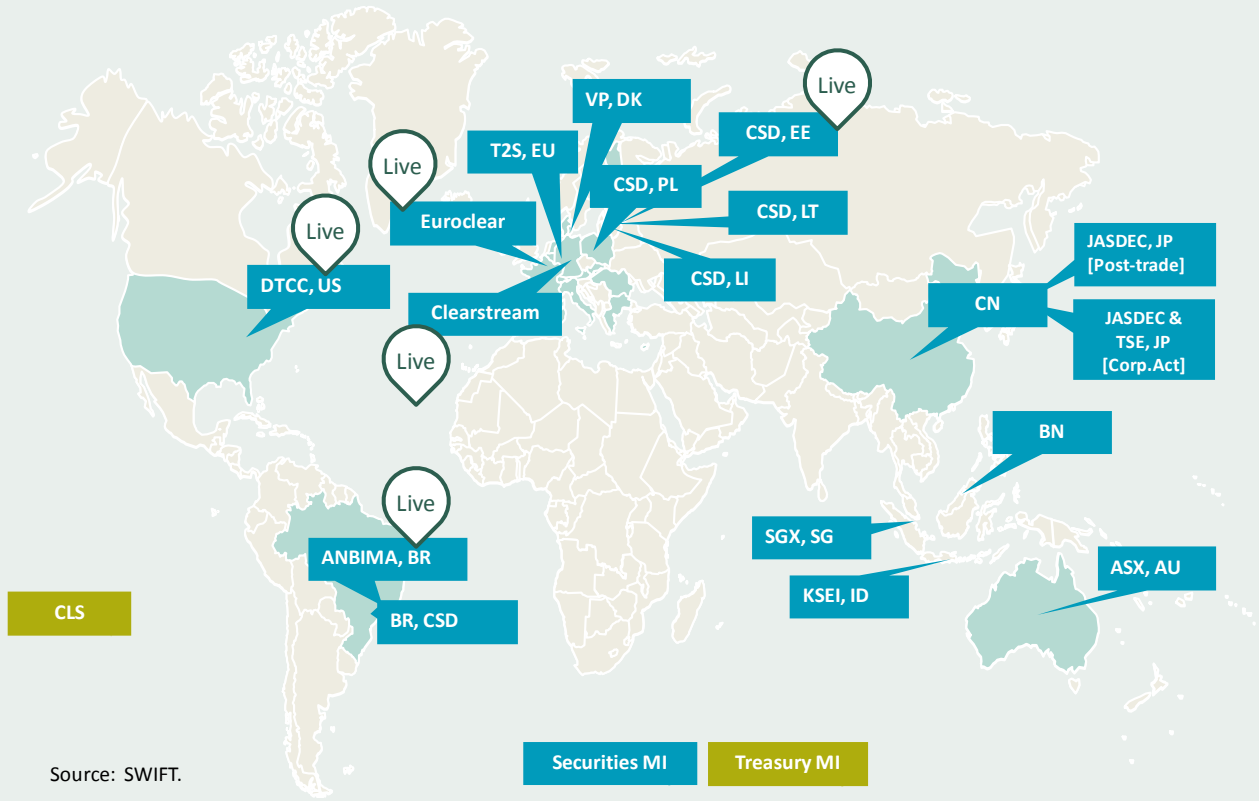
It is important to standardize numbering and coding to promote STP of bond settlement. Numbering and codes related to bond transaction flows are (i) financial instrument identification (ISIN), (ii) party identification (BIC), (iii) safekeeping account, and (iv) language and character code set **(Figure 3.7)**. Numbering and coding as practiced in ASEAN+3 economies is presented in **Table 3.7**.

## International Securities Identification Number (ISIN)

One of the most important aspects of numbering in bond settlement is the International Securities Identification Number (ISIN).

ISIN, as defined in ISO6166, uniquely identifies securities such as bonds. ISIN is a 12-character alpha-numerical system that does not contain information characterizing financial instruments, but serves for uniform identification of securities at trading and settlement. **Figure 3.8** illustrates the ISIN code structure of Japanese government bonds. Conversion is also possible between proprietary numbering and ISIN.

**Figure 3.5 ISO20022 Current world trend – Securities MI & Treasury MI**




Source: SWIFT.

ISIN is not actually used yet in many economies for securities numbering. Also, numbering conventions and some other practices such as the allocation of numbers and use of ISIN are not standardized yet. Japan and Thailand will adopt or have adopted ISIN as securities numbering. Hong Kong, China; Indonesia; the Republic of Korea; Singapore; and Viet Nam partly use ISIN (mainly proprietary numbering). ISIN and proprietary numbering do not match uniquely in Hong Kong, China. Proprietary numbering is used in other economies.

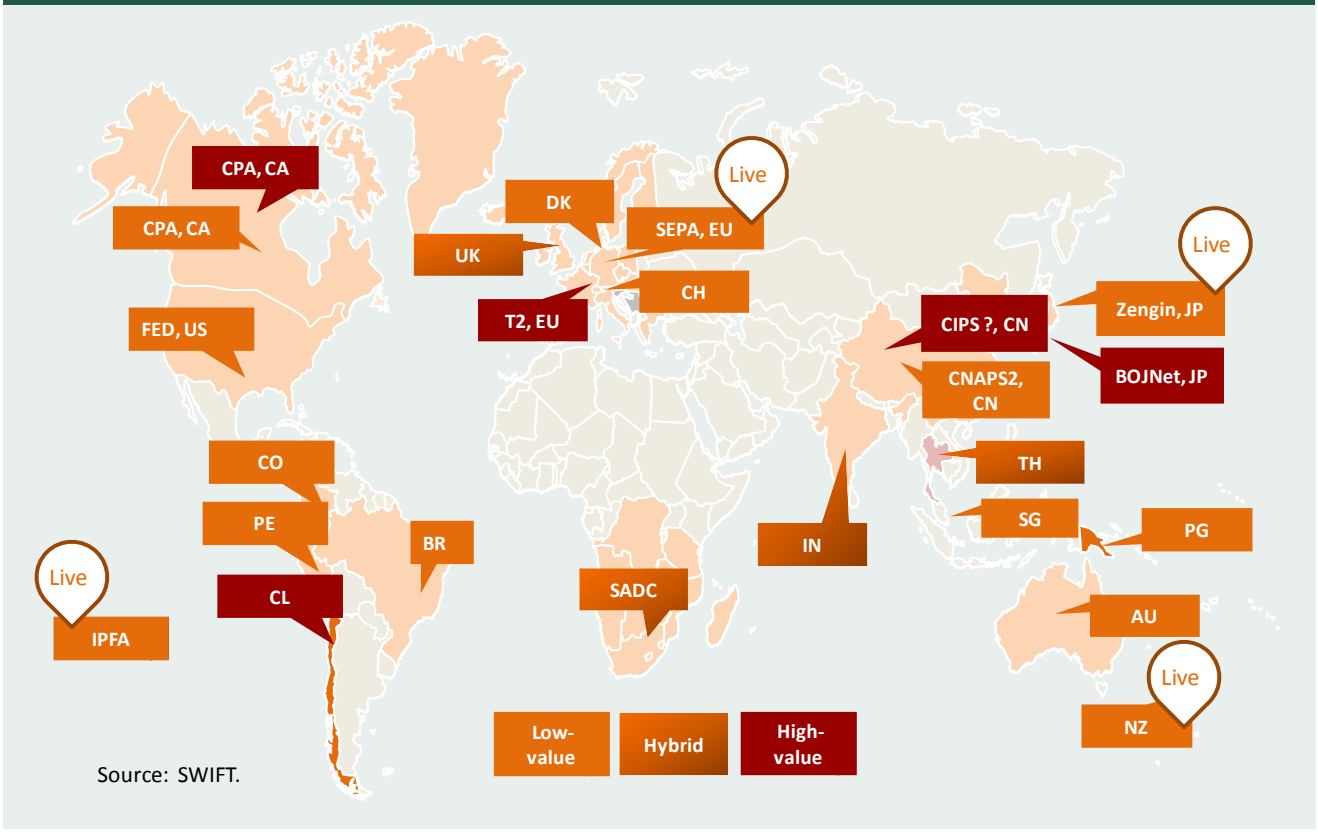
All ASEAN+3 economies that have bond markets are full members of the Association of National Numbering Agencies (ANNA). ANNA and national numbering agencies (NNAs) allocate ISINs in accordance with ISO6166. The ANNA recommendations state that NNAs should allocate ISINs within 24 hours following the request and also make the ISIN available to users at the same time. However, actual securities numbers are based on domestic proprietary numbering in many markets for the time being. It will be important to promote ISIN in ASEAN+3, including timely operational procedures.

## Business Identifier Code (BIC)

The Business Identifier Code (BIC) is a unique identification code for both financial and non-financial institutions. Its structure is defined in ISO9362. BIC is an 8- or 11-digit code that indicates a specific financial institution, with the last three digits being an optional branch code. **Figure 3.9** illustrates the code structure of ISO9362.

Many economies do not use BIC yet for financial institution identification. Local proprietary codes are used instead. Indonesia, Japan, Singapore, and Thailand use or will eventually use BIC as financial institution identification. A conversion table between BIC and the relevant local code is available in the PRC; Hong Kong, China; and

**Figure 3.6 ISO20022 Current world trend – Payments MI & initiatives**




the Philippines. In the Philippines, BIC is used only for cash settlement instructions sent to the central bank's RTGS system.

## Securities Account

All markets in ASEAN+3 use proprietary numbering for securities (safekeeping) accounts. There is currently no code structure for securities numbering as defined in ISO 20022. Securities account identification is defined as text format with a maximum of 35 texts. **Figure 3.10** is an example of a securities account. Because code structures of securities accounts are influenced by the taxation structure of each country, it will be a great challenge to standardize securities account structures and numbering in the region; thus, there is also a need to harmonize the tax structure for non-residents before account structures can be standardized. When discussing standardization of securities accounts, standardization of cash accounts must also be taken into consideration.

Securities account structure is proprietary in all economies in ASEAN+3. A proprietary code is used in all economies with respect to securities and cash accounts.

There are two types of account structures for CSD: (i) omnibus account structure and (ii) segregated account structure.

An omnibus account is an account opened in the name of an account provider, where securities or collateral belonging to some or all customers of a particular participant are co-mingled and held in a single account. A segregated account is where the securities or collateral of each customer are segregated in their names. In several cases, the legal and regulatory framework, or existing market practice, require accounts to be segregated on an investor or beneficial owner level.

While a segregated account structure has more transparency and protection, it has difficulty in terms of operations and systems. It requires every asset to be tagged by the CSD member

**Table 3.3 Current Status of Adoption to ISO 20022**

| Economy | CSD | Instrument | Proprietary | ISO15022 | ISO20022 |
|---|---|---|---|---|---|
| CN | CCDC | G/C | | | ○ |
| CN | CSDCC | G/C | ○ | | |
| CN | SHCH | C | | | ○ |
| HK | HKMA(CMU) | G/C | | ○ | |
| ID | BI | G | ○ | ○ (2014) | To be determined when ISO20022 is implemented in 2015 (expected in 2018)* |
| ID | KSEI | C | ○ | | ○ (2014) |
| JP | BOJ | G | ○ | | ○ (FY2015) |
| JP | JASDEC | C | | ○ * * | ○ (2014) |
| KR | KSD | G/C | ○ | | |
| MY | BNM(RENTAS) | G/C | ○ | ○ (by 2017 ) | ○ (2019) |
| PH | BTr(RoSS) | G | ○ | | |
| PH | PDTC | G/C | ○ | | |
| SG | MAS | G | | ○ | |
| SG | CDP | C | ○ | | ○* * * (2015) |
| TH | TSD | G/C | | ○ | |
| VN | VSD | G/C | ○ | | |

C = corporate bond, G = government bond.

* This represents the perspective of ABMF SF2 Consultant.

* * JASDEC plans to parallel ISO15022 and ISO20022 until December 2018.

* * * CDP plans to adopt ISO20022 in 2014-15 with phased approach.

Note: Migration projects to ISO 20022 in which the implementation year has already been announced are included in the table.

and placed in a separate account under that customer's name. Therefore, in general, setting up omnibus accounts is a common market practice in ASEAN+3, and a segregated account structure is adopted only by the PRC and the Republic of Korea. In other words, there are also two types of account layers. A single layer is an arrangement in which each beneficial or direct owner of the security is known to the CSD or the issuer. Investors are either recorded in the issuer's register or are in physical possession of bearer securities certificates. Multi-layer is an arrangement that consists of one or more tiers of intermediaries between the issuer and investor. Thus, investors are identified only at the level of their custodian or intermediary. Multi-layer is broadly used in ASEAN+3 economies, and only the PRC and the Republic of Korea adopt single-layer **(Table 3.9)**.

## Character Code Set and Language

All CSDs in ASEAN+3 with bond markets accept UTF-8 except the Republic of Korea.

Local languages are still dominant as payment system languages in ASEAN+3. A local language is used for bond settlement systems in all ASEAN+3 economies except Hong Kong, China; Malaysia; the Philippines; and Singapore **(Figure 3.11)**. (English is partly used in Indonesia and Thailand.)

## Table 3.4 An image of mapping with ISO 20022

| Index | Message Item | Code | Or | Min Occ | Max Occ | Type | 10 common elements |
|---|---|---|---|---|---|---|---|
| | SecuritiesSettlementTransactionInstructionV03 | | | 1 | 1 | sese.023.001.03 | |
| | SctiesSttlmTxInstr | | | 1 | 1 | SecuritiesSettlementTransactionInstructionV03 | |
| 1.0 | TransactionIdentification | | | 1 | 1 | Max35Text | 1. Instruction Identification |
| 2.0 | SettlementTypeAndAdditionalParameters | | | 1 | 1 | SettlementTypeAndAdditionalParameters1 | |
| 2.1 | SecuritiesMovementType | DELI/RECE | | 1 | 1 | ReceiveDelivery1Code | |
| 2.2 | Payment | APMT | | 1 | 1 | DeliveryReceiptType2Code | |
| 3.0 | NumberCounts | | | 0 | 1 | NumberCount1Choice | |
| 4.0 | Linkages | | | 0 | n | Linkages17 | |
| 5.0 | TradeDetails | | | 1 | 1 | SecuritiesTradeDetails1 | |
| 5.5 | TradeDate | | | 0 | 1 | TradeDate1Choice | |
| | Date | | or | 1 | 1 | DateAndDateTimeChoice | 2. Trade Date |
| | Date | | or | 1 | 1 | ISODate | |
| 5.6 | SettlementDate | | | 1 | 1 | SettlementDate1Choice | |
| | Date | | or | 1 | 1 | DateAndDateTimeChoice | 3. Settlement Date |
| | Date | | or | 1 | 1 | ISODate | |
| | DateTime | | or | 1 | 1 | ISODateTime | |
| 6.0 | FinancialInstrumentIdentification | | | 1 | 1 | SecurityIdentification14 | 5. Financial Instrument |
| | ISIN | | | 0 | 1 | ISINIdentifier | |
| | OtherIdentification | | | 0 | n | OtherIdentification1 | |
| | Identification | | | 1 | 1 | Max35Text | |
| 7.0 | FinancialInstrumentAttributes | | | 0 | 1 | FinancialInstrumentAttributes35 | |
| 8.0 | QuantityAndAccountDetails | | | 1 | 1 | QuantityAndAccount25 | |
| 8.1 | SettlementQuantity | | | 1 | 1 | Quantity6Choice | 4. Quantity of Financial Instrument |
| | Quantity | | or | 1 | 1 | FinancialInstrumentQuantity1Choice | |
| | Unit | | or | 1 | 1 | DecimalNumber | |
| | FaceAmount | | or | 1 | 1 | ImpliedCurrencyAndAmount | |
| 8.4 | SafekeepingAccount | | | 1 | 1 | SecuritiesAccount13 | 7. Safekeeping Account |
| | Identification | | | 1 | 1 | Max35Text | |
| 9.0 | SettlementParameters | | | 1 | 1 | SettlementDetails42 | |
| | SecuritiesTransactionType | | | 1 | 1 | SecuritiesTransactionType9Choice | |
| | Code | | or | 1 | 1 | SecuritiesTransactionType7Code | |
| | Proprietary | | or | 1 | 1 | GenericIdentification20 | |
| | Identification | | | 1 | 1 | Exact4AlphaNumericText | |
| | Issuer | | | 1 | 1 | Max35Text | |
| 10.0 | StandingSettlementInstructionDetails | | | 0 | 1 | StandingSettlementInstruction4 | |
| 11.0 | DeliveringSettlementParties | | | 0 | 1 | SettlementParties11 | |
| 11.1 | Depository | | | 0 | 1 | PartyIdentification48 | |
| | Identification | | | 1 | 1 | PartyIdentification44Choice | 8. Place of Settlement |
| | AnyBIC | | or | 1 | 1 | AnyBICIdentifier | |
| 11.2 | Party1 | | | 0 | 1 | PartyIdentificationAndAccount42 | |
| | Identification | | | 1 | 1 | PartyIdentification43Choice | 9. Receiving/Delivering Agent |
| | AnyBIC | | or | 1 | 1 | AnyBICIdentifier | |
| | ProprietaryIdentification | | or | 1 | 1 | GenericIdentification19 | |
| | Identification | | | 1 | 1 | Max35Text | |
| | Issuer | | | 1 | 1 | Max35Text | |
| | SafekeepingAccount | | | 0 | 1 | SecuritiesAccount13 | |
| | Identification | | | 1 | 1 | Max35Text | |

## Table 3.5 10 common elements for settlement instruction

| | ISO 15022 definition | ISO 20022 definition |
|---|---|---|
| 1. | Instruction Identification<br>➢ Sender's Message Reference | 1.0 TransactionIdentification<br>➢ Unambiguous identification of the transaction as know by the instructing party |
| 2. | Trade Date | 5.5 TradeDate<br>➢ Specifies the date/time on which the trade was executed |
| 3. | Settlement Date | 5.6 SettlementDate<br>➢ Date and time at which the securities are to be delivered or received |
| 4. | Quantity of Financial Instrument<br>➢ Original face amount | 8.1 SettlementQuantity<br>➢ Total quantity of securities to be settled |
| 5. | Financial Instrument<br>➢ Identification of the financial instrument | 6.0 FinancialInstrumentIdentification<br>➢ Financial instrument representing a sum of right of the investor vis-à-vis the issuer |
| 6. | Settlement Amount | 14.0 SettlementAmount<br>➢ Total amount of money to be paid or received in exchange for the securities |
| 7. | Safekeeping Account | 8.4 SafekeepingAccount<br>➢ Account to or from which a securities entry is made |
| 8. | Place of Settlement | 11.1, 12.1 Depository<br>➢ First party in the settlement chain. In a plain vanilla settlement, it is the Central Securities Depository where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments |
| 9. | Receiving/Delivering Agent | 11.2, 12.2 Party1<br>➢ Party that, in a settlement chain interacts with the depository |
| 10. | Client of Receiving/Delivering agent<br>Buyer/seller | 11.3, 11.4, 11.5, 11.6, 12.3, 12.4, 12.5, 12.6 Party2, Party3, Party4, Party5<br>➢ Party that, in a settlement chain interacts with Party1, Party2, Party3, or Party4 |

**Table 3.6 Message Items of Settlement Instruction (10 common elements)**

| Elements | CSDCC (CN) | CCDC (CN) | CMU (HK) | BI (ID) | KSEI (ID) | BOJ (JP) | KSD (KR) | PDEx (PH) | MAS (SG) | TSD (TH) | VSD (VN) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Instruction Identification | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2. Trade Date | | | ✓* | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3. Settlement Date | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4. Quantity of Financial Instrument | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓** |
| 5. Financial Instrument | | ✓** | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| 6. Settlement Amount | ✓ | ✓** | ✓* | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7. Safekeeping Account | | ✓ | ✓* | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 8. Place of Settlement | ✓ | | ✓* | ✓ | | | | ✓ | ✓ | ✓ | |
| 9. Receiving or Delivering Agent | | ✓** | ✓* | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 10. Client of Receiving or Delivering Agent | | | ✓* | ✓ | | | | ✓ | ✓ | ✓ | |

✓* Conditional
✓** Optional

**Figure 3.7 Outline of Numbering and Coding Standards**

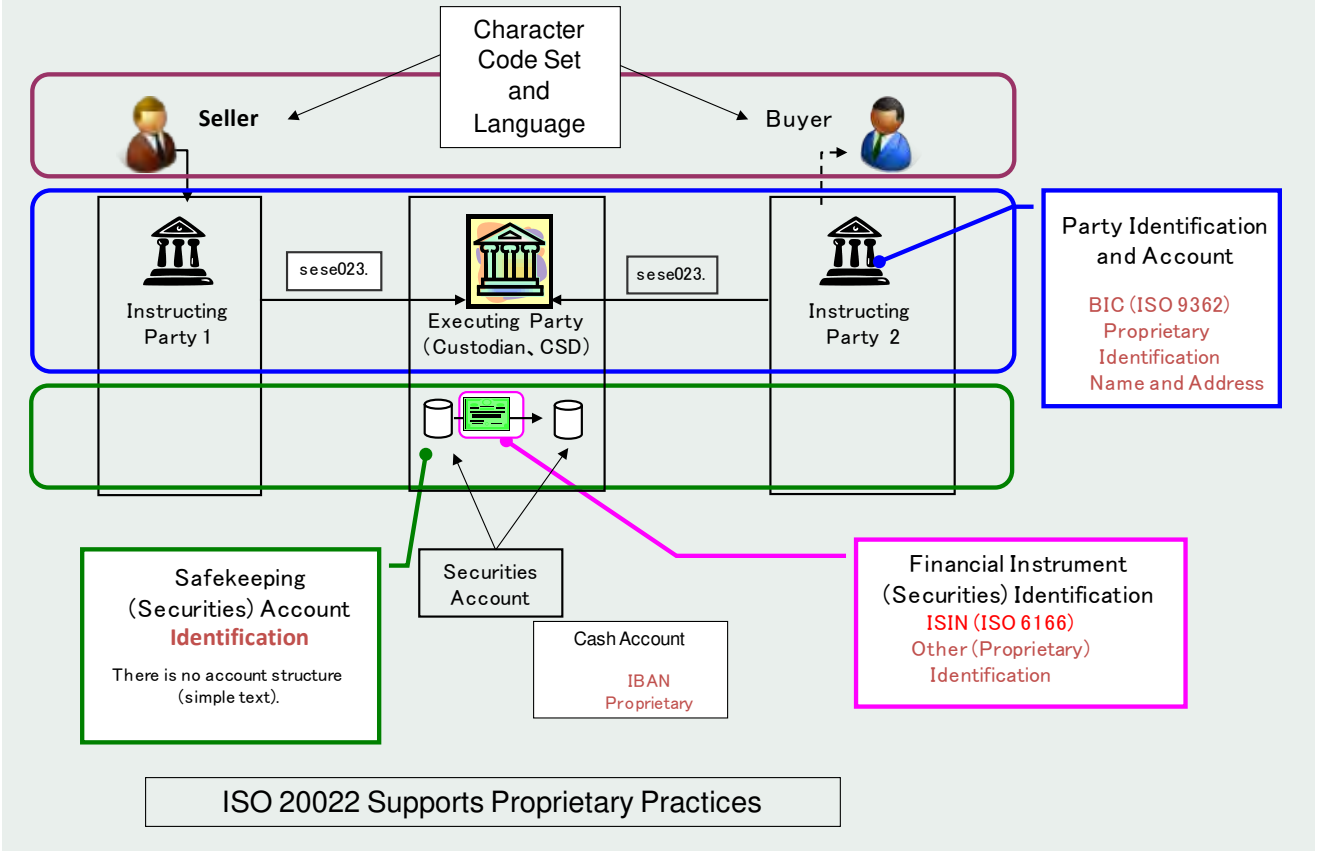
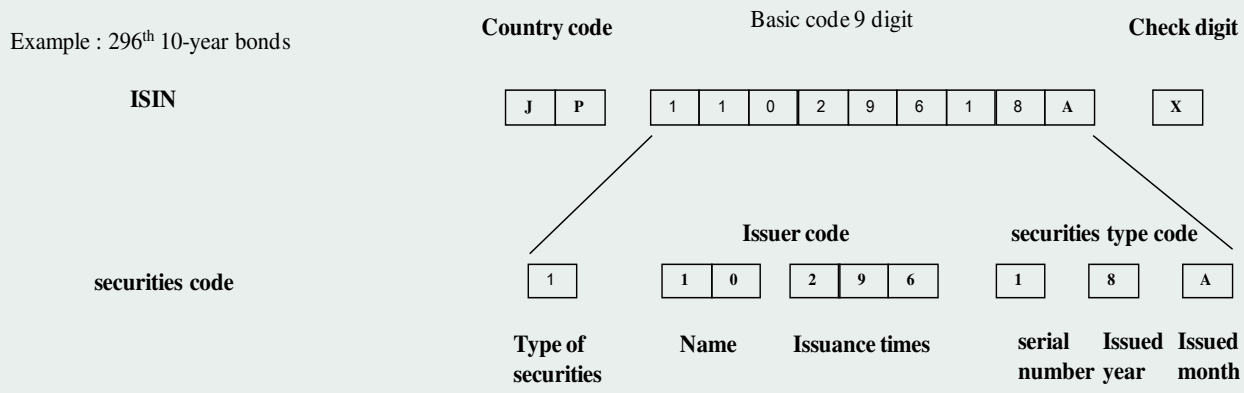


**Table 3.7 Numbering and Coding in ASEAN+3**

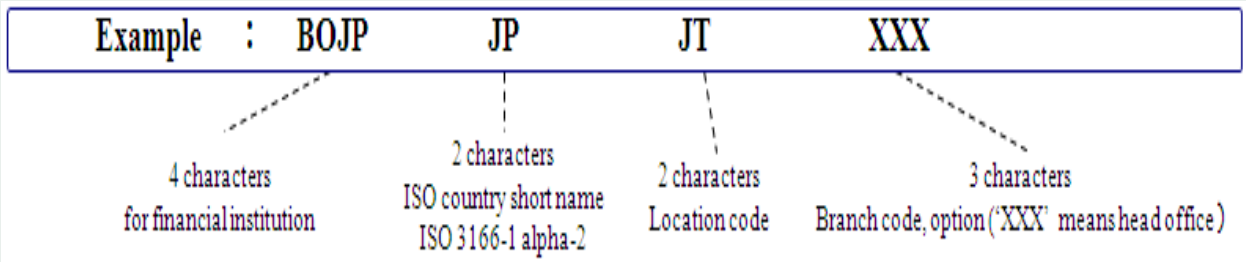
| Economy | Securities Numbering | Financial Institution Identification | Encoding Scheme and Language |
|---|---|---|---|
| CN | Proprietary<br>• All securities registered on the interbank bond market for CCDC are given ISIN.<br>• Local code is adopted by CSDCC. | Proprietary<br>• Proprietary participant code is used by CCDC.<br>• Local code is adopted by CSDCC. | Unicode (UTF-8) EBCDIC |
| HK | ISIN/Proprietary<br>• ISIN is used for all securities numbering of bond transactions.<br>• A CMU system supports CMU Issue Number and Common Code. | Proprietary<br>• A CMU Member Account Number is assigned by an internal coding scheme in CMU. | Code Supported by SWIFT |
| ID | ISIN/Proprietary<br>• An ISIN code is issued by KSEI.<br>• Local code is commonly used in the local market. | Proprietary<br>• Local code, the Single Investor Identification (SID), is used. | |
| JP | ISIN/Proprietary<br>• BOJ-NET uses a proprietary code and New BOJ-NET will adopt ISIN.<br>• JASDEC has already adopted ISIN. | BIC/Proprietary<br>• Only a proprietary code is used in the CSDs for JGBs.<br>• New BOJ-NET will adopt BIC in addition to the current proprietary code.<br>• JASDEC has adopted BIC. | Unicode (UTF-8) |
| KR | ISIN/Proprietary<br>• ISIN is adopted as the numbering standard by KRX.<br>• Short code is also used to identify bond name composed of nine digits domestically. | Proprietary<br>• Each institution such as KSD, KRX and BOK has proprietary code for each financial entity. | KSC5601 for Korean |
| MY | ISIN/Proprietary<br>• ISIN is used for securities numbering, but local securities codes prevail. | BIC/Proprietary<br>• BIC is used as a part of a unique identifier code (UIC) for the participants. | |
| PH | ISIN/Proprietary<br>• ISIN is used by BTr-RoSS for government securities, except for special purpose Treasury bonds and multi-currency retail Treasury bonds.<br>• Local numbering is also used for most of bond transactions.<br>• Proprietary code is commonly used in PDTC. | BIC/Proprietary<br>• Both BIC and local code are used in BTr-RoSS.<br>• PDS-assigned firm codes are used for depository and settlement systems.<br>• PDTC adopts proprietary code to identify financial institutions, which are PDS-assigned firms. | Unicode (UTF-8) |
| SG | ISIN/Proprietary<br>• ISIN is used in the Singapore bond market.<br>• SGX proprietary stock code is used. | BIC/Proprietary<br>• MEPS+ SGS and MEPS+ RTGS adopt BIC.<br>• MEPS+ SGS and MEPS+ RTGS non-participant member code can either use its BIC or an eight-character code assigned by MAS. | Unicode (UTF-8) |
| TH | ISIN/Proprietary<br>• ISIN and local code are used for bond trading.<br>• PTI uses ISIN. | BIC/Proprietary<br>• Both BIC and proprietary code are used. | Unicode (UTF-8) |
| VN | ISIN/Proprietary<br>• VSD issues ISIN for all bonds registered with VSD and listed in the stock exchanges.<br>• Local code is used domestically and needs to be converted to ISIN.<br>• The market allows investors the option of using ISIN code and local code. | Proprietary<br>• Local code is used domestically. | Unicode (UTF-8) |

**Figure 3.8 ISIN Code Structure of Government Bonds (example)**




Source: NTT DATA Corporation.

**Figure 3.9 Code Structure of ISO 9362**




Source: NTT DATA Corporation.

**Table 3.8 ANNA Members in ASEAN+3**

| | Full Member |
|---|---|
| CN | China Securities Regulatory Commission |
| HK | Hong Kong Exchanges and Clearing Ltd. |
| ID | PT Kustodian Sentral Efek Indonesia (Indonesian Central Securities Depository) |
| JP | Tokyo Stock Exchange |
| KR | Korea Exchange – KRX |
| MY | Bursa Malaysia |
| PH | Philippine Stock Exchange, Inc. |
| SG | Singapore Exchange Limited |
| TH | Thailand Securities Depository Co., Ltd. |
| VN | Viet Nam Securities Depository |

# Market Practices and Others

The survey revealed that some market practices, which could result in smoother cross-border trade and settlement, differ across economies in ASEAN+3. The key findings are discussed below.

## Settlement Cycles

The settlement cycles of government bond transactions vary from T+1 to T+30 in ASEAN+3. Settlement cycles are mainly determined by negotiation based on the proprietary business practices of market participants and restrictions of payment infrastructure.

**Figure 3.10 Account Structure of Government Bond (example)**

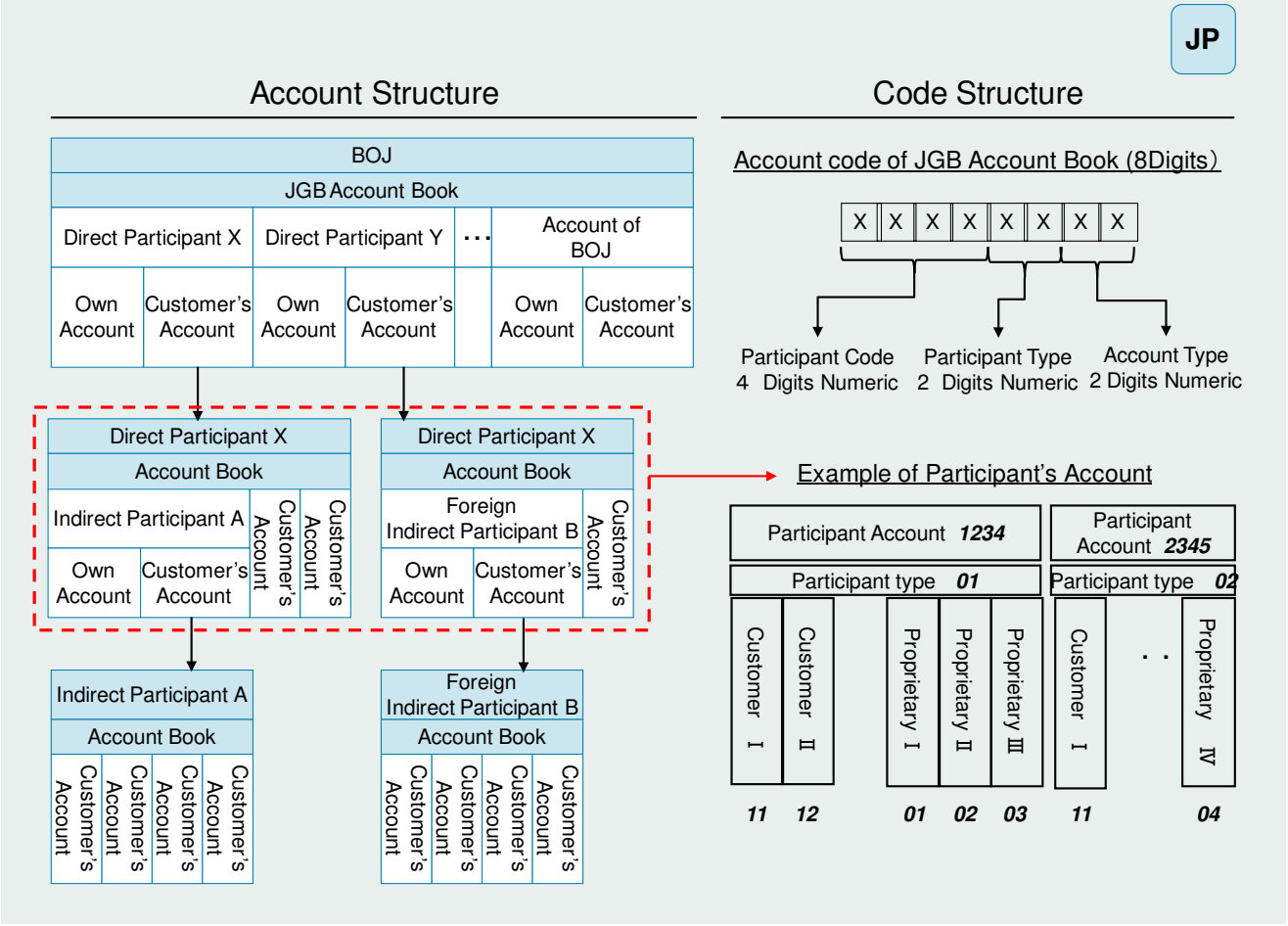



**Table 3.9 Securities Account of Each Economy**

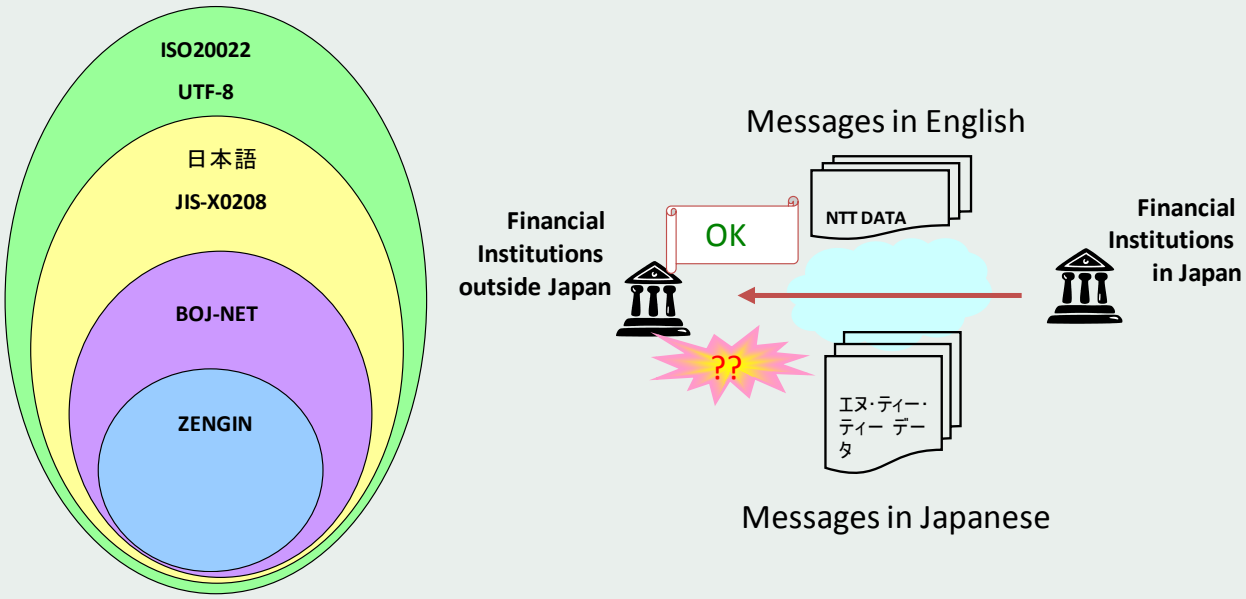
| Economy | Account Structure | Layer |
|---|---|---|
| CN | Segregated | Single-Layer |
| HK | Omnibus | Multi-Layer |
| ID | Omnibus | Multi-Layer |
| JP | Omnibus | Multi-Layer |
| KR | Segregated | Single-Layer |
| MY | Omnibus | Multi-Layer |
| PH | Omnibus | Multi-Layer |
| SG | Omnibus | Multi-Layer |
| TH | Omnibus | Multi-Layer |
| VN | Omnibus | Multi-Layer |

In general, the settlement cycle is a common rule in the market. The rule may not be stipulated in regulation or law but should be observed by market participants. For example, if the settlement cycle of bond trades in a market is T+3, investors must settle their government bond transactions in 3 business days. This means that when you buy government bonds, the broker must receive your payment no later than 3 business days after the trade is executed. When you sell a government bond, you must deliver to your broker your bond no later than 3 days after the sale.[10]

As such, the settlement cycle of the market means that the majority of market participants need to follow the practice as a rule, although there is no such rule in every ASEAN+3 market. Thus, it

[10] Based on a description provided by the US Securities and Exchange Commission (modified by the author).

**Figure 3.11 Standardization of Character Codes and Languages**




would be beneficial for all market participants to have a common settlement cycle in ASEAN+3.

Some markets are trying to shorten their settlement cycles. The purpose of shortening the settlement cycles of bonds is mainly the reduction of settlement risks, and the stabilization and activation of short-term financial markets. Unsettled bonds are exposed to settlement risks and the longer a settlement cycle, the more unsettled positions accumulate. The reasons for shortening the settlement cycle are listed below:

**(i) Reduction of settlement risks**
- eliminating the risk of not receiving securities or cash on schedule
- reducing the size and cost of fundraising associated with a counterparty's default
- mitigating replacement risks
- preventing a chain reaction of settlement failures

**(ii) Stabilization and activation of short-term financial markets**
- opportunities for raising funds and managing liquidity
- mitigating market malfunctioning by speeding up the replacement of unsettled positions and the resolution of settlement failures
- improving liquidity of government bonds to make these more attractive as financial products

To shorten the settlement cycle in a market, STP facilities among similar infrastructures, such as an online connection between trade systems and CSDs, need to be implemented. At the same time, all market participants need to automate individual internal systems.

Considering the settlement cycle in ASEAN+3, there is not yet an institutional framework in which to discuss such an issue among stakeholders in the region. Thus, it is imperative that an institutional framework be established to have common rules and processes for the settlement cycle in the region. **Table 3.10** illustrates the typical settlement cycles of domestic and cross-border transactions in ASEAN+3.

The settlement cycle of domestic bond transactions in the PRC, the Republic of Korea, and the Philippines are T+1, which is shorter than that in other markets. In these markets, the trading system is directly linked with the CSD, and transmitting trade data to the CSD requires an online network. STP may contribute to shortening the settlement cycle in these markets.

**Table 3.10 Settlement Cycle in ASEAN+3**

| Economy | Domestic | Cross-Border |
|---|---|---|
| CN | T+1 (negotiable, market practice) | T+1 (market practice) |
| HK | T+2 (negotiable, market practice) | According to the standard cycle of the respective market |
| ID | T+2 (negotiable, market practice) | T+2 |
| JP Gov. | T+2 | T+2～T+4 |
| JP Corp. | T+3 | T+2～T+4 |
| KR | T+1 (negotiable, market practice)<br>T+1-T+30 is possible | T+1-T+3 (in-bound transaction)<br>Depends on the settlement cycle of designation country for investment.(out-bound transaction) |
| MY | T+1/T+2 (negotiable, market practice) | T+2 |
| PH | T+1 (negotiable, market practice) | T+1 (same as domestic transaction) |
| SG | T+3 (negotiable, market practice) | T+1 (government bond), T+3 (corporate bond) |
| TH | T+2 (negotiable, market practice) | T+3 (US investor) |
| VN | T+1 ※T=trade data capturing date | No cross-border transaction |

**Table 3.11 Operating Hour in ASEAN+3**

| | CSD | Operating Hour (local time) | | |
|---|---|---|---|---|
| | | Open | Cut-Off Time | Close |
| CN (+1) | CCDC/SHCH | 9:00 | - | 17:00 |
| | CSDCC | 8:00 | - | 16:00 |
| HK (+1) | CMU | 8:30 | 16:00 | 18:30 |
| ID (0) | BI | 6:30 | 16:00 | 19:00 |
| | KSEI | 4:00 | 15:10 (cash settlement) | 17:10 |
| JP (+2) | BOJ | 9:00 | 14:00 | 16:30 |
| | JASDEC | 9:00 | 15:00 | 17:00 |
| KR (+2) | KSD | 9:00 | 16:00 | 17:00 |
| MY (+1) | MyClear | 8:00 | | 18:00 (13:00 on Sat) |
| PH (+1) | BTr-RoSS | 9:30 | 14:00 | 15:00 |
| | PDTC | 8:00 | 16:00 | 18:00 |
| SG (+1) | MAS | 9:00 | 15:30 | 19:00 |
| | CDP | 8:30 | 12:00 | 17:30 |
| TH (0) | TSD | 7:00 | 17:00 | 20:30 |
| VN (0) | VSD | 8:00 | 9:00 (bond settlement)<br>11:00 (cash settlement) | 17:00 |

Note: Time difference from Jakarta is shown after country code.

**Table 3.12 Matching Types in ASEAN+3 Markets**

| | Trade Matching | Pre-Settlement Matching | Settlement Matching |
|---|---|---|---|
| CN | CFETS | - | Central and Local |
| HK | | CMU | Central and Local |
| ID | - | telephone, facsimile | Central |
| JP | PSMS | PSMS | Local |
| KR | B-Tris | - | Central and Local |
| MY | (BMS ETP) | RENTAS | Local |
| PH | FI Trading System /RoSS | telephone, facsimile | Central and Local |
| SG | - | PTI, telephone | Local |
| TH | - | telephone, facsimile | Central |
| VN | HNX | - | Central |

Although the cycle in Viet Nam is generally regarded as T+1, the definition of T in Viet Nam is not the trade date but the date when trade data is entered into the trade system of the Hanoi Stock Exchange (HNX). Before entering the trade data into the system, an actual trade agreement should be made between a sell side and a buy side in the OTC market. Therefore, the settlement cycle based on the trade date generally accepted in ASEAN+3 is either T+2 or T+3 in Viet Nam.

## Operating Hours

Having a common settlement cycle in ASEAN+3 will be related to the operating hours in each market, particularly the cut-off time in the market.[10] Operating hours and cut-off times for DVP transactions in each market are shown in **Table 3.11**.

[10] According to JSDA's definition, 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.

## Matching Types

The process of matching, particularly settlement matching, is categorized as either central matching or local matching **(Table 3.12)**. Also, please refer to Appendix 2.

**Central matching**. Both market participants (sell side and buy side) or trading systems send the trade data to the CSD. Then, the CSD matches the data and sends back the matching confirmation to the sell side and buy side.

**Local matching**. One side of the bond settlement, either a sell side or buy side, inputs the trade data to the CSD and the CSD forwards the data to the counterparty. The counterparty checks the data and sends back affirmation to the CSD if the data are deemed to be acceptable.

## Reporting Rules

Some markets in ASEAN+3 have rules that market participants have to report trade data to authorities and SROs for trade transparency. Examples of such rules in the region are given in this section.

In Indonesia, the Indonesia Stock Exchange (IDX) functions as a bond transaction reporting center.

The sell side or buy side is obliged to report trade data to the centralized trading platform (CTP) of the IDX within 30 minutes of a trade; or, if a trade is done without involving any intermediary–broker, the custodians need to report within 30 minutes after the settlement instruction is received by the custodian.

In the Republic of Korea, the Korea Financial Investment Association (KOFIA) is an SRO. Financial investment companies engaged in bond trading should report the details of a trade to KOFIA, and KOFIA discloses this information on its website.

In Malaysia, Bursa Malaysia (BM) is an SRO responsible for improving trade transparency in the Malaysian bond market. BM runs an electronic trading platform where the sell side and buy side have to input all trades.

In Thailand, all debt securities transactions, wherever they are traded, must be reported to the Thai Bond Market Association (ThaiBMA). ThaiBMA monitors the reported price data to ensure that disseminated prices are efficient as the market reference.

Trade data collection and reporting are very important issues that need to be addressed to make ASEAN+3 markets more sound and transparent. This kind of initiative may also be related to the activities of the ASEAN+3 Macroeconomic Research Office (AMRO).

## Physical Certificates

There are several different ways for beneficial owners to hold securities. In some economies, physical securities still circulate, particularly for corporate bonds, and beneficial owners may keep securities in their possession. Generally, beneficial owners employ a custodian to hold them to reduce risks and safekeeping costs.

Bonds are completely dematerialized in the PRC and Japan.

The disadvantages of physical certificates include the need for manual examination, risk of loss, damage or forgery, and cost of storage. They prevent cross-border investors from trading.

Thus, the immobilization or dematerialization of securities should be considered. Immobilization of physical securities involves concentrating the location of physical securities in a depository (or CSD). The costs and risks associated with owning and trading securities may be reduced considerably through immobilization. A global note, which represents the whole issue, is issued for immobilization. A further step away from circulating physical securities is full dematerialization of a securities issue. In this approach, there is no global note issued, as the rights and obligations stem from book entries in an electronic register.

The immobilization or dematerialization of securities and their transfer by book-entry within a CSD significantly reduces the total costs associated with securities settlements and custody. By centralizing the operations associated with custody and transfer within a single entity, costs can be reduced through economies of scale. In addition, efficiency gains can be achieved through increased automation, which reduces the errors and delays inherent in manual processing. By reducing costs and improving the speed and efficiency of settlement, book-entry settlement also supports the development of securities lending markets, including markets for repurchase agreements and other economically equivalent transactions. These activities, in turn, enhance the liquidity of securities markets and facilitate the use of securities collateral to manage counterparty risks, thereby increasing the efficiency of trading and settlement.

The immobilization or dematerialization of securities also reduces or eliminates certain risks such as the destruction or theft of certificates. The transfer of securities by book-entry is a precondition for the shortening of the settlement cycle for securities trades, which reduces replacement cost risks. Book-entry transfer also facilitates DVP settlement, thereby eliminating principal risks.

**Table 3.13 Reporting Rules in ASEAN+3 Markets**

| Economy | Entity Receiving a Report | Reporting Rule |
|---|---|---|
| CN | China Foreign Exchange Trade System (CFETS) | Trade data are entered into CFETS for price transparency. |
| HK | - | - |
| ID | Indonesia Stock Exchange (IDX) | IDX functions as a bond transaction reporting center. The sell side or buy side is obliged to report trade data to the centralized trading platform of IDX within 30 minutes of a trade. If a trade is conducted without an intermediary or broker, the custodian needs to report within 30 minutes after the settlement instruction is received. |
| JP | - | - |
| KR | Korea Financial Investment Association (KOFIA) | A financial investment company engaged in bond trading should report the details to KOFIA. |
| MY | Bursa Malaysia(BM) | BM runs Electronic Trading Platform (ETP) and the seller and buyer have to input all trades into ETP. |
| PH | Philippine Dealing and Exchange Corporation (PDEx) | The seller or buyer have to report trade data to PDEx. |
| SG | - | - |
| TH | ThaiBMA | All debt securities trading transactions, wherever conducted, must be reported to the ThaiBMA. The ThaiBMA monitors the reported price data to ensure that disseminated prices are efficient enough to be used as market reference. |
| VN | - | - |

**Table 3.14 Exchangeability of Scripless Bonds to Physical Bonds**

| | Exchangeability of Scripless Bonds to Physical Bonds |
|---|---|
| CN | No |
| HK | Yes |
| ID | Yes |
| JP | No |
| KR | Yes |
| MY | Yes |
| PH | Yes |
| SG | Yes |
| TH | Yes |
| VN | Yes |

Source: ABMF Sub-Forum 1 Part 1 Report.

# Cross-Border DVP Flows and LCY Liquidity

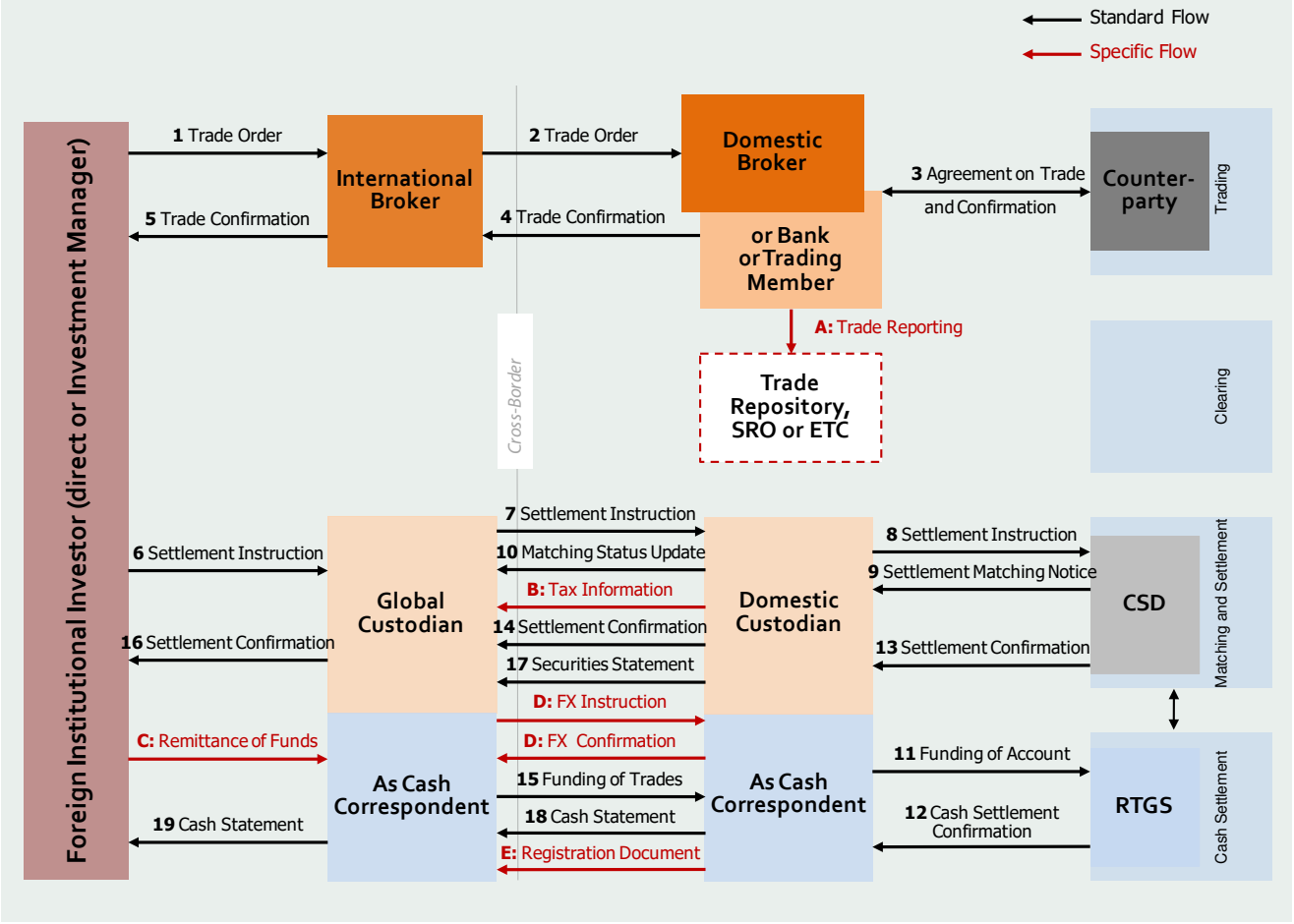
Specific characteristics of cross-border DVP flows in ASEAN+3 were studied and the key findings in reference to typical types of cross-border flows are depicted in **Figure 3.12**. These include:

(i) To comply with trade reporting requirements, domestic brokers and/or banks send trade details to authorities in order to ensure transparency in Indonesia, the Republic of Korea, Malaysia, and Thailand.

(ii) For the purpose of obtaining relevant tax information, extra messages may need to be exchanged in order to calculate appropriate capital gains tax in Indonesia.

(iii) Related to the "Remittance of Funds", foreign institutional investors may need to remit funds before settlement in the PRC and Viet Nam due to pre-funding requirements.

**Figure 3.12: Typical DVP Flows for Foreign Institutional Investors**




(iv) Global custodians and local custodians need to send additional FX instruction and confirmation messages in Indonesia, the Republic of Korea, Malaysia, the Philippines, Thailand, and Viet Nam. Typical FX and cash controls in ASEAN+3 are summarized in **Table 3.15**.

(v) A specific registration document needs to be issued for capital repatriation and/or remittance of interest payments in the Philippines.

## Communications Protocol

The communications protocol between market participants and CSDs in each market is mostly Transmission Control Protocol/Internet Protocol (TCP/IP), while message formats vary from market to market and there is no de facto standard. Most of the protocols between market participants and cash settlement infrastructures also use TCP/IP. Protocols and message formats in each market are showed in **Table 3.16**.

Some CSDs have direct linkages with market participant's systems. In the future, ABMF SF2 can promote the establishment of an environment for cross-border transactions by standardizing the message format of the linkages based on international standards.

**Table 3.15 Typical FX and Cash Control in ASEAN+3**

| | FX Trades with Underlying Investment | Pre-Funding | Prohibition of Third-Party FX | FX Reporting | Prohibition of Overdraft by Non-Residents | Prohibition of Offshore FX Trading for Investment | Limitation on Repatriation |
|---|---|---|---|---|---|---|---|
| CN | Y | Y | Y | Y | Y | Y | Y |
| HK | N | N | N | N | N | N | N |
| ID | Y | N | N | Y | Y | Y | Y |
| JP | N | N | N | N | N | N | N |
| KR* | N | N | N * | Y | Y | Y | N |
| MY | Y | *N* | N | N | Y | N | N |
| PH | N | N | N | Y | Y | N | Y |
| SG | N | N | N | N | N | N | N |
| TH | Y/N | N | N | Y | N | N | N |
| VN | Y | Y | N | Y | Y | Y | Y /N |

* In the Republic of Korea, third-party FX is legally possible but not used in practice.

**Table 3.16 Protocols and Message Formats in ASEAN+3 Bond Markets**

| | Market | Between CSD and Seller or Buyer | | | Between Cash Settlement System and Seller or Buyer | |
|---|---|---|---|---|---|---|
| | | Linkage | Protocol | Message Format | Protocol | Message Format |
| CN | OTC | Direct Link | TCP/IP HTTP, SOAP | ISO20022 XML and Text | TCP/IP | ISO20022 |
| HK | OTC | Direct Link | TCP/IP | ISO15022 | TCP/IP | ISO15022 |
| ID | OTC | Terminal Access | TCP/IP | ISO15022/ ISO20022 | TCP/IP | ISO15022 |
| JP | OTC | Direct Link | TCP/IP | Proprietary: ISO20022 | TCP/IP | Proprietary: ISO20022 will be adopted |
| KR | OTC | Direct Link | TCP/IP | - | TCP/IP | - |
| MY | OTC | Terminal Access | TCP/IP | Proprietary: ISO20022 will be adopted | TCP/IP | Proprietary: ISO20022 will be adopted |
| PH | OTC GSED | Terminal Access | TCP/IP HTTPS | Proprietary | TCP/IP | ISO15022 |
| SG | OTC | Terminal Access | TCP/IP | ISO15022/ ISO20022 will be adopted | TCP/IP | ISO15022/ ISO20022 will be adopted |
| TH | OTC | Terminal Access | TCP/IP HTTPS | ISO15022 | TCP/IP | ISO15022 |
| VN | OTC | Terminal Access | TCP/IP | XML | - | - |

# Key Observations and Policy Recommendations

Based on the key findings described in Section 3, ABMF SF2 members discussed policy recommendations on bond market regulations and the practices of individual economies, as well as mutual cooperation among the economies in the region. The policy recommendations are categorized in this section according to (i) bond market infrastructures, (ii) DVP flows, (iii) interest payment flows, (iv) message standards (numbering and coding), (v) market practices and other issues, and (vi) cross-border STP and LCY liquidity.

## Bond Market Infrastructure

Robust and sound bond market infrastructure such as CSD and RTGS systems are already in place in the region's 10 economies with developed bond markets. However, infrastructure that further promotes efficiency and risk reduction, such as PSMS, CCP, TR, and TS are not fully implemented yet. Such infrastructure can be introduced when taking into account a variety of conditions, including trade values, trade volumes, and number of market participants. When implementing bond market polices, ABMF SF2 also suggests that Principles for Financial Market Infrastructures (PFMI) and related principles and recommendations published by CPSS/IOSCO be observed.

**(i) Implementation of automated pre-settlement matching infrastructure**

Most economies have not yet developed an automated PSMS and pre-settlement matching is conducted manually. As utilizing an automated PSMS would be conducive to STP, with decreased workload and failures compared to manual processes, it is recommended to implement automated pre-settlement matching infrastructure in each economy in a standardized manner. Pre-settlement matching utilizing forward (future-dated) transactions could also be an option. Pre-settlement matching systems may be considered as one of the cornerstones in improving STP in the region.

**(ii) Discussion on CCP with market development**

It is generally held that developing CCP for bond transactions is not an urgent priority considering the limited need for risk reduction

through CCP compared to OTC derivatives, and the relatively low trading and settlement volumes in the region's bond markets. In this respect, it is advisable to consider discussions on CCP for the OTC market after trade volumes increase to a more significant level. At the same time, the introduction of CCP in exchanges might be also considered in relation with other instruments such as equity.

**(iii) Central and local matching as standard**
Both central matching and local matching are common in ASEAN+3. Considering market practices and other factors, it is recommended that both central and local matching types be clearly regarded as standard.

**(iv) Bond settlement using central bank money**
In most ASEAN+3 economies, central bank money is used to settle government and corporate bonds. In economies where this is not the case, it is recommended that central bank money be used for bond settlement, including cross-border bond settlement, and in particular for government bonds to reduce settlement risk associated with relatively high trade values.

**(vi) Strengthening price discovery and transparency**
TRs have been established in some economies to secure price discovery and transparency and so enhance information flows, which could contribute to cross-border bond trades in the region. For those economies without TR, it is advisable to consider establishing one after the market develops more significantly.

# DVP Flows

Bond trade and settlement (DVP) flows in ASEAN+3 vary across different economies and different CSDs. The flows for residents are different from those for non-residents in some economies. It is recommended to discuss the harmonization of these flows considering the impact to both the infrastructures themselves and participant systems connected with them. Such harmonization could be utilized for defining business and system requirements of interlinking gateways and/or a hub between CSD and/or RTGS systems.

**(i) Enhancing STP in CSD-related data flows**
Entering settlement instruction data into a CSD is not an automated process in many ASEAN+3 economies. It is recommended that CSDs be connected with upstream infrastructures such as PSMS in order to promote STP throughout the region. In such cases, redundant message flows may be identified and removed wherever possible.

**(ii) Developing a reference model for DVP flows for gradual harmonization of the flows**
DVP flows differ in every economy and CSD. Thus, standardizing DVP flows into a unique model is not practically feasible since infrastructures, legal systems, and tax systems vary across economies. In this respect, it is recommended that ABMF SF2 discuss best practices of DVP flows and propose a reference model with possible variations. When an individual economy is developing bond market infrastructures, the model DVP flow should be referenced as much as possible. When developing model DVP flows, the impacts on core infrastructure such as CSD and RTGS systems should be minimized. At the same time, conversions between international standards and proprietary practices among intermediaries are also to be minimized. More harmonized DVP flows could contribute to defining the requirements for interlinking gateways and/or a hub between CSD and/or RTGS systems in the future.

# Interest Payment Flows

Interest payment and redemption flows also differ across economies and CSDs. One of the major reasons for these discrepancies is the differences in the applicable tax regime. It will be difficult to expect that these flows could simply be standardized to a single model since there are fundamental differences based on tax regimes, including the process of capturing the tax status of investors and the legal interpretation of TWA, among others. Meanwhile, exemption from WHT for non-residents is one of the key expectations of market participants.

**(i) Survey on the roles of PA, AMA, and TWA across economies**

In the process of interest payment from an issuer to an investor, the PA that is designated by the issuer transfers interest to an AMA. The AMA is generally a custodian except in those economies adopting a segregated account system where all investors need to open accounts with the CSD. The TWA is responsible for payment of WHT to the tax office on behalf of issuers. Central banks, commercial banks, CSDs, issuers, and the Bureau of the Treasury (in the Philippines) act as the TWA. However, the specific roles of the PA, AMA, and TWA vary across ASEAN+3. The different roles may not be defined uniformly since there are fundamental differences in legal systems and infrastructures in the region. In respect to cross-border STP, it is recommended that the basic roles of the PA, AMA, and TWA be surveyed to identify common elements and gaps in order to make cross-border interest payment more efficient.

**(ii) Continued study of interest payment flows with a view to gradual harmonization**

In addition to the survey on roles of related institutions, it is recommended that ABMF SF2 continue to discuss the differences in interest payment flows with respect to gradual harmonization. ABMF SF2 will continue to discuss commonalities and differences of interest payment flows related to cross-border collateral and repo. Also, business processes may be gradually standardized, starting with less critical ones such as documentation to be submitted to the authorities.

## Message Standards including Numbering and Coding

Message formats in most economies in ASEAN+3 are not fully compliant with international standards yet. It is recommended that the message format be compliant with ISO20022. ABMF SF2 members and ASEAN+3 authorities are expected to support the migration of message standards of bond market infrastructures to ISO20022. The numbering and coding standards that are already registered as international standards such as ISIN and BIC are recommended to be duly adopted in ASEAN+3.

**(i) Migration to ISO20022**

Considering the trend of ISO20022 implementation in major bond markets, including the European Union (EU), 2015–16 could be a turning point in the migration to ISO20022 in the region. It is recommended for ASEAN+3 economies to adopt ISO20022 as the standard message format, whenever an upgrade opportunity exists.

**(ii) Standardization of message items**

The definitions of message items differ across economies and CSDs. It is recommended that essential messages, including settlement instruction and settlement confirmation, be standardized in compliance with ISO20022 in order to facilitate and enhance cross-border STP.

**(iii) Utilizing ISIN as a unique number and establishing common rules on ISIN**

Ten ASEAN+3 economies which already have bond markets have NNAs with full membership in the ANNA. However, ISIN is not yet widely used in the region as a standard. There remain differences in numbering conventions and the period of allocating and disseminating ISINs. For example, in some economies an NNA allocates an ISIN after receiving bond information from a CSD that makes the ISIN available to trustees and CSD participants on the same day by notifying it, whereas, it takes a number of additional days in other economies. There are two different ISINs for a single domestic securities number in an economy. In this respect, it is recommended that ISIN be used as a unique numbering system to identify bonds in each economy and that common rules be established for the allocation and notification of ISINs. Cooperation with ANNA should also be discussed.

**(iv) Promotion of BIC**

Some market infrastructures still use a proprietary code for financial institution identification. It is recommended that BIC be adopted to take the opportunity to reconstruct their systems. In addition, it is desirable that

each economy has a common recognition of the numbering, notification, and maintenance of BIC.

# Market Practices and Other Issues

There exist differences in market practices and in other areas such as investor identification and account structure. It is recommended that market practices and other issues related to bond trade and settlement continue to be discussed in order to enhance the efficiency of the market even though market practices are not easy to standardize and some practices do not have a specific standard.

**(i) Harmonization of market practices**
Some market practices such as the settlement cycle differ across economies. The standardization of different market practices could be an important issue in enhancing cross-border STP. In this respect, it is recommended that the policy authorities, SROs, and market participants continue to discuss different market practices for the purpose of harmonization.

**(ii) Investor identification**
Identifying investors, either as residents vs. non-residents or professional investors vs. retail investors, is an important issue in some markets due to regulations on taxation and foreign exchange, and other legal and regulatory provisions. Currently, such regulations differ across the region and it represents one of underlying complicating bond transaction flows across economies. With respect to STP and market efficiency, it is important to review such regulations gradually with a long-term perspective and in line with market developments.

**(iii) Account structure**
Due to differences in a bond holder's right to claims on assets, there are different types of account, including own account, customer account, pledge account, trustee account. In addition, taxation has an influences on account structures (e.g., non-taxable account vs. taxable account). An omnibus account vs. segregated account and the separation of own account and customer account are also important issues. It would be difficult to standardize account structures that are stipulated according to underlying laws and regulations, including tax regimes, in the short-term. However, with respect to cross-border STP, it is important to review account structures gradually with a long-term perspective and in line with market developments.

**(iv) Language for bond settlement infrastructures**
English is not yet a common language throughout ASEAN+3 bond markets. Some economies are using a local language for settlement messages. It is advisable that English be used whenever possible.

# Cross-Border STP and LCY Liquidity

FX and cash controls are perceived as one of the key barriers in the region to executing cross-border bond trades. During the ABMF SF2 market survey, many market participants addressed the need for de-regulation of the controls to promote cross-border trade and settlement, including the improved availability of LCY. On the other hand, with changing regulatory demands and collateral landscapes in recent years, demands for cross-border collateral and cross-border repo services have been increasing. Under such circumstances, it is recommended that ABMF SF2 further study cross-border collateral and repo from a technological perspective, including current market practices, regulatory aspects, and infrastructures. The study could also include linking CSD and RTGS systems in ASEAN+3 with the aim of utilizing central bank money.

**(i) Promoting cross-border collateral and repo services**
Obtaining and maintaining LCY balances is critical to non-resident investors in cross-border bond investment. As a tool for accessing LCY liquidity, the importance of cross-border collateral and repo has been increasing in recent years. In this respect, it is recommended that policy measures be

considered to promote cross-border collateral and repo services. It is also recommended that ABMF SF2 conduct a study about cross-border collateral and repo services.

**(ii) FX and cash controls**

Except for Hong Kong, China; Japan; and Singapore; FX and cash controls for bond trade and settlement remain in all ASEAN+3 economies. Although it would not be practical to expect significant regulatory changes in the short-term, it is recommended that some of the regulations could be reviewed in the context of bond market development with a long-term perspective. Such regulations might include FX quotas, limitations on off-shore trades, prefunding rules, regulations on overdraft, and FX reporting requirements subject to the discretion of the policy authorities.

# Knowledge Support

Knowledge support is provided to the countries that are now trying to develop bond markets in ASEAN+3 by cooperating with the ABMI Technical Assistance Coordination Team (TACT).

There is a need to provide tailor-made knowledge support to those economies that have less developed capital markets or are at the initial stage of developing capital markets. The interest areas and the focus of knowledge support will be quite different for these economies and those with more developed capital markets.

It is suggested that tailor-made knowledge support be provided to the ASEAN+3 economies with less developed capital markets, including Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Viet Nam (BCLMV countries). The support could be provided in a phased approach subject to specific assistance requests from each of the targeted economies:

- **Phase 1 (Kick-Off Seminar, December 2012)**. Key participants in this knowledge sharing opportunity were officials and staff from the ministries of finance, central banks, and regulatory authorities of BCLMV countries. The agenda and course design focused on the fundamental infrastructures, both software and hardware, needed for developing government bond markets. Resource persons presented the broader perspective of existing networks and included ADB staff and consultants, ABMF Members and Experts, and professionals involved in various ABMI technical assistance projects.

- **Phase 2 (On-Site Knowledge Support, 2013)**. This involved conducting individual market visits to provide demand-specific knowledge support to each economy. Although the Kick-Off Seminar covered the general concerns of the participating economies at the early stages of developing bond markets, the specific needs and the focus of interest differ across economies depending on the status of market development and policy objectives. To serve such needs, a team consisting of members with relevant expertise visited the individual economies, provided in-depth knowledge support, and helped to develop feasible policy action plans. The visits were considered one of planned market visits under Phase2 activities. The visits were organized only when requests were made by ASEAN+3 economies that included the specific assistance being sought.

- **Phase 3 (Follow-up Program Support)**. Through Phase1 and Phase2, the need for continued support to help individual

economies in developing their bond markets was identified. Stand-alone ADB technical assistance and ASEAN+3 projects can be considered under Phase3 as needed. Phase3 support would be provided only when the target economy has strong interest in and commitment to the assistance program.

The knowledge support activities described above are currently being implemented through the middle of Phase2 and target Cambodia, Lao PDR, and Myanmar. The programs already provided a wide range of issues related to bond market development and are not limited to bond market infrastructures. Further knowledge support may be necessary in line with the necessity and request of the target countries.

# Next Phase of ABMF SF2 Activities Support and Roadmap

## Overview

The following are Phase3 activities of ABMF SF2 approved by ABMI TF3 members in April 2013 and endorsed by ASEAN+3 Finance Ministers and Central Bank Governors at the Annual Meeting on 2 May 2013 in New Delhi. Phase3 of ABMF SF2 is scheduled to start in January 2014 and be completed in December 2015.

The work items approved by ABMI TF3 are as follows.

(i) **Harmonizing message flows.** ABMF SF2 will develop a reference DVP model flow resulting from the discussions of best practices in ASEAN+3. The scope of the DVP flow to be proposed as the reference model is to cover pre-settlement matching through bond and cash settlement. When discussing harmonization of message flows, regulatory barriers preventing STP of DVP flows will also be identified.

(ii) **Standardizing message items.** ABMF SF2 will discuss the standardization of basic message items for critical messages such as settlement instruction and settlement confirmation, in accordance with ISO 20022. Message items of bond trade and settlement infrastructures are to be studied in order to develop a common understanding of each message.

(iii) **Discussion on harmonization of market practices.** ABMF SF2 will be engaged in a study to promote harmonization of market practices in ASEAN+3. Specific market practices to be discussed will be chosen from the viewpoint of promoting cross-border STP. Settlement cycles in line with FX spot dates and the time period between the record date and payment date are candidates to be studied. In carrying out the study, an institutional framework for the cooperation with SROs and other related organizations would be explored.

(iv) **Study on cross-border collateral and repo services**. For the benefit of further development of cross-border collateral and repo markets, ABMF SF2 will study current

market practices, related legal and regulatory aspects, and infrastructures, with the goal of identifying best practices and providing policy recommendations. The study could also include cross-border collateral and repo services linking CSD and RTGS systems. Interest payment flows related to cross-border collateral and repo services linking CSD and RTGS systems will also be studied.

# Harmonizing Message Flows

One of the most important objectives of harmonizing message flows is to develop a reference model of DVP flows of ASEAN+3 bond settlement. Bond and cash settlement flows for both government and corporate bonds are expected to be harmonized by sharing reference model DVP flows as operators of bond and cash settlement infrastructures upgrade their systems and processes. In other words, each market infrastructure owner and operator is expected to follow the model flows when planning and developing new infrastructure.

## Concept of Harmonizing DVP Flows

In order to discuss the reference model DVP flows, basic principles of DVP flows must first be discussed. A preliminary draft of the principles (basic conditions) proposed by the ADB Consultant is presented below **(Figure 6.1)**.

(i) RTGS is to be used for both bond settlement and cash settlement.

(ii) DVP is to be secured.

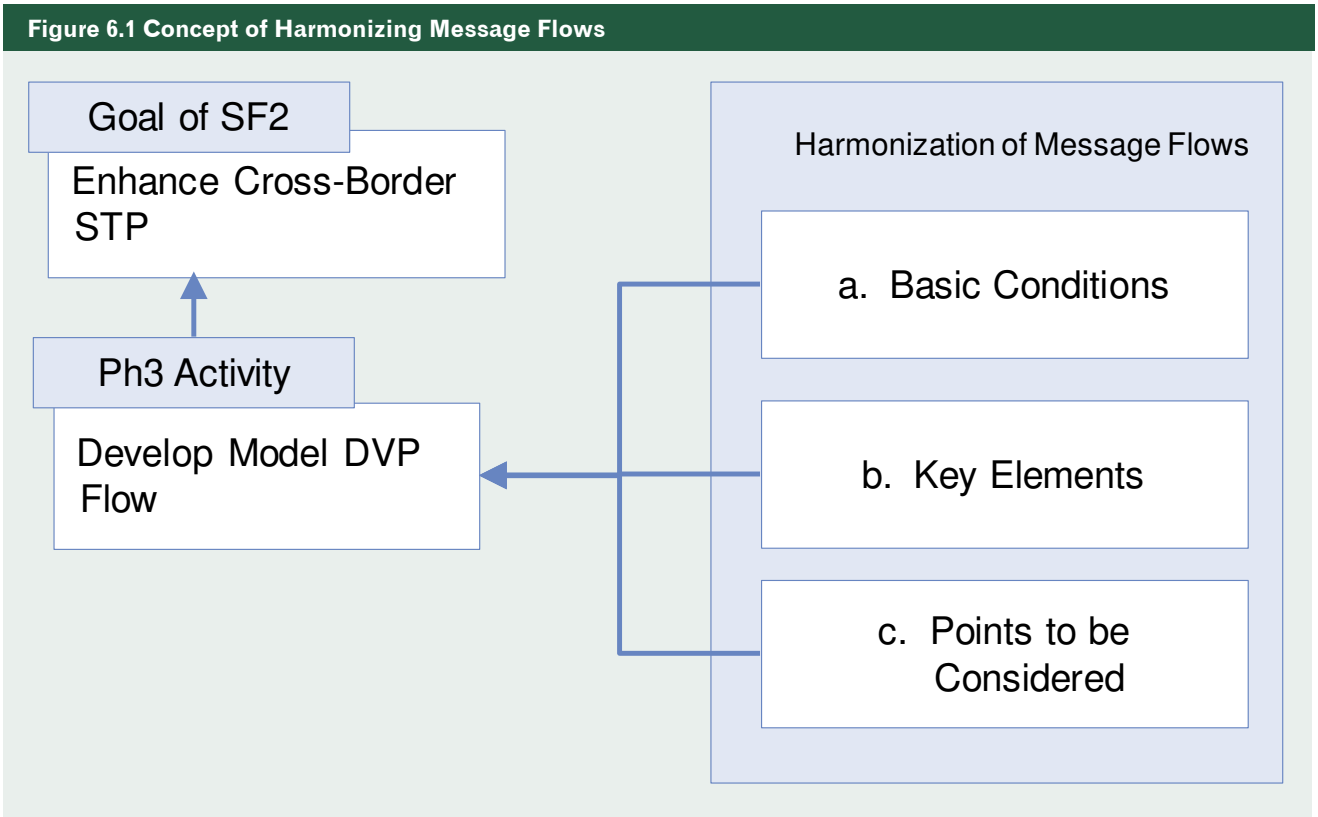
(iii) Central bank money is to be used for cash settlement.

(iv) Data are to be transferred from upstream infrastructure to downstream infrastructure whenever possible.

(v) The results of infrastructure upgrades are to be shared with participants as appropriate.

(v) The quality of data transferred and processed is to be confirmed when the data are entered by different parties.

**Figure 6.1 Concept of Harmonizing Message Flows**



## Initial Candidates for Reference Model DVP Flows

As a starting point of discussion, ADB Consultant for SF2 proposed three types of DVP flows as initial candidates for reference model DVP flows as shown in **Figures 6.2, 6.3, and 6.4**.

In order to discuss the reference model DVP flows, key elements of the flows to be discussed are also proposed as shown earlier in Figure 3.3. The following elements will be scrutinized by ABMF members and experts before discussions:

(i) Transferring settlement instruction from an upstream system to PSMS
   (a) Direct online linkages between upstream systems and PSMS is desired whenever possible. If a broker automates its system and has direct connection with custodians, a custodian can enter settlement instructions into PSMS by adding the necessary information to trade data sent from the broker.

(ii) Forwarding instruction to the sell and buy sides, then affirmed by both sides; enter settlement instruction when there is no transfer from an upstream system
   (a) Settlement instruction data transferred from upstream infrastructure to the PSMS need to be forwarded to the sell side and/or buy side since the party (broker) that entered the data to PSMS is different for the party (custodian) that is supposed to receive the forwarded data. Message items for settlement instructions need to be standardized.
   (b) Maximum limit of time to return affirmation to CSD may be agreed as a market practice; how to return the affirmation, including message items,

**Figure 6.2 Draft Reference Model DVP Flow (Central Matching with PSMS)**

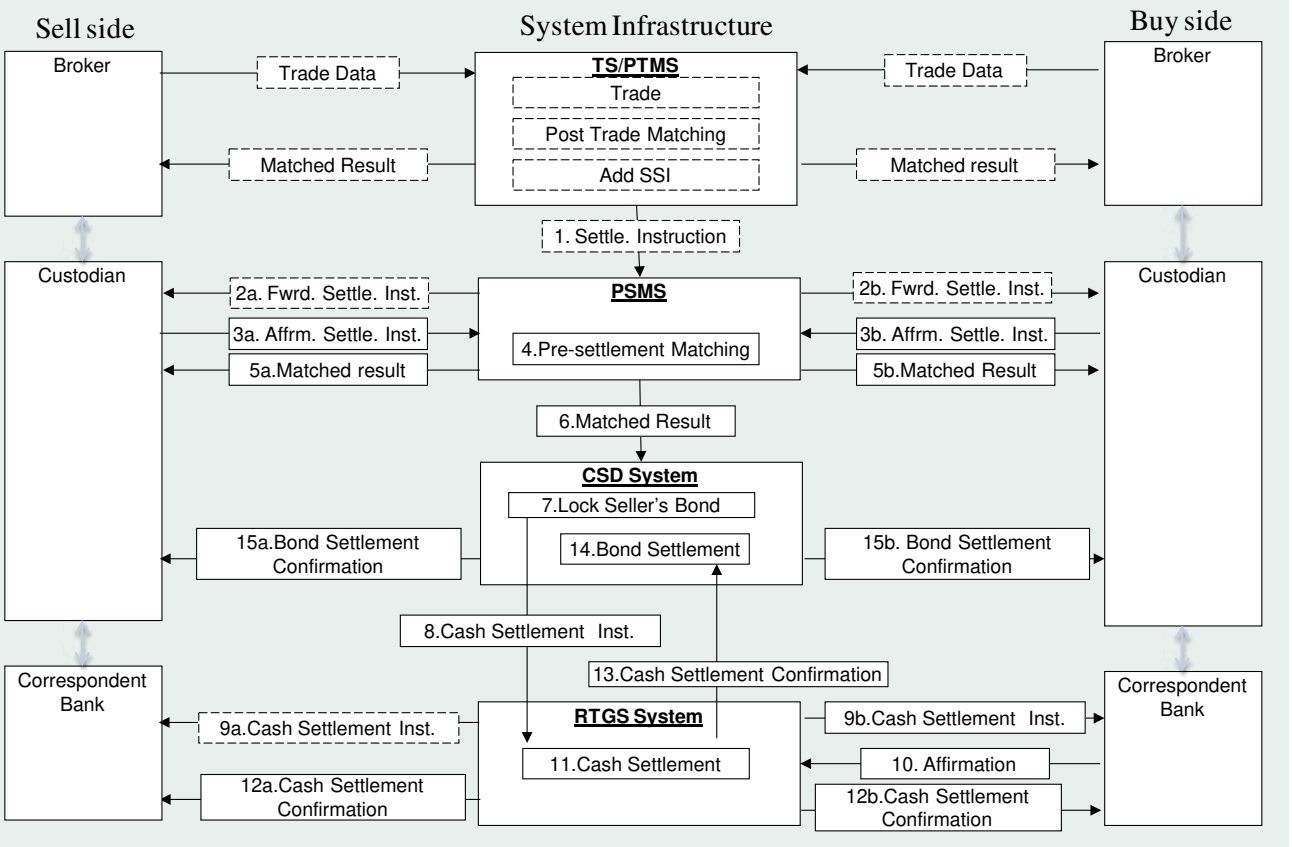
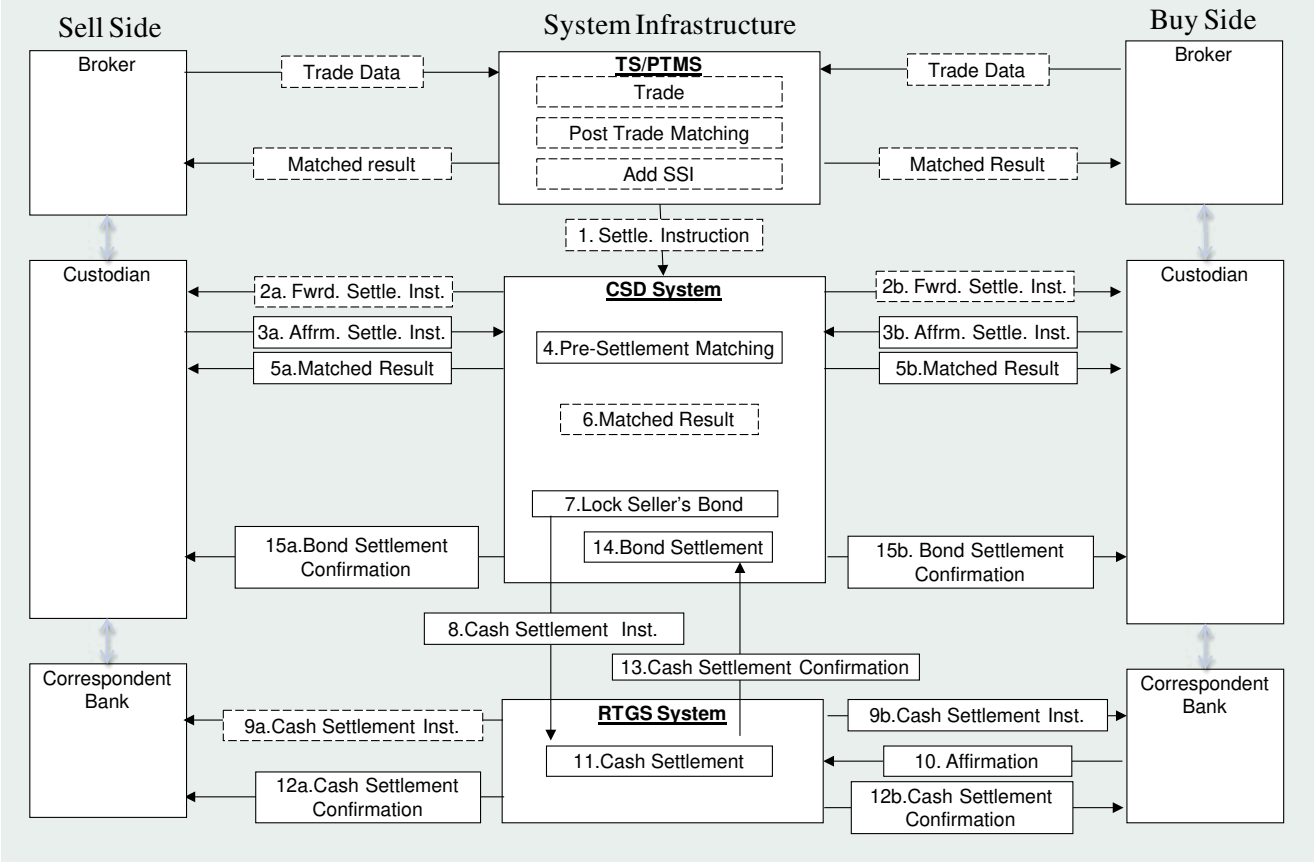


**Figure 6.3 Draft Reference Model DVP Flow (Central Matching without PSMS)**




needs to be harmonized; practices when data are not correct may also need to be harmonized

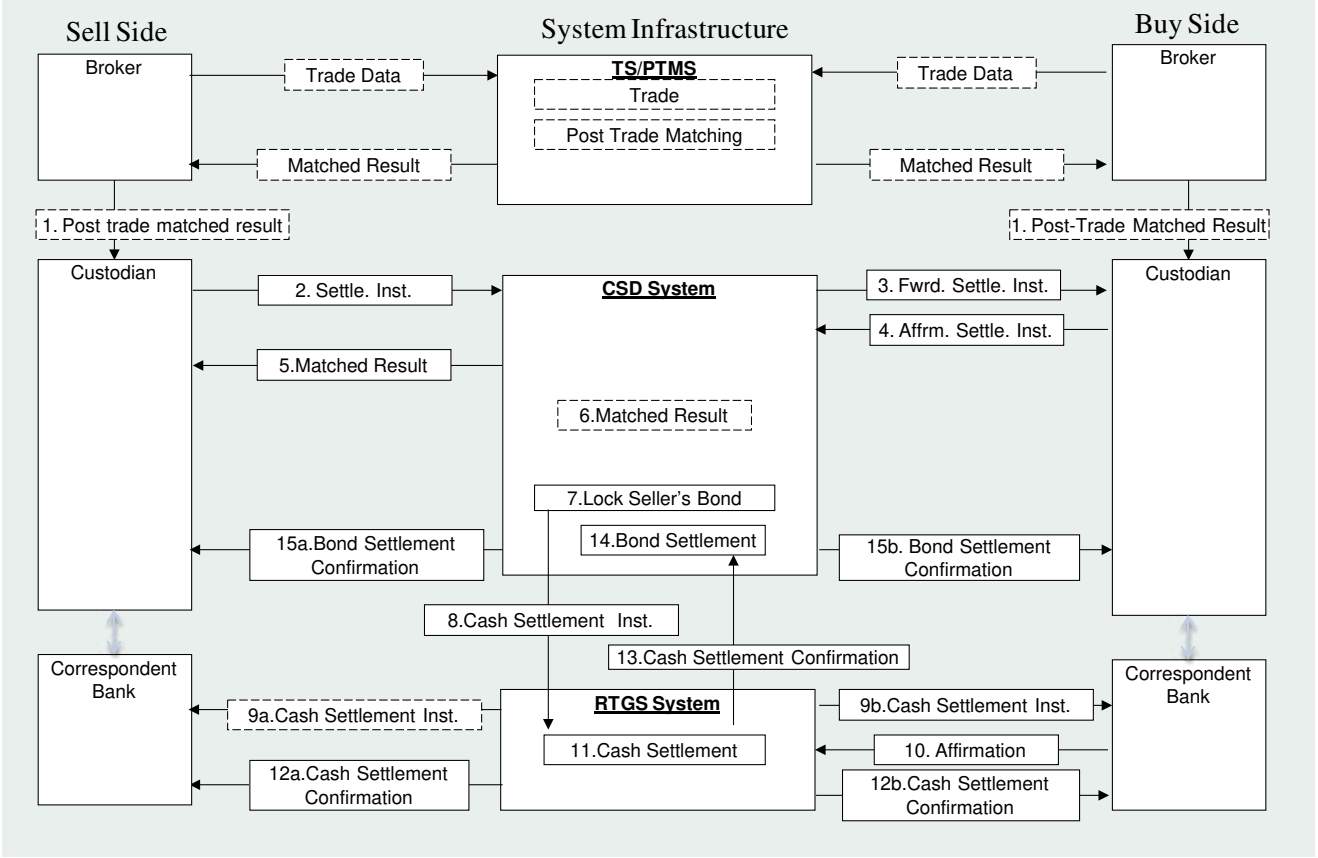
(iii) Matching method and items
- (a) Pre-settlement matching for cross-border transactions need to be completed by settlement data -1 (S-1).
- (b) Message items to be pre-matched need to be discussed. Integrity of data matched needs to be guaranteed. Also, adoption of tolerance matching needs to be discussed and harmonized.
- (c) Status controls such as matched, unmatched, and mismatched need to be harmonized.
- (d) Both central matching and local matching for PSMS need to be accepted.
- (e) Using forward (future-dated) transaction CSD instead of developing PSMS may need to be discussed.

(iv) Settlement Matching Notice to the sell side and buy side
- (a) Message items of settlement matching notice need to be standardized.

(v) Transferring matched results from PSMS to CSD system
- (a) Message items of matched results may need to be standardized when PSMS and CSD are operated in different platforms.
- (b) Processes—such as queuing functions and partial settlement when the balance of a bond in sell side account is insufficient—need to be harmonized.

(vi) Forwarding the result to neither the sell side nor buy side
- (a) Since the participants of PSMS and CSD are the same custodians, it may not be necessary to forward matched results transferred from PSMS to either the sell side or buy side.

**Figure 6.4 Draft Reference Model DVP Flow (Local Matching)**




(vii) Locking bond

(a) The ideal manner of DVP settlement is when bonds and funds are settled simultaneously. But, when CSD and RTGS systems are operated in different platforms, it is not realistic to settle the securities leg and cash leg simultaneously from a technological perspective. Therefore, traded bonds first need to be locked (earmarked) by debiting the seller's account and securing it in a neutral account, then by transferring funds from the buyer's account to the seller's account.

(b) When locking bond of sell side, legal status such as who owns the bond as well as how it is processed such as blocking and earmarking may need to be discussed and harmonized.

(viii) Transferring cash settlement instruction

(a) Message items of cash settlement transactions from CSD to RTGS need to be standardized. Message items for settlement instruction need to be standardized.

(ix) Forwarding the instruction and affirmation from the buy side

(a) Cash settlement instruction transferred from CSD to RTGS need to be forwarded to the buy side for affirmation. How to send back affirmation, including the maximum time limit for affirmation (market practice), needs to be harmonized. Queuing when the balance of the cash account of the buy side is insufficient needs to be provided. Message items for the cash settlement instruction need to be standardized.

(x) Cash settlement (transfer fund from buy side to sell side)
  (a) Settlement processes when the balance is insufficient need to be harmonized.

(xi) Cash settlement confirmation to sell side and buy side
  (a) Whether the cash settlement confirmation is necessary or not needs to be decided.
  (b) Message items for settlement instructions need to be standardized. The latest cash balance needs to be included in the message items.

(xii) Cash settlement confirmation to CSD system
  (a) Message items for settlement instructions need to be standardized.

(xiii) Bond settlement
  (a) After completing cash settlement, a locked bond is to be credited to the buy side account. DVP settlement is to become final.

(xiv) Bond settlement confirmation
  (a) A completing notice of DVP settlement will be sent to the sell side and buy side. Message items for settlement confirmation need to be standardized.

### Scope of Harmonizing Message Flows

The trade and settlement of bonds involves market infrastructures such as TS, PTMS, CCP, PSMS, CSD, and RTGS. As a first step, the harmonization of flows from PSMS to settlement (both bond and cash settlement) will be discussed.

## Standardizing Message Items for ISO20022 Migrations

Fit and gap analyses conducted during Phase2 revealed that there are significant differences in the definitions and handling of message items for settlement instruction and confirmation messages in ASEAN+3. Considering the results of the fit and gap analyses, each economy is expected to use the opportunity of reconstructing its market infrastructures to ensure compliance with international standards. In such cases, ISO20022 may be adopted as a message standard. Essential messages consisting of the model DVP flow will be identified. Message items comprising the messages will be standardized and this standardization of message items will be a good reference for planning ISO20022 migration. **Figure 6.5** presents target messages to discuss standardization of the message items.

(i) Settlement instruction messages need to be standardized, including message items and communication protocols. Settlement instructions, both from upstream infrastructures such as PTMS and TS, as well as the instructions from participants (buy side and sell side), will be discussed.

(ii) The message informing matching results from PSMS to CSD participants (sell side and buy side) needs to be standardized.

(iii) Cash settlement instructions from buy side to RTGS need to be standardized, including message items.

(iv) Cash settlement confirmation from RTGS to participants (sell side and buy side) will be standardized.

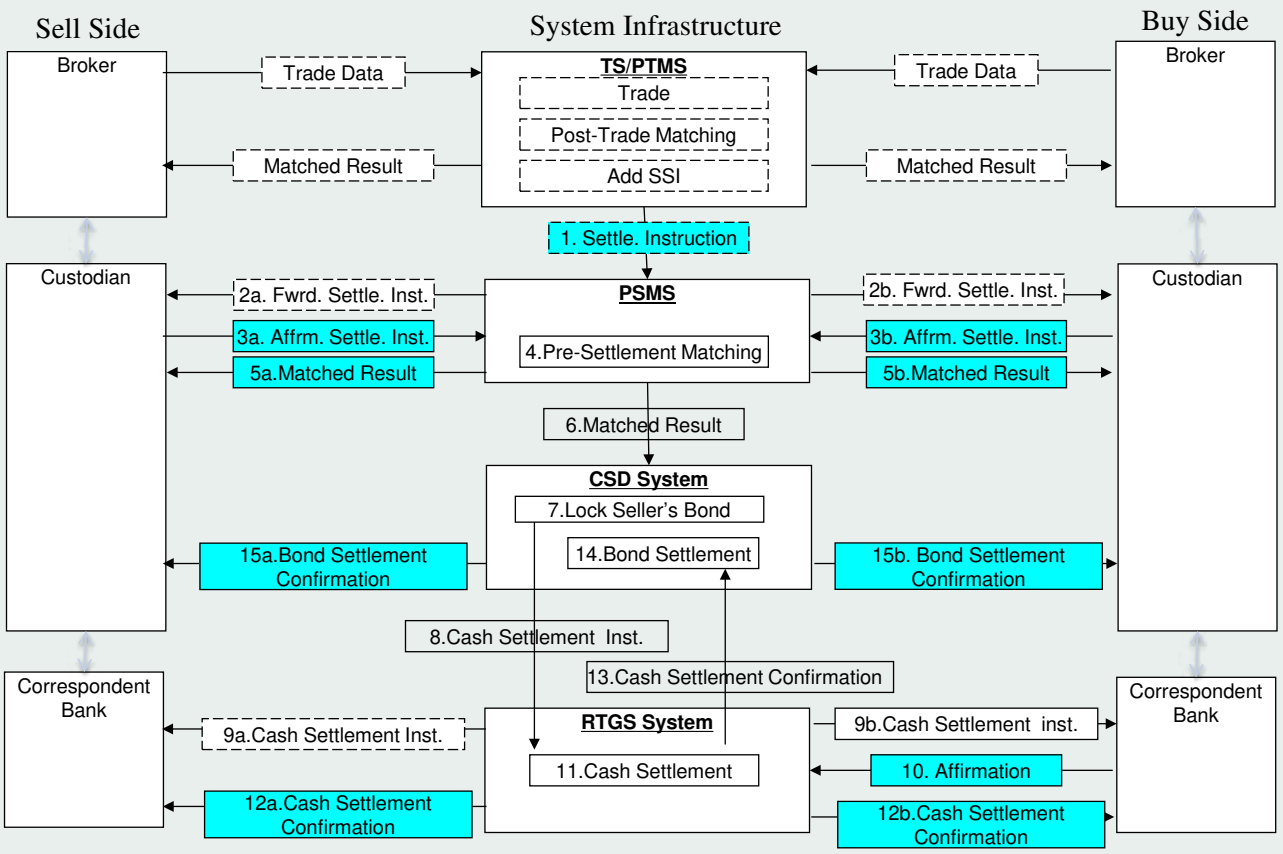
(v) Bond settlement confirmation messages will be standardized.

## ISIN

Establishing common rules on ISIN as well as utilizing ISIN as unique numbering is one of the most important issues for cross-border STP. Considering the key observations of the Phase2 report, the following issues need to be addressed:

(i) ISIN is not widely used as a standard in ASEAN+3 economies.

**Figure 6.5 Target Messages to Discuss Standardization of Message Items**




(ii) There remain differences in numbering convention and the period of disseminating the ISIN across ASEAN+3 economies. For example, it takes a number of days in some economies and only 1 day in others.

(iii) There are two different ISINs for a single domestic securities number in an economy.

ABMF SF2 may need to cooperate with NNAs in ASEAN+3 and possibly ANNA. **Table 6.1** presents the current status of ISIN operations in ASEAN+3.

## Harmonization of Market Practices

Harmonization of market practices is an important issue in the promotion of cross-border STP in ASEAN+3. ABMF members and experts are expected to propose market practices to be discussed in the context of standardization.

Cooperation with SROs and other related organizations should be explored. Furthermore, best practices as proposed by organizations such as the International Securities Association for Institutional Trade Communication (ISITC) and SMPG may need to be reviewed and utilized.

**Table 6.1 Securities Numbering (ISIN: International Securities Identification Number)**

| | National Numbering Agency (NNA) | Allocation and availability of ISIN |
|---|---|---|
| CN | China Securities Regulatory Commission | (to be confirmed) |
| HK | Hong Kong Exchanges and Clearing Ltd. | (to be confirmed) |
| ID | Indonesian Central Securities Depository (KSEI) | Yes |
| JP | Tokyo Stock Exchange | Yes |
| KR | Korea Exchange | (to be confirmed) |
| MY | Bursa Malaysia | (to be confirmed) |
| PH | Philippine Stock Exchange, Inc. | (to be confirmed) |
| SG | Singapore Exchange Limited | (to be confirmed) |
| TH | Thailand Securities Depository | Yes |
| VN | Vietnam Securities Depository | No |

Note: National Numbering Agency (NNA) should allocate ISIN within 24 hours following the request and making the ISIN available to users at the same time in each economy. Proprietary securities number is generally allocated by each CSD.

## Study on Cross-Border Collateral and Repo Services

Cross-border collateral and repo are common, important services with respect to cross-border STP. Cross-border collateral and repo services that are currently available in ASEAN+3 markets and possible future services directly linking bond market infrastructures will be studied.

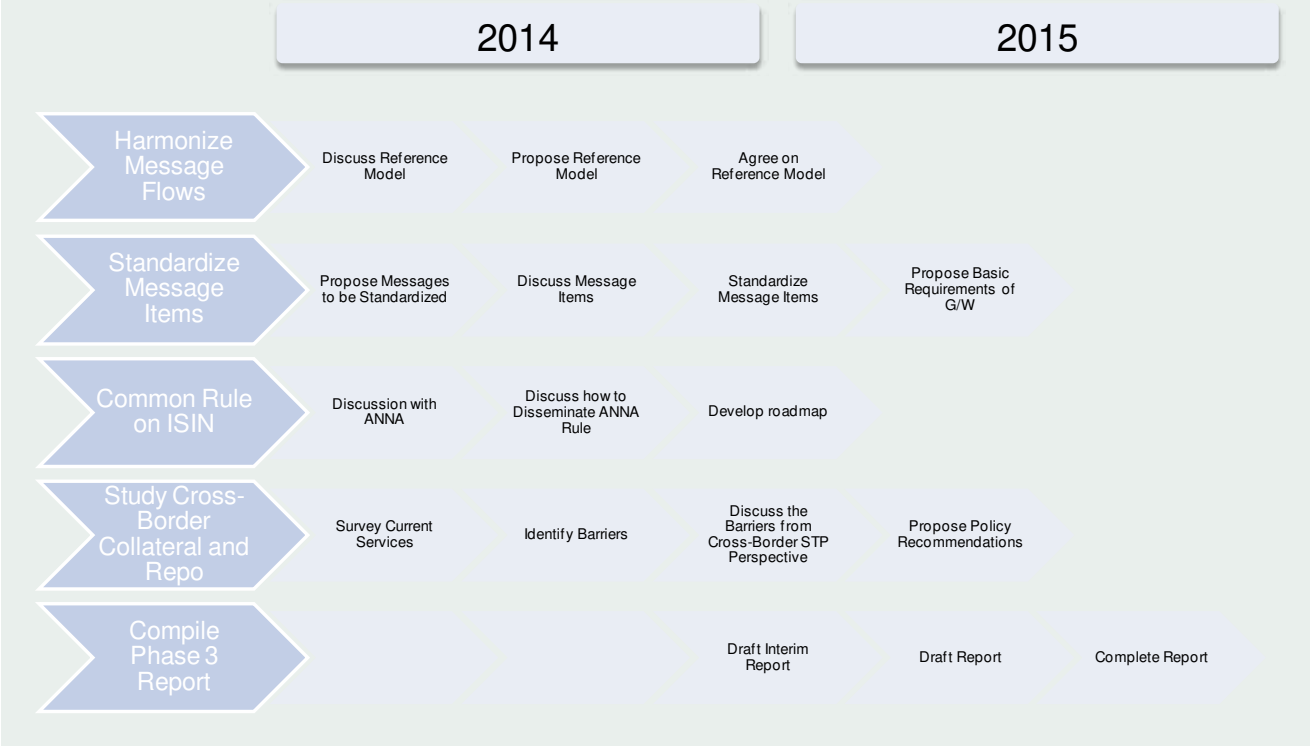
Current market practices, related legal and regulatory aspects, and infrastructures will be studied with an aim to identify best practices and provide policy recommendations. The main services provided by the private sector may need to be surveyed; then, barriers to the implementation of these services, if any, may be identified.

Cross-border collateral and repo services linking CSD and RTGS systems will also be studied, as well as interest payment flows related to cross-border collateral and repo services linking CSD and RTGS systems and different roles and functions of PAs.

## Roadmap and Future Work Plan

For the next phase of ABMF activities, ABMF SF2 has proposed a Roadmap and Work Plan, which has been approved by ABMI TF3 members. The Roadmap comprises:

**Figure 6.6 Possible Roadmap of Phase 3**




- **Proposals for the Harmonization of ASEAN+3 Bond Markets, 2014–15**
  - — proposal on a reference model of DVP flows
  - — proposal on ISO 20022 adoption of message items
  - — proposal on harmonizing market practices wherever possible
  - — proposal on cross-border collateral and repo services
- **Implementation of International Standards, post-2015**
  - — Upgrade or reconstruct bond market infrastructures in accordance with international standards (e.g., ISO 20022) in some economies
  - — Progress in the harmonization of market practices (e.g., settlement cycle)
  - — Progress in the discussion of linkages of bond market infrastructures in the region

**Figure 6.6** presents a schedule of potential Phase3 activates in 2014–15.

# Conclusion

With a long-term vision of enhancing STP in the region, ABMF SF2 has continued working on identifying bond transaction flows and collecting related information and data. Through Phase1 and Phase2 activities, comprehensive information on DVP transaction flows, interest payment and redemption flows, messaging format and items (e.g., numbering and coding), and market practices were collected. In addition, fit and gap analysis was conducted on typical transaction flows to see the differences between current flows and international standards.

The information and data accumulated through Phase1 and Phase2 activities will be utilized as a practical reference in pursuing the harmonization of transaction flows and market practices. As an immediate output of the collected information and the fit and gap analysis, ABMF SF2 members identified policy recommendations in the area of bond market infrastructures, DVP flows, interest payment flows, message standards, numbering and coding, market practices and other issues, LCY liquidity, and cross-border STP. ABMF SF2 members hope the suggested recommendations will serve as a reference for the relevant policy authorities in designing and implementation bond market reforms. **Figure 7.1** presents a possible future state of bond market infrastructures in ASEAN+3.

As a reference, an outline of activities under ABMF SF2 Phase1 and Phase2, and proposed activities under Phase3, are given in **Figure 7.2**.

**Figure 7.1 Possible Future Image of Bond Markets in ASEAN+3**

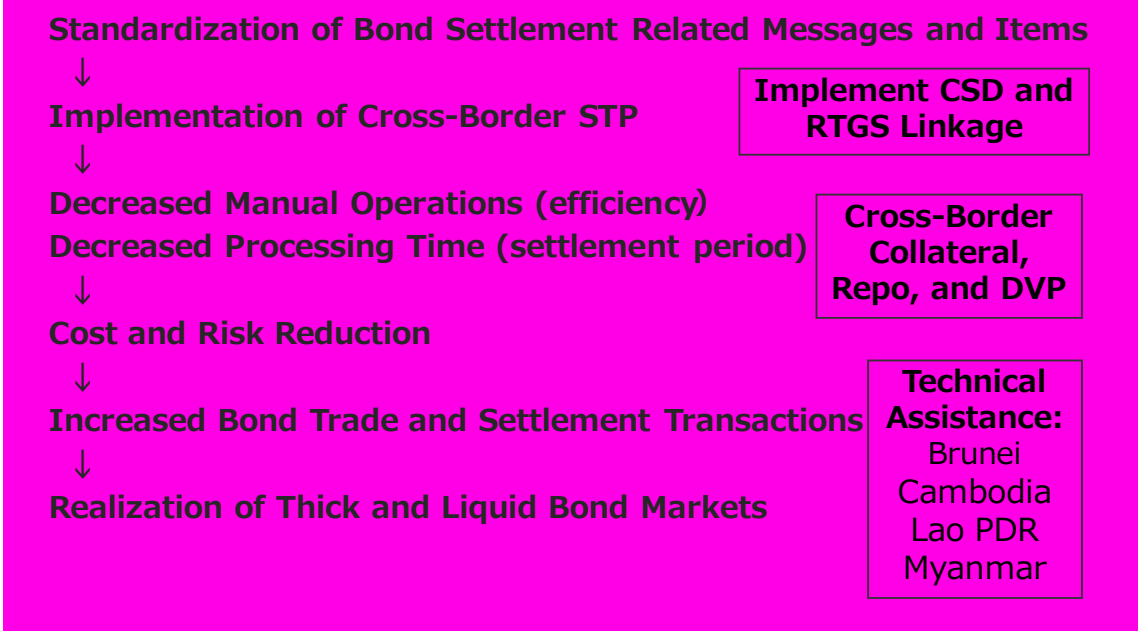
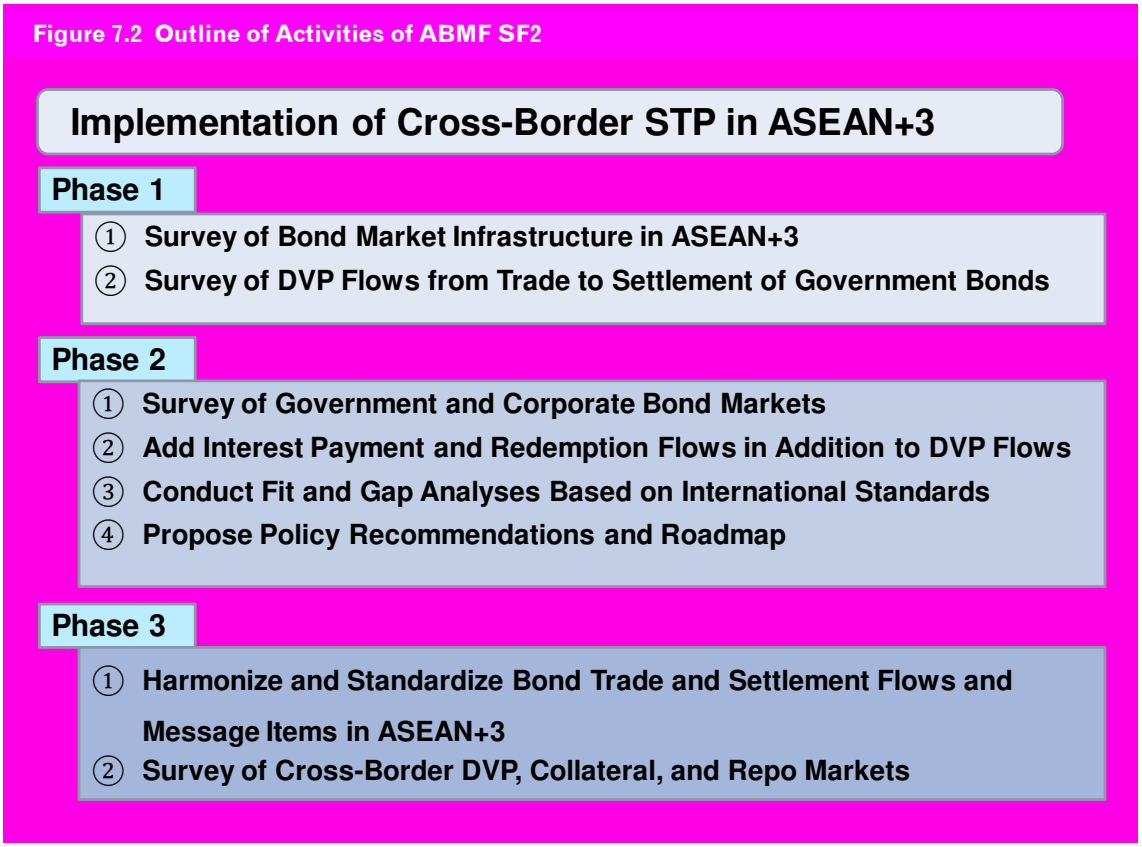



**Figure 7.2 Outline of Activities of ABMF SF2**



# Appendixes

## Appendix 1: Members and Experts including Observers and ADB Secretariat

### Membership and Participants

ABMF consists of (i) national members, (ii) national experts, and (iii) international experts. Members and experts were selected based on issues adopted by TF3, and must have extensive knowledge of and expertise in the relevant issues. Members and experts were selected from among those actively involved in bond markets in the region including, but not limited to

(i) financial industry associations such as bankers' associations, securities dealers' associations, and SROs;

(ii) institutional investors such as pension services, fund managers, and insurance companies;

(iii) commercial banks and brokers;

(iv) custodians and CSDs;

(v) rating agencies;

(vi) financial services providers, including information technology vendors;

(vii) financial regulators, including securities commissions;

(viii) central banks;

(ix) law firms; and

(x) academics.

#### National members

The national members (NM) were nominated by each member country of TF3. In principle, the number of national members was limited to one or two persons from each country for effective communication. National members represented the opinions of their respective home markets, as opposed to the opinions of the institution to which they belonged. National members were encouraged to form a preparatory working group within their respective markets.

#### National experts

With the consent of other national members and the endorsement of TF3, a national member nominated national experts (NE) as participants.

The national experts provided insight on specific issues related to their respective markets.

### International experts

With the consent of other national members and the endorsement of TF3, a national member nominated international experts as participants in ABMF. The international experts contributed to discussions related to cross-border transactions in the region.

### ASEAN+3 Officials

ASEAN+3 officials participated in all ABMF meetings as observers. The chairpersons of ABMF invited ASEAN+3 officials from finance ministries, regulatory agencies, security commissions, central banks, and debt management offices and/or relevant sections for issuing public debt.

### ADB

ADB contributed to ABMF as the Secretariat of the forum.

## Member and Expert List

**Member and Experts List**

| COUNTRY/ ECONOMY | MEMBERSHIP CATEGORY | ORGANIZATION |
|---|---|---|
| BN | NM | Autoriti Monetari Brunei Darussalam (AMBD) |
| CN | NE | China Central Depository and Clearing Co. Ltd. (CCDC) |
| | NE | China Foreign Exchange Trade System / National Interbank Funding Center (CFETS) |
| | NE | China Securities Depository and Clearing Corporation Limited Shanghai (CSDCC) |
| | NM | China Security Regulatory Commission (CSRC) |
| | NM | Hong Kong Monetary Authority (HKMA) |
| | NM | National Association of Financial Market Institutional Investors (NAFMII) |
| | NE | Shanghai Clearing House (SHCH) |
| ID | NM | Financial Services Authority, Ministry of Finance (OJK) |
| | NE | Indonesian Central Securities Depository (KSEI) |
| | NE | Indonesia Clearing and Guarantee Corporation (KPEI) |
| | NE | Indonesia Stock Exchange (IDX) |
| | NM | Ministry of Finance, Indonesia |
| JP | NM | Japan Securities Depository Center, Inc. (JASDEC) |
| | NE | Mizuho Corporate Bank, Ltd. |
| KH | NM | Securities & Exchange Commission of Cambodia (SECC) |
| KR | NE | Korea Exchange (KRX) |
| | NM | Korea Securities Depository (KSD) |
| | NE | KOSCOM |
| LA | NM | Ministry of Finance |
| | NM | Securities and Exchange Commission Office, Bank of the Lao PDR |
| MY | NM | Bond Pricing Agency Malaysia (BPAM) |
| MM | NM | Central Bank of Myanmar (CBM) |
| PH | NM | Bankers Association of the Philippines (BAP) |
| | NE | OMGEO |
| | NM | Philippine Dealing System Holdings Corp/PDS Group (PDS) |
| SG | NM | Singapore Exchange (SGX) |
| TH | NM | The Stock Exchange of Thailand (SET) |
| VN | NM | Hanoi Stock Exchange (HNX) |
| | NM | Vietnam Securities Depository (VSD) |
| International Experts | | BNP Paribas |
| | | Clearstream |
| | | Citibank |
| | | Deutsche Bank AG |
| | | Euroclear |
| | | HSBC |
| | | J.P. Morgan |
| | | State Street Bank and Trust |
| | | State Street Global Advisor |
| | | SWIFT |
| | | The Bank of Tokyo Mitsubishi UFJ Ltd (BOTM-UFJ) |
| | | The Bank of New York Mellon (BNY Mellon) |

## International Experts

| ECONOMY | MEMBERSHIP CATEGORY | ORGANIZATION |
|---|---|---|
| International Experts | | BNP Paribas |
| | | Clearstream |
| | | Citibank |
| | | Deutsche Bank AG |
| | | Euroclear |
| | | HSBC |
| | | J.P. Morgan |
| | | State Street Bank and Trust |
| | | State Street Global Advisors |
| | | SWIFT |
| | | The Bank of Tokyo Mitsubishi UFJ Ltd. |

## Observers

| Economy | Institution | Economy | Institution |
|---|---|---|---|
| BN | Ministry of Finance | MY | Ministry of Finance |
| KH | Ministry of Economy and Finance | MY | Bank Negara Malaysia |
| KH | National Bank of Cambodia | MY | Securities Commission Malaysia |
| CN | Ministry of Finance | PH | Department of Finance |
| ID | Bank Indonesia | PH | Bangko Sentral ng Pilipinas |
| JP | Ministry of Finance | SG | Ministry of Finance |
| JP | Bank of Japan | SG | Monetary Authority of Singapore |
| KH | Ministry of Economy and Finance | TH | Ministry of Finance |
| KH | National Bank of Cambodia | TH | Bank of Thailand |
| KR | Ministry of Strategy and Finance | VN | Ministry of Finance of Vietnam |
| KR | Bank of Korea | VN | State Bank of Vietnam |

# Appendix 2: Trade Matching and Settlement Matching

Matching is classified in **Figure A1** below. Mainly, matching may take two forms, trade matching and settlement matching.

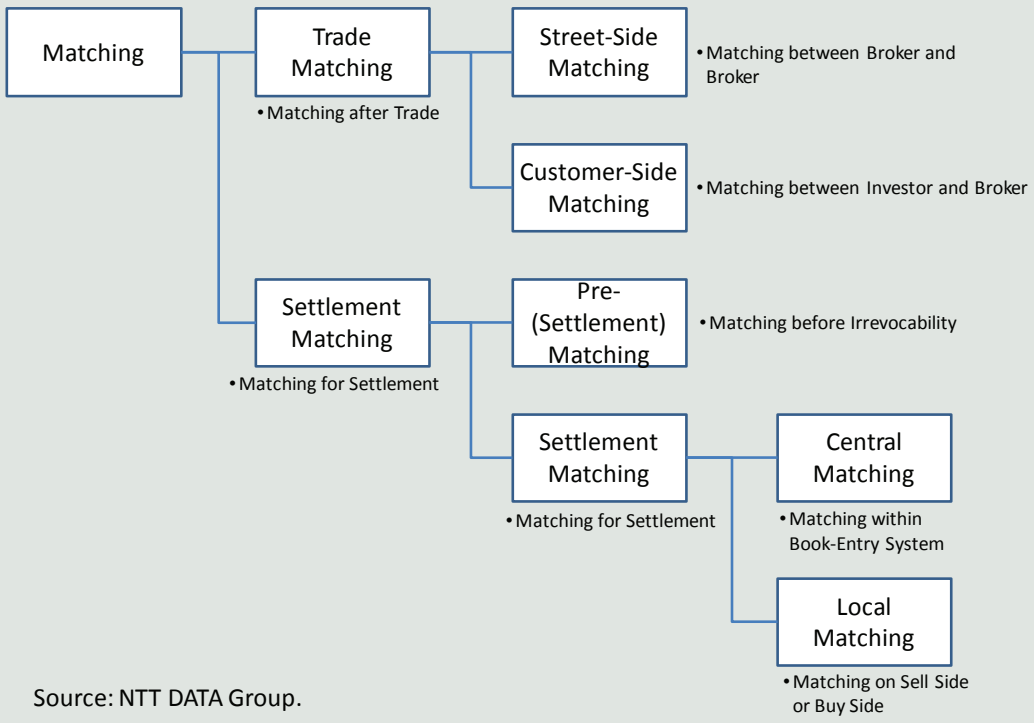
**(i) Trade matching (street-side matching and customer-side matching)**

There are two types of trade matching **(Figure A2).** Street-side matching is matching between counterparties. On the other hand, customer-side matching is matching between the execution agent (broker) and the order placing firm (investor).

In the former pattern, details of the trade (quantity; bond number and name, price, and fees) are compared between the counterparties to ensure that there is no misunderstanding of the terms of the trade. This should be performed as soon as the trade is executed, and, in any event, before the end of the business day. With automated trading systems (e.g., exchange systems or electronic OTC systems) matching is done at the time of trade, so there is no need for subsequent trade matching. However, many bond trades are done by telephone.

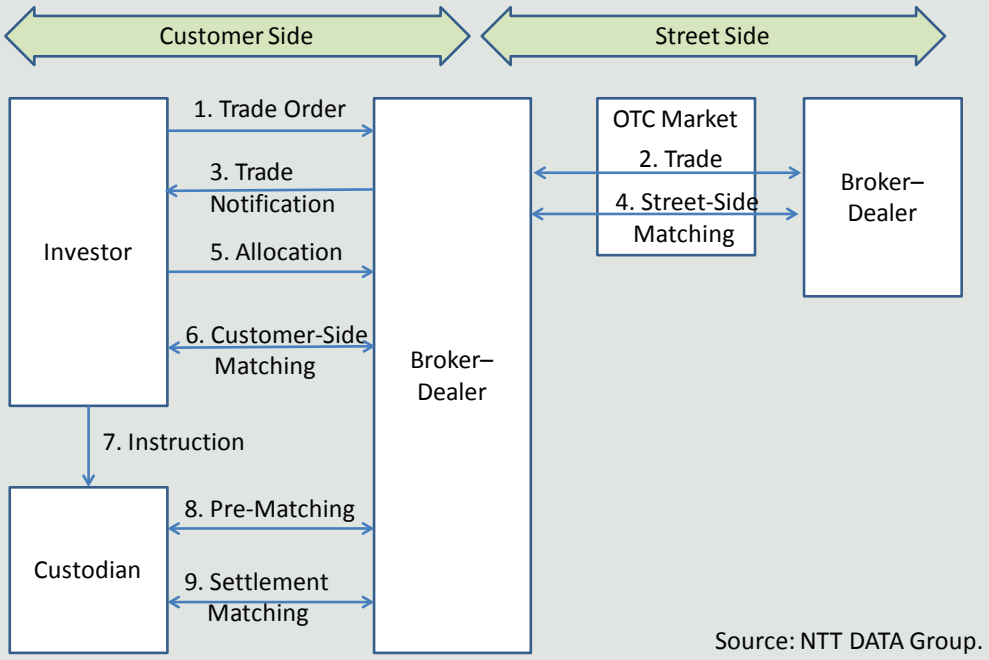
In the second pattern, an order is placed to the execution agent via Bloomberg terminal or phone. After execution, a trade confirmation is sent via fax, email, SWIFT, or Omgeo CTM. This would include the basic detail of the execution. The order placing firm (investment firm) checks the confirmation and calls back to execution agent if there are any differences. If there is no difference, the investor allocates the bond trade to various funds. Afterward, the investor sends allocated trade data to the execution agent, and the execution agent

**Figure A1. Matching Classification**




Source: NTT DATA Group.

**Figure A.2 Business Process and Matching**




Source: NTT DATA Group.

checks the data. This process is referred to as customer-side matching. In some economies, customer-side matching is automated (e.g., PSMS is used in Japan).

**(ii) Settlement matching (pre-matching)**

There are some Standing Settlement Instructions (SSI) databases that convert trade data into settlement instructions in ASEAN+3 economies.[12] If there is no database, the sell side and/or buy side enter some information into the allocated and agreed trade data in order to make settlement instruction. In some markets, pre-matching processes are introduced. The pre-matching process is a process of comparing settlement instruction between counterparties before irrevocable bond settlement. The advantages of introducing pre-matching processes are to reduce settlement failure and to decrease the workload of settlement agents (e.g., local custodian). Some economies are equipped with a pre-settlement matching system, and other economies establish market practices that the sell side and buy side input settlement instruction into book-entry system a day before settlement day to avoid settlement failure. However, in many economies, there is no system infrastructure for pre-matching.

**(iii) Settlement matching**

Settlement matching is matching between counterparties prior to settlement, to ensure they agree on the terms of transaction. The process of matching is categorized into two types, central matching and local matching.

- **Central matching.** Both market participants (sell side and buy side) or trading systems send the trade data to the CSD. Then, the CSD matches the data and sends back the matching confirmation to the seller and buyer.
- **Local matching.** One side of the bond settlement, either a seller or a buyer, inputs the trade data into the CSD, and the CSD forwards the data to the counterparty (the other seller or buyer). The counterparty checks the data and sends back affirmation to the CSD if the data is deemed as acceptable.

[12] Omgeo and JASDEC provide an SSI database for bond settlement.

# Appendix 3 References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ASEAN Central Banks' Working Committee on Payment and Settlement Systems (WC-PSS) - Strategic Report to the ASEAN Central Bank Governors Meeting (April 2011)

ISO 20022 Customer-to-Bank Message Usage Guide Customer Credit Transfer Initiation, Customer Direct Debit Initiation, and Payment Status Report Version 3.0 (January 2009)

Executives' Meeting of East Asia-Pacific Central Banks – PAYMENT , CLEARING AND SETTLEMENT SYSTEMS IN EMEAP ECONOMIES (August 2012)

# Appendix 4 Information Sessions of ABMF SF2

**7th ABMF SF2 on 9 February 2011 in Hong Kong**

- *RSI Options given by GoE Report.* Presentation by Mr. Shinji Kawai, ADB Secretariat.
- *Pan-Asian CSD Alliance Pilot Platform and Add-on Services.* Presentation by Mr. Shu-Pui Li, Hong Kong Monetary Authority.
- *Cross-border Collateral Management Working with Market Infrastructures to Enhance Global Liquidity.* Presentation by Mr. Masayuki Tagai, J.P. Morgan
- *Increasing the Number of Settlement Currencies.* Mr. Lynn Mathews, CLS
- *Valuation: the Role and Importance in Emerging Bond Market,* Presentation by Mr. Mohd Shaharul Zain, Bond Pricing Agency Malaysia

**8th ABMF SF2 on 18 April 2012 in Manila, Philippines**

- *Database for Managing Standards and Market Practice, MyStandards, How Can It Help ABMF,* Presentation by Mr. Alexander Kech, SWIFT
- *Direction and Implementation of Legal Entity Identifier (LEI).* Presentation by Mr. Taketoshi Mori, Bank of Tokyo-Mitsubishi UFJ.
- *Supplementary Information on LEI for 8th ASEAN+3 Bond Market Forum (ABMF) Meeting,* Presentation by Ms. Rebecca Terner, Asia Securities Industries and Financial Markets Association (ASIFMA).

**9th ABMF SF2 on 5 September 2012 in Seoul, Korea**

- *CCP Clearing Service for OTC Derivatives in Korea,* Presentation by Dr. Sukho Jung.
- *Bond Market and Bond Information in Korea,* Presentation by Kwon Su Ju, Korea Securities Depository.
- *Update of Legal Entity Identifier (LEI),* Presentation by Mr. Taketoshi Mori, Bank of Tokyo-Mitsubishi UFJ.

*LEI Initiative and Implementation of the CFTC Compliant Interim Identifier (CICI),* Presentation by Ms. Rebecca Terner, Asia Securities Industries and Financial Markets Association (ASIFMA).

**10th ABMF SF2 on 22 November 2012 in Bangkok, Thailand**

- *Progress Report on Reassessing Business Feasibility of RSI Options,* Presentation by Dr. Inseok Shin.

**11th ABMF SF2 on 6 February 2013 in Singapore**

- *Collateral Management,* Presentation by Mr. Pierre Mengal, Citi Bank.
- *The New Normal for the ASEAN Securities Services Industries.* Presentation by Mr. Mrugank Paranjape, Deutsche Bank.
- *Function of CCP.* Presentation by Mr. Taketoshi Mori, Bank of Tokyo-Mitsubishi UFJ.
- *Foreign Issuers in LCY Bond Market in Malaysia and Thailand.* Presentation by Mr. Mohd Shaharul Zain, BPAM & Thai BMA
- *AsiaBondsOnline (ABO) – current development and cooperation with ABMF.* Presentation by Mr. Thiam Hee Ng, Asian Development Bank.

**12th ABMF SF2 on 24 April 2013 in Jakarta, Indonesia**

- *ISO20022 – Adoption in Asia-Pacific and the rest of the world.* Presentation by Mr. Alexander Kech and Ms. Mireia Guisado Parra, SWIFT.

**13th ABMF SF2 on 25 and 26 July 2013 in Tokyo, Japan**

- *Key Note Speech by* Mr. Taro Aso, *Deputy Prime Minister, Japan*
- *Speech on Japan Exchange Group's Contribution to Asia's Economic Development by* Mr. Atsushi Saito, *Japan Exchange Group*
- *Speech on Activating Tokyo Financial and Capital Market by* Mr. Yasuhiro Sato, *Mizuho Financial Group*
- *Approach to Asian Bond Market –Focusing on TOKYO PRO-BOND Market by* Mr. Koji Ito, *Tokyo Stock Exchange*
- *How have Japanese bond investors reached to Abenomics by* Mr. Matsuzaki, *Nomura Securities*
- *Trade/Settlement Matching and Implementation Plan of ISO20022 by* Mr. Jun Sugie, *Japan Securities Depository Center*
- *Importance of Developing Institutional Investors in Asia Region by* Mr. Satoshi Shimizu, *The Japan Research Institute*

**14th ABMF SF2 on 6 November 2013 in Jeju, Korea**

- *Cross-border collateral services for financial collateral by* Mr. Erwin Nierop, *Asian Development Bank*
- *Challenges in developing Cross-border collateral in the region by* Mr. Hiroshi Kawagoe, *Sumitomo Mitsui Banking Corporation*
- *Discussion on T2S and implications for Asia by* Mr. Jean-Michel Godeffroy, *European Central Bank*
- *Role and function of ANNA and ISIN by* Mr. Alton Chan, Ms. Vivian Kwan, *Clearstream*
- *The experience of Japan on securities numbering by* Mr. Yuji Sato, *JASDEC*

# Appendix 5 Respondent Institutions During Sub-Forum2 Country Visits

**People's Republic of China (the PRC)**
Bank of China
China Central Depository & Clearing
China Construction Bank
China Foreign Exchange Trade System
China Securities Depository and Clearing Corporation
China Securities Regulatory Commission
Citibank
Deutsche Bank
HSBC
National Association of Financial Market Institutional Investors
People's Bank of China
Shanghai Clearing House
Shanghai Stock Exchange
Zhong Lun Law Firm

**Hong Kong Special Administrative Region (Hong Kong, China)**
BNP Paribas Securities Services
Hong Kong Exchanges and Clearing Limited
Hong Kong Investment Funds Association
Hong Kong Monetary Authority
J.P. Morgan
Slaughter and May
State Street Bank and Trust Company
HSBC

**Republic of Indonesia (Indonesia)**
Bank Indonesia
BAPEPAM-LK
Citibank
Deutsche Bank
Indonesia Bond Pricing Agency
Indonesia Stock Exchange
Ministry of Finance of the Republic of Indonesia
Mochtar Karuwin Komar
PT Bahana Securities
PT Kliring Penjaminan Efek Indonesia
PT Kustodian Sentral Efek Indonesia
PT. Schroders Investment Management Indonesia
HSBC

**Japan (Japan)**
Bank of Tokyo Mitsubishi UFJ
Barclays Securities
Credit Suisse
Daiwa Securities
Financial Agency
Japan Bond Trading
Japan Securities Dealers Association
Japan Securities Depository Center
J.P. Morgan
Mitsubishi UFJMS Securities
Mizuho Corporate Banking
Mizuho Securities
Mori Hamada & Matsumoto
Nagashima Ohno & Tsunematsu
Nomura Securities Co. Ltd
NTT Data Group
Omgeo
Sumitomo Mitsui Banking Corporation
SWIFT
The Tokyo Tanshi
Tokyo Stock Exchange Group
Waseda University

**Kingdom of Cambodia (Cambodia)**
Ministry of Economy and Finance
Securities and Exchange Commission of Cambodia
National Bank of Cambodia
Tong Yang Securities
HBS Law Firm
Cambodia Securities Exchange
Securities and Exchange Commission in Cambodia

**Republic of Korea (the Republic of Korea)**
Citibank
Deutsche Bank
Financial Services Commission
Financial Supervisory Service
HSBC
J.P. Morgan
Korea Exchange
Korea Financial Association
Korea Securities Depository
Lee & Ko

**Lao People's Democratic Republic (Lao PDR)**
Ministry of Finance
Bank of Lao PDR
Lao Securities Commission Office
Lao Stock Exchange
BCEL-KT Securities Company
BCEL Bank
LS Horizon

**Republic of the Union of Myanmar (Myanmar)**
Central Bank of Myanmar
Market Visit to Ministry of Finance
Myanmar Economic Bank
Myanmar Securities Exchange Centre

**Malaysia (Malaysia)**
AM Investment Bank Group
Bank of Tokyo Mitsubishi UFJ
Bond Pricing Agency Malaysia
CIMB
CIMB-Principal Asset Management
Deutsche Bank
Deutsche Trustees
HSBC
Rahmat Lim & Partners
Securities Commission Malaysia

**Republic of the Philippines (the Philippines)**
Bangko Sentral ng Pilipinas
Bankers Association of the Philippines
Bureau of Treasury
Deutsche Bank
HSBC
ING Bank N.V.
OMGEO
Philippines Dealing System Holding
Securities and Exchange Commission
SyCip Salazar Hernandez & Gatmaitan

**Republic of Singapore (Singapore)**
Allen & Gledhill LLP
Central Depository
Clearstream
DBS Bank Ltd
Fullerton Fund Management
HSBC
Monetary Authority of Singapore
Nikko AM Asia Limited
Omgeo
Singapore Exchange
State Street Global Advisors
SWIFT

**Kingdom of Thailand (Thailand)**
Bank of Thailand
BBL Asset Management
HSBC
Securities and Exchange Commission
Siam Premier International Law Office Limited
Standard Chartered Bank
Stock Exchange of Thailand
Thai Bond Market Association
Thailand Clearing House
Thailand Securities Depository

**Socialist Republic of Viet Nam (Viet Nam)**
Bank for Investment and Development of Viet Nam
Citibank
Hanoi Stock Exchange
Ho Chi Minh City Securities Corporation
HSBC
State Securities Commission of Viet Nam
The State Bank of Viet Nam
Viet Nam Bond Market Association
Viet Nam International Law Firm
Viet Nam Securities Depository

# Appendix 6 Abbreviations

| | | |
|---|---|---|
| ABMF | – | ASEAN+3 Bond Market Forum |
| ABMI | – | Asian Bond Markets Initiative |
| ABS | – | asset-backed securities |
| ACS | – | alternate cash settlement |
| ADB | – | Asian Development Bank |
| ADI | – | authorized depository institution |
| AFT | – | auto-feeding of concluded transactions on electronic trading platform at Bloomberg |
| AITS | – | automated interbank trading system |
| AMA | – | account management agent |
| AMBD | – | Autoriti Monetari Brunei Darussalam |
| AMBIF | – | ASEAN+3 Multi-Currency Bond Issuance Framework |
| AMI | – | account management institution |
| AMRO | – | ASEAN+3 Macroeconomic Research Office |
| ANBIMA | – | Brazilian Financial and Capital Markets Association |
| ANNA | – | Association of National Numbering Agencies |
| AOM | – | automatic order matching |
| APB | – | Agriculture Promotion Bank |
| ARMS | – | advance resilience matching system |
| ASEAN | – | Association of Southeast Asian Nations |
| ASEAN+3 | – | ASEAN plus the People's Republic of China, Japan, and the Republic of Korea |
| ASX | – | Australian Securities Exchange |
| | | |
| BAHTNET | – | Bank of Thailand Automated High Value Transfer Network |
| BAP | – | Bankers Association of the Philippines |
| Bapepam | – | Capital Market Supervisory Agency |
| Bapepam-LK | – | Badan Pengawas Pasar ModalBapepam and Lembaga Keuangan |
| BBCA | – | PT Bank Central Asia Tbk. |
| BCEL | – | Banque Pour Le Commerce Exterieur Lao |
| BCLM | – | Brunei Darussalam, Lao PDR, Cambodia, and Myanmar |
| BCLMV | – | Brunei Darussalam, Lao PDR, Cambodia, Myanmar, and Viet Nam |
| BCS | – | bursa clearing and settlement system |
| BES | – | book-entry system |
| BETS | – | Book-Entry Transfer System |
| BEX | – | Bond Electronic Exchange |
| BI | – | Bank Indonesia |
| BIC | – | business identifier code |
| BIDV | – | Bank for Investment Development of Viet Nam |
| BI-RTGS | – | Bank Indonesia Real-Time Gross Settlement |
| BIS | – | Bank for International Settlements |
| BISS | – | Bond Institutional Settlement System |
| BI-SSSS | – | Bank Indonesia-Scripless Securities Settlement System |
| BI-SOSA | – | Bank Indonesia-Sentralisasi Otomasi Sistem Akuntansi |
| BM | – | Bursa Malaysia |
| BMA | – | Thai Bond Market Association |
| BMD | – | Bursa Malaysia Depository |
| BMRI | – | PT Bank Mandiri Tbk |
| BMS | – | Bursa Malaysia Securities |
| BMSC | – | Bursa Malaysia Securities Clearing Sdn Bhd |
| BN | – | Brunei Darussalam |

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|---|---|---|
| BNGA | – | PT Bank CIMB Niaga Tbk |
| BNLI | – | PT Bank Permata Tbk |
| BNM | – | Bank Negara Malaysia |
| BOC | – | Bank of China |
| BOJ | – | Bank of Japan |
| BOJ-NET FTS | – | BOJ-NET Funds Transfer System |
| BOK | – | The Bank of Korea |
| BOK-Wire+ | – | New Bank of Korea Financial Wire Network System |
| BOL | – | Bank of the LAO PDR |
| BOT | – | Bank of Thailand |
| BPAM | – | Bond Pricing Agency Malaysia |
| BQS | – | OTC Bond Quotation System |
| BR | – | Brazil |
| BSP | – | Bangko Sentral ng Pilipinas |
| BSRD | – | Bangko Sentral Registration Document |
| BTS | – | Bursa Trade System |
| BTr | – | Bureau of the Treasury |
| B-TRiS | – | Bond-Trade Report and Information Service |
| BTr-RoSS | – | BTr-Registry of Scripless Securities |
| CA | – | Canada |
| CAR | – | cost-at-risk |
| C-BEST | – | Central Depositary and Book-Entry Settlement |
| CBGS | – | Central Bond General System |
| CBM | – | Central Bank of Myanmar |
| CCDC | – | China Central Depository and Clearing Co., Ltd. |
| CCP | – | clearing and central counterparty |
| CD | – | certificate of deposit |
| CDP | – | Central Depository (Pte.) Limited |
| CDS | – | central depository system |
| CFETS | – | China Foreign Exchange Trade System |
| CFETS/NIFC | – | The China Foreign Exchange Trade System/National Interbank Funding System |
| CGT | – | capital gains tax |
| CHATS | – | Clearing House Automated Transfer System |
| CIPS | – | China International Payment Platform |
| CL | – | Chile |
| CLS | – | Continuous Linked Settlement |
| CMDC | – | Capital Market Development Committee |
| CMP2 | – | Capital Market Masterplan 2 |
| CMU | – | Central Moneymarkets Unit |
| CMUP | – | Central Moneymarkets Unit Processor |
| CN | – | People's Republic of China |
| CNAPS | – | China National Automatic Payment System |
| CNY | – | Chinese Yuan |
| CO | – | Columbia |
| COINS | – | Corporate Information Superhighway |
| CORBA | – | Common Object Request Broker Architecture |
| CP | – | commercial paper |
| CPA | – | Canadian Payments Association |
| CRM | – | credit risk mitigation |
| CSD | – | central securities depository |
| CSDCC | – | China Securities Depository and Clearing Corporation |
| CSRC | – | China Securities Regulatory Commission |

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|---|---|---|
| CSSO | – | Clearing and Settlement Systems Ordinance |
| CSV | – | comma separated value |
| CSX | – | Cambodia Securities Exchange |
| CTM | – | Central Trade Manager |
| CTP | – | Centralized Trading Platform |
| DA | – | Depository Agent |
| DCSS | – | Debt Securities Clearing and Settlement System |
| DDFI | – | Department of Domestic and Foreign Investment |
| DF | – | deliver free |
| DFOP | – | delivery free of payment |
| DGT | – | Double Taxation Convention |
| DGT | – | Director General of Taxation |
| DIFB | – | Deposit Insurance Fund Bonds |
| DJLK | – | Directorate General of Financial Institution |
| DK | – | Denmark |
| DTCC | – | Depository Trust & Clearing Corporation |
| DVP | – | delivery versus payment |
| EA | – | external account |
| EBCDIC | – | Extended Binary Coded Decimal Interchange Code |
| e-BOCS | – | Electronic Bond Clearing System |
| eDvP | – | electronic delivery versus payment |
| EE | – | Estonia |
| EFT | – | electronic fund transfer |
| ETBS | – | exchange traded bonds and sukuk |
| ETF | – | exchange traded fund |
| ETP | – | electronic trading platform |
| EU | – | European Union |
| EUR | – | euro |
| EX | – | exchange |
| FA | – | facility agent |
| FAST | – | Fully Automated System for Issuing/Tendering |
| FCY | – | foreign currency |
| FED | – | Fedwire |
| FI | – | fixed income |
| FIE | – | fixed income fxchange |
| FIFO | – | first-in, first-out |
| FII | – | foreign institutional investor |
| FIMS | – | Foreign Investment Management System |
| Firsts | – | Fixed Income and Related Securities Trading System |
| FISCMA | – | Financial Investment Services and Capital Markets Act |
| FITS | – | Fixed Income Trading System |
| FIX | – | Financial Information Exchange |
| FOP | – | free of payment |
| FSA | – | Financial Services Agency |
| FSC | – | Financial Services Commission |
| FSS | – | Financial Supervisory Service |
| FTP | – | File Transfer Protocol |
| FX | – | eoreign exchange |
| GII | – | Government Investment Issues |
| GoE | – | Group of Experts |

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|---|---|---|
| GSBS | – | Government Securities Book-entry System |
| GSEDs | – | Government Securities Eligible Dealers |
| HK | – | Hong Kong, China |
| HKAB | – | Hong Kong Association of Banks |
| HKCC | – | Hong Kong Clearing Corporation |
| HKEx | – | Hong Kong Exchanges and Clearing Limited |
| HKFE | – | Hong Kong Futures Exchange Limited |
| HKICL | – | Hong Kong Interbank Clearing Limited |
| HKMA | – | Hong Kong Monetary Authority |
| HKSCC | – | Hong Kong Securities Clearing Company |
| HNX | – | Hanoi Stock Exchange |
| HOSE | – | Ho Chi Minh Stock Exchange |
| HSBC | – | Hongkong and Shanghai Banking Corporation |
| HTTP | – | Hyper Text Transfer Protocol |
| HVPS | – | High Value Payment System |
| IBAN | – | International Bank Account Number |
| IBPA | – | Indonesia Bond Pricing Agency |
| ICSDs | – | International Central Securities Depository |
| ID | – | Indonesia |
| IDIB | – | International Development Institute Bond |
| IDX | – | Indonesian Stock Exchange |
| IFTS | – | Interbank Funds Transfer System |
| IN | – | India |
| ILF | – | Intra-Day Liquidity Facility |
| IPFA | – | International Payments Framework Association |
| IP-VPN | – | Internet Protocol-Virtual Private Network |
| IRC | – | Investment Registration Certificate |
| ISDN | – | Integrated Services Digital Network |
| ISIN | – | International Securities Identification Number |
| ISITC | – | The International Securities Association for Institutional Trade Communication |
| ISO | – | International Organization for Standardization |
| ISS | – | Institutional Settlement Service |
| JASDEC | – | Japan Securities Depository Center Inc. |
| JGB | – | Japanese Government Bond |
| JGBCC | – | Japan Government Bond Clearing Corporation |
| JIS | – | Japanese Industrial Standards |
| JP | – | Japan |
| JPY | – | Japanese Yen |
| JSCC | – | Japan Securities Clearing Corporation |
| JSDA | – | Japan Securities Dealers Association |
| JSX | – | Jakarta Stock Exchange |
| KFTC | – | Korea Financial Telecommunications and Clearings Institute |
| KGB | – | Korean Government Bond |
| KH | – | Cambodia |
| KOFEX | – | Korea Futures Exchange |
| KOFIA | – | Korea Financial Investment Association |
| KOSCOM | – | Korea Securities Computing Corporation Korean |
| KOSDAQ | – | Korean Securities Dealers Automated Quotations |
| KPEI | – | Indonesia Clearing and Guarantee Corporation |

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|---|---|---|
| KR | – | Korea |
| KRX | – | Korea Exchange |
| KSD | – | Korea Securities Depository |
| KSD SAFE+ | – | Korean Securities Depository Speedy, Accurate, Faithful, Efficient |
| KSE | – | Korea Stock Exchange |
| KSEI | – | PT Kustodian Sentral Efek Indonesia |
| KTB | – | Korea Treasury Bonds |
| KTS | – | KRthe Republic of KoreaX Electronic Trading System for Government Bonds |
| LA | – | Lao People's Democratic Republic |
| LCY | – | Local Currency |
| LDB | – | Lao Development Bank |
| LEI | – | Legal Entity Identifier |
| LI | – | Liechtenstein |
| LSX | – | Lao Securities Exchange |
| LT | – | Republic of Lithuania |
| MAS | – | Monetary Authority of Singapore |
| MBS | – | Mortgage-Backed Securities |
| MCB | – | Minimum Cash Balance |
| MEB | – | Myanma Economic Bank |
| MEF | – | Ministry of Economy and Finance |
| MEPS+ | – | Monetary Authority of Singapore Electronic Payment System plus |
| MGS | – | Malaysian Government Securities |
| MITB | – | Malaysian Islamic Treasury Bills |
| MLA | – | Minimum Liquid Assets |
| MM | – | Myanmar |
| MMK | – | Myanmar Kyat |
| MNS | – | Multilateral Netting System |
| MOF | – | Ministry of Finance |
| MOSF | – | Ministry of Strategy and Finance |
| MOU | – | Memorandum of Understanding |
| MPLS | – | Multi-Protocol Label Switching |
| MSB | – | Monetary Stabilization Bonds |
| MSEC | – | Myanmar Securities Exchange Centre Co., Ltd |
| MTB | – | Malaysian Treasury Bills |
| MY | – | Malaysia |
| Myanmar | – | Republic of the Union of Myanmar |
| MyClear | – | Malaysian Electronic Clearing Corporation Sdn Bh |
| MYR | – | Malaysian Ringgit |
| NAFMII | – | National Association of Financial Market Institutional Investors |
| NBC | – | National Bank of Cambodia |
| NIFC | – | National Inter-bank Funding Center |
| NNA | – | National Numbering Agencies |
| NRBA | – | Non-resident Baht Account |
| NRBS | – | Non-resident Baht Account for Securities |
| NZ | – | New Zealand |
| OJK | – | Otoritas Jasa Keuangan |
| OTC | – | Over-the-Counter |

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|---|---|---|
| PA | – | Paying Agent |
| PE | – | Peru |
| PBOC | – | People's Bank of China |
| PD | – | Payment Date |
| PD | – | Principal Dealer |
| PDEx | – | Philippine Dealing and Exchange Corporation |
| PDEx-RoSS | – | PDEx-Registry of Scripless Securities |
| PDS | – | Private Debt Securities |
| PDS Group | – | Philippine Dealing System Holdings Corporation |
| PDTC | – | Philippine Depository and Trust Corporation |
| PG | – | Papua New Guinea |
| PH | – | Republic of the Philippines |
| PhilPaSS | – | Philippine Payments and Settlement System |
| PI | – | Principal and Interest |
| PL | – | Poland |
| PPN | – | Private Placement Notes |
| PRC | – | People's Republic of China |
| PSET | – | Place of Settlement |
| PSMS | – | Pre-Settlement Matching System |
| PT | – | Put-Through |
| PTI | – | Post Trade Integration |
| PTS | – | Private Trading System |
| PTS | – | Proprietary Trading System |
| PVP | – | Payment Versus Payment |
| | | |
| QFII | – | Qualified Foreign Institutional Investors |
| QL | – | Qualifying Liabilities |
| RD | – | Receipt Date |
| RDDA | – | Regular Demand Deposit Account |
| RENTAS | – | Real-time Electronic Transfer of Funds and Securities |
| RENTAS-IFTS | – | RENTAS-Interbank Funds Transfer System |
| RENTAS-SSDS | – | RENTAS-Scripless Securities Depository System |
| RF | – | Receive Free |
| RMDS | – | Reuters Monitor Dealing System |
| RoSS | – | Registry of Scripless Securities |
| RPS | – | Retail Payment System |
| RSI | – | Regional Settlement Intermediaries |
| RTGS | – | Real Time Gross Settlement |
| RTB | – | Retail Treasury Bond |
| RVP | – | Receive Versus Payment |
| | | |
| SADC | – | Southern African Development Community |
| SAFE | – | State Administration of Foreign Exchange of the People's Republic of China |
| SB | – | Settlement Bank |
| SBV | – | State Bank of Vietnam |
| SC | – | Securities Commission of Malaysia |
| SCCP | – | Securities and Clearing Corporation of the Philippines |
| SCCS | – | Securities Clearing and Computer Services Pte. Ltd |
| SCH | – | Shanghai Clearing House |
| SCP | – | Short-term Commercial Paper |
| SD | – | Settlement Day |
| SEC | – | Securities and Exchange Commission |
| SECC | – | Securities and Exchange Commission of Cambodia |

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|---|---|---|
| SEHK | – | Stock Exchange of Hong Kong |
| SEOCH | – | SEHK Options Clearing House |
| SEPA | – | Single Euro Payments Area (SEPA) |
| SES | – | Stock Exchange of Singapore |
| SET | – | The Stock Exchange of Thailand |
| SF1 | – | Sub-Forum 1 |
| SF2 | – | Sub-Forum 2 |
| SFC | – | Securities and Futures Commission |
| SFCO | – | Securities and Futures Commission Ordinance |
| SFO | – | Securities and Futures Ordinance |
| SG | – | Singapore |
| SGD | – | Singapore Dollar |
| SGS | – | Singapore Government Securities |
| SGX | – | Singapore Exchange |
| SHCH | – | Shanghai Clearing House |
| SI | – | Settlement Institution |
| SICDA | – | Securities Industry (Central Depositories) Act, 1991 |
| Simex | – | Singapore International Monetary Exchange |
| SIPS | – | Systemically Important Payment System |
| SMPG | – | Securities Market Practice Group |
| SNA | – | Systems Network Architecture |
| SOE | – | state-owned enterprise |
| SPEEDS | – | Sistem Pemindahan Elektronik Dana dan Sekuriti |
| SRC | – | Securities Regulation Code |
| SRO | – | self-regulatory organization |
| SSC | – | State Securities Commission |
| SSE | – | Shanghai Stock Exchange |
| SSI | – | Standing Settlement Instruction |
| SSTS | – | Scripless Securities Trading System |
| SSX | – | Surabaya Stock Exchange |
| STFB | – | Short-Term Financial Bill |
| STP | – | Business Identifier Code |
| SWIFT | – | Society for Worldwide Interbank Financial Telecommunication |
| SZSE | – | Shenzhen Stock Exchange |
| | | |
| T | – | Trade Date |
| T2S | – | TARGET2 |
| TACT | – | technical assistance |
| T-bills | – | Treasury Bills |
| T-Board | – | Trading-Board |
| TCH | – | Thailand Clearing House |
| TCP/IP | – | Transmission Control Protocol/Internet Protocol |
| TEI | – | Tax Exempt Entity |
| TF1 | – | Task Force 1 |
| TF2 | – | Task Force 2 |
| TF3 | – | Task Force 3 |
| TF4 | – | Task Force 4 |
| TFEX | – | Thailand Futures Exchange |
| TFIIC | – | Thailand Financial Instruments Information Center |
| TH | – | The Kingdom of Thailand |
| ThaiBMA | – | Thai Bond Market Association |
| THB | – | The Thai Baht |
| TR | – | Trade Repository |
| TS | – | Trading System |
| TSD | – | Thailand Securities Depository |

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|---|---|---|
| TSE | – | Tokyo Stock Exchange |
| TWA | – | Tax Withholding Agent |
| UK | – | United Kingdom |
| UML | – | Unified Modeling Language |
| US | – | United States of America |
| USD | – | US Dollar |
| UTF | – | Unicode Transform Format |
| VN | – | Viet Nam |
| VND | – | Viet Nam Dong |
| VP | – | VP SECURITIES A/S |
| VPN | – | Virtual Private Network |
| VSD | – | Vietnam Securities Depository |
| WHT | – | withholding tax |
| XML | – | Extensible Markup Language |