<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Sep 2011</td>
<td><strong>DAY 2: ABMF Sub-Forum 2 (Puri Kencana Ballroom)</strong></td>
</tr>
<tr>
<td>08:30 – 09:00</td>
<td>Registration</td>
</tr>
<tr>
<td>09:00 – 09:10</td>
<td>Opening Remarks by SF2 Chair</td>
</tr>
<tr>
<td></td>
<td>Mr. Jong Hyung Lee</td>
</tr>
<tr>
<td></td>
<td><strong>Part 1: Discussion on the draft report</strong></td>
</tr>
<tr>
<td>09:10 – 10:00</td>
<td>Highlights of the SF2 Report by Dr. Taiji Inui. ADB consultant</td>
</tr>
<tr>
<td></td>
<td>- Additional comment from Mr. Shinji Kawai, ADB Secretariat</td>
</tr>
<tr>
<td></td>
<td><strong>Part 2: Information session: better infrastructure for data collection</strong></td>
</tr>
<tr>
<td>10:00 – 11:00</td>
<td>Better IT infrastructure to improve bond market information collection</td>
</tr>
<tr>
<td></td>
<td>- Presentation by KOSCOM</td>
</tr>
<tr>
<td></td>
<td>- Q&amp;A</td>
</tr>
<tr>
<td>11:00 – 11:15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td></td>
<td><strong>Part 3: Reporting to ABMI TF Meeting</strong></td>
</tr>
<tr>
<td>11:15 – 12:15</td>
<td>How SF2 can support transaction data collection</td>
</tr>
<tr>
<td></td>
<td>- Can SF2 promote standardization of transaction procedures as well as creation of transaction data base?</td>
</tr>
<tr>
<td></td>
<td>- Roundtable discussion</td>
</tr>
<tr>
<td>12:15 – 13:30</td>
<td>Lunch Break (Taman Gita)</td>
</tr>
<tr>
<td></td>
<td><strong>Part 4: Information session: European experience towards harmonization</strong></td>
</tr>
<tr>
<td>13:30 – 14:30</td>
<td>Europe’s efforts after Giovannini report</td>
</tr>
<tr>
<td></td>
<td>- Presentation by Mr. Sebastien Cochard, BNP Paribas</td>
</tr>
<tr>
<td></td>
<td>- Q&amp;A and Discussion</td>
</tr>
<tr>
<td>14:30 – 15:30</td>
<td>ECB’s Target 2 Securities and implication for Asia</td>
</tr>
<tr>
<td></td>
<td>- presentation by Mr. Taketoshi Mori, Bank of Tokyo-Mitsubishi UFJ</td>
</tr>
<tr>
<td></td>
<td>- Q&amp;A and discussion</td>
</tr>
<tr>
<td>15:30 – 15:45</td>
<td>Coffee Break</td>
</tr>
<tr>
<td></td>
<td><strong>Part 5: Next step and Workplan</strong></td>
</tr>
<tr>
<td>15:45 – 16:45</td>
<td>Next step and work plan</td>
</tr>
<tr>
<td></td>
<td>- Workplan presentation by Mr. Seung Jae Lee, ADB Secretariat</td>
</tr>
<tr>
<td></td>
<td>- Round table discussion</td>
</tr>
<tr>
<td>16:45 – 17:00</td>
<td>Wrap-up by Mr Satoru Yamadera, ADB Secretariat</td>
</tr>
<tr>
<td>17:00 – 17:15</td>
<td>Closing Remarks by SF2 Chair</td>
</tr>
<tr>
<td>19:00 – 21:00</td>
<td>Dinner (Starfish Bloo – W Hotel Seminyak)</td>
</tr>
</tbody>
</table>
Title: A preliminary survey of government bond markets including their infrastructures, typical Local and cross-border bond transaction flows for DVP in ASEAN+3 to implement straight through processing in the region (draft)

Preface (by Chair and Vice-chairs)

Part 1 Bond markets and their infrastructures in ASEAN+3

Part 2 Bond markets and their infrastructures in each economy

Part 3 Bond market infrastructure diagram, Local bond transaction flow, and cross-border bond transaction flow
Part 1 Bond markets and their infrastructures in ASEAN+3

Executive summary
1. Introduction
2. Methodology and Approach of the Survey
3. Overview of ASEAN +3 Bond Markets and their Infrastructures
4. Local Bond Transaction Flow
5. Cross-border Bond Transaction Flow
6. Matching
7. Settlement cycles
8. Standards including numbering and coding
9. Possible next step
10. Conclusions
11. Acknowledgement
12. Reference
13. List of Abbreviations (glossary)
14. Member list
Appendix
1. Introduction

1.1 Purpose of ABMF
1.2 ABMF Sub Forum 2
1.3 Membership and participants
1.4 Organizational structure and governance
1.5 Work steps and schedule of Sub Forum 2
2. Methodology and Approach of the Survey

2.1 Possible goals of Sub Forum 2
2.2 Methodology overview
2.3 Settlement barriers from GoE report
2.4 Survey by questionnaire
2.1 Possible goals

ASIAN-3 proprietary practices

Current
- having some differences country by country.
- having some differences from international standards.

Future
- to be changed to meet International standards and/or
- to be accepted by International standards after conforming in the region

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

2.2 Possible Goals of ABMF SF2

Asia should engage standard setting more closely and should lead discussions in the international forum

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

A) Clarify Settlement Barriers
Output of GoE Report

B) Possible Roadmap for Harmonizing
ASEAN +3 Bond Markets (STP)

<Major Tasks of Sub Forum 2>
C) Fact Findings of Each Market
D) Fit & Gap Analysis between
International standards and local
practices

2.4 Major barriers

Sub-Forum 2: Enhancing regional
Straight-Through-Processing (STP)

Barriers related to SF2
- Messaging format
- Pre-matching
- Securities numbering
- Settlement cycle
- Physical certificates

Barriers related to SF1
- Taxes
- Cash controls (credit balances, overdrafts)
- FX controls (conversion, repatriation)
- Investor registration
- Omnibus accounts
- Quotas

Number of markets involved
Fewer → More

Area of influence
Private sector → Public sector

Source: The ABMI GoE report
Settlement barriers related to SF2

1. Messaging standards
   - Fit and gap analysis of local practices and international (ISO) standards
     1. Conforming local standards to international (ISO) standards
     2. Proposing local standards as ISO standards
     3. Converting from local to ISO standards and vice versa

2. Trade and settlement matching
   - Conformity of matching between local and ISO standards
     1. Processes such as one-side entry or both sides entry
     2. Transparency of transaction processes

3. Securities numbering
   - Conformity and convertibility of coding scheme between local and ISO standards
     1. ISIN (International Securities Identification Number)
     2. Other coding schemes including cash account code, securities account code and character code

4. Settlement cycle
   - Agreeing settlement cycle for cross-border transactions
     1. Shortening settlement cycle is discussed in some countries
     2. Settlement cycle for local transactions could be different from that of cross-border transactions

5. Physical certificates
   - Dematerialization (book-entry system of securities) etc.

2.4 How to reach the goal
Primary categories of questionnaire

1. Bond market infrastructures
2. CSDs in each country
3. Typical business flowchart
4. Matching
5. Settlement cycles
6. Standards including numbering and coding
7. ISO and the local practices
8. Transaction cost
9. Medium to long term strategy
10. Any other information
### Bond Market Infrastructures

<table>
<thead>
<tr>
<th>ABMF SF2</th>
<th>Bond Market Infrastructures</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>CSDs</th>
<th>CSDs in each country</th>
<th>CSDs in each country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Name</td>
<td>Type of services</td>
<td>Lot of transactions</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
<td>-------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Japan</td>
<td>J-Clear</td>
<td>Domestic market</td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td>J-Clear</td>
<td>International market</td>
<td>Weekly</td>
</tr>
<tr>
<td>Indonesia</td>
<td>BRIEX</td>
<td>Domestic market</td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td>BRIEX</td>
<td>International market</td>
<td>Weekly</td>
</tr>
</tbody>
</table>

*1: Model 1: applied to domestic currency denominated bonds. Model 2: applied to foreign currency denominated bonds.

### CSDs in each country

<table>
<thead>
<tr>
<th>ADB</th>
<th>CSDs in each country</th>
<th>ADB</th>
<th>CSDs in each country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Type of services</td>
<td>Lot of transactions</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>---------------------</td>
<td>---</td>
</tr>
<tr>
<td>Japan</td>
<td>J-Clear</td>
<td>Domestic market</td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td>J-Clear</td>
<td>International market</td>
<td>Weekly</td>
</tr>
<tr>
<td>Indonesia</td>
<td>BRIEX</td>
<td>Domestic market</td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td>BRIEX</td>
<td>International market</td>
<td>Weekly</td>
</tr>
</tbody>
</table>

*1: Model 1: applied to domestic currency denominated bonds. Model 2: applied to foreign currency denominated bonds.
3. Overview of ASEAN +3 Bond Markets

3.1 Overview of ASEAN+3 government bond markets

3.2 General observation of ASEAN+3 bond market infrastructures
3. Overview of ASEAN +3 Government Bond Markets

1. Robust and sound bond infrastructures
   Each market has its own infrastructures to fit its market which seem to be robust and sound. Operational risk associated with the systems seems to be comparable with the developed markets.

2. Listed at exchanges and traded in OTC markets
   Bonds are listed at stock exchanges, however, mostly traded over the phone or other communication tools by negotiation among brokers and dealers. In other words, the bond markets in the region are generally OTC (over-the-counter) markets. This is also common in elsewhere because bond trade is normally quote-driven where dealers need to negotiate the price while exchange trade is order-driven where all of the orders of buyers and sellers can be seen and matched by system. Korea is the only exception where the exchange has a substantial market share because benchmark bonds are mostly traded at the exchange. In China, bond trades at the stock exchanges are very limited; however, due to QFII (Qualified Foreign Institutional Investor), foreign investors must trade bonds at the exchanges.

3. CCP
   CCP (central counterparty) does not exist in many markets. However, this is understandable because transaction volume is still limited in these markets. As trade volume increases, it is expected that CCP will be introduced into the markets.
3.2 General observation of ASEAN+3 bond market infrastructures

4. Matching
All the markets have a matching concept at a trade or settlement level, or even both levels. Some markets adopted central matching and others local matching. Also, matching with additional features such as reduction of input workloads is implemented in some markets.

5. Settlement cycle
Settlement cycles for Local bond transactions in many markets are already realized 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.

6. Cash settlement by central bank money
With exception of Viet Nam, all the markets use central bank money to settle cash component of bond trades. In some countries, cash may be settled directly at accounts of individual financial institutions while, in the other countries, the CSD has an account at the central bank and cash is settled through the account.

7. Harmonization of terminologies and definitions
Technical terminologies need to be harmonized before harmonizing systems and messaging in the region.

4. Local Bond Transaction Flow

4.1 Model Local bond transaction flow

4.2 Some issues of Local bond transactions in ASEAN+3
Variant 1: Trade data are transmitted to CSD directly from trade related platform
China, Korea(Ex), Philippines, Viet Nam
## Settlement instruction and confirmation

<table>
<thead>
<tr>
<th>Currency</th>
<th>Market</th>
<th>Bond Settlement Instruction</th>
<th>Cash Settlement Instruction</th>
<th>Cash Settlement Confirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN</td>
<td>CDS</td>
<td>From the trading system</td>
<td>From the trading system</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affirmation of the settlement</td>
<td>Affirmation of the settlement</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>HK</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>JP</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>KR</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>MY</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affirmation of the settlement</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>PH</td>
<td>CDS</td>
<td>From the trading system</td>
<td>From the trading system</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affirmation of the settlement</td>
<td>Affirmation of the settlement</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>SG</td>
<td>CDS</td>
<td>From the trading system</td>
<td>From the trading system</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affirmation of the settlement</td>
<td>Affirmation of the settlement</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>TH</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td>VN</td>
<td>CDS</td>
<td>None</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From seller and buyer</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affirmation of the settlement</td>
<td>From Central Bank to seller and buyer</td>
<td>None (integrated with the Bond Settlement Confirmation)</td>
</tr>
</tbody>
</table>

* Note: In a situation where the settlement system is integrated with the Bond Settlement System, the settling banks need to ensure that all necessary steps are taken to prevent any delays or errors in the settlement process. The settlement system will automatically handle the settlement process, ensuring timely and accurate settlement of transactions.
## Communication protocol and message standard

<table>
<thead>
<tr>
<th>Market</th>
<th>Direct linkage</th>
<th>Protocol</th>
<th>Message Format</th>
<th>Direct linkage</th>
<th>Protocol</th>
<th>Message Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN OTC</td>
<td>○</td>
<td>TCP/IP</td>
<td>XML and Text based on ISO</td>
<td>TCP/IP</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>HK OTC</td>
<td>○</td>
<td>TCP/IP</td>
<td>ISO15022</td>
<td>TCP/IP</td>
<td>SWIFT</td>
<td></td>
</tr>
<tr>
<td>ID OTC</td>
<td>-</td>
<td>SNA</td>
<td>Proprietary</td>
<td>SNA</td>
<td>Proprietary</td>
<td></td>
</tr>
<tr>
<td>JP OTC</td>
<td>○</td>
<td>TCP/IP</td>
<td>CSV and XML based on ISO</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>KR OTC</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>MY OTC</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>PH OTC</td>
<td>—</td>
<td>TCP/IP</td>
<td>Proprietary</td>
<td>TCP/IP</td>
<td>SWIFT</td>
<td></td>
</tr>
<tr>
<td>SG OTC</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TH OTC</td>
<td>—</td>
<td>TCP/IP</td>
<td>Proprietary</td>
<td>TCP/IP</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>VN OTC</td>
<td>—</td>
<td>TCP/IP</td>
<td>XML based on ISO</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

## Some examples of SROs and Reporting Rules in ASEAN+3

<table>
<thead>
<tr>
<th>Country</th>
<th>SRO</th>
<th>Reporting Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>HK</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>ID</td>
<td>Indonesia Stock Exchange (IDX)</td>
<td>The seller or buyer have to report trade data to Centralized Trading Platform (CTP) of Indonesia Stock Exchange (IDX) within 30 minutes of trade.</td>
</tr>
<tr>
<td>JP</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>KR</td>
<td>Korea Financial Investment Association (KOFIA)</td>
<td>A financial investment company engaged in bond trading should report the details to KOFIA.</td>
</tr>
<tr>
<td>MY</td>
<td>Bursa Malaysia</td>
<td>BM runs Electronic Trading Platform (ETP), and the seller and buyer have to input all trades to ETP.</td>
</tr>
<tr>
<td>PH</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SG</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>TH</td>
<td>ThaiBMA</td>
<td>ThaiBMA monitors the reported price data to ensure that disseminated prices are efficient to be used as market reference.</td>
</tr>
<tr>
<td>VN</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
4.2 Some issues of Local bond transactions in ASEAN+3

1. Fit and gap analysis of messages such as bond settlement instruction and bond settlement confirmation will be necessary to implement STP.
2. Connecting trade infrastructure and CSD for transmitting trade data will provide better facility for STP in each economy.

5. Cross-border Bond Transaction Flow

5.1 Possible channels of cross-border bond transaction flow
5.2 Model cross-border bond transaction flow
5.3 Some features which have impact on flows of cross-border bond transactions in ASEAN+3
5.1 Possible channels of cross-border bond transaction flow

1. to use local agency or custodian that has direct or indirect access to the foreign (issuer) CSD
2. to use a(n) (I)CSD that has direct or indirect access to the foreign (issuer) CSD
3. to directly (remotely) access to the foreign (issuer) CSD

Source: J.P. Morgan

5.2 Model cross-border bond transaction flow

Source: J.P. Morgan
### 5.3 Some features which have impact on flows of cross-border bond transactions in ASEAN+3

1. **Tax**
   - There are some additional bond transaction flows related to capital gain tax for bond trades (ID).

2. **Currency exchange and cash controls**
   - Local (QFII) custodian sends cash projection report to designated QFII broker for pre-funding purpose (CN).
   - Foreign institutional investors send FX funding instructions to global custodians. Then, the global custodians send the instruction to Local custodians to pre-fund cash before trade orders are sent from the investors to the global brokers (VN).
   - Local custodians send FX confirmation to global custodians to secure the cash settlements at the central bank current accounts for DVP transactions (ID, KR, MY, PH, and TH).

3. **Manual pre-settlement matching**
   - Pre-settlement matching is conducted by Local custodians with counterparties manually by using telephones and/or facsimiles (ID, MY, PH, SG, and TH).

4. **Messaging standard**
   - Messages between global custodians and Local custodians are already standardized by using International standards such as ISO15022 (MT5xx), ISO6166 (ISIN), and ISO9362 (BIC) from practical perspective.

### 6. Matching

![Matching Diagram]

**Diagram Notes:**
- Foreign Institutional Investor
- Domestic Broker
- OTC Market
- Domestic Broker
- Local Custodian
- Global Custodian
- CSD

**Flow:**
- Pre-settlement matching
- Trade Matching
- Settlement Matching
### 6. Matching for OTC markets

<table>
<thead>
<tr>
<th>Economy</th>
<th>Trade matching</th>
<th>Pre-settlement matching</th>
<th>Settlement matching</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN</td>
<td>CFETS</td>
<td>-</td>
<td>Central</td>
</tr>
<tr>
<td>HK</td>
<td>CMU</td>
<td>-</td>
<td>Central</td>
</tr>
<tr>
<td>ID</td>
<td>-</td>
<td>Telephone, facsimile, etc.</td>
<td>Central</td>
</tr>
<tr>
<td>JP</td>
<td>-</td>
<td>PSMS</td>
<td>Local</td>
</tr>
<tr>
<td>KR</td>
<td>FreeBond</td>
<td>-</td>
<td>Central</td>
</tr>
<tr>
<td>MY</td>
<td>BMS ETP</td>
<td>-</td>
<td>Local</td>
</tr>
<tr>
<td>PH</td>
<td>FI trading system</td>
<td>Telephone, facsimile, etc.</td>
<td>Central</td>
</tr>
<tr>
<td>SG</td>
<td>-</td>
<td>Telephone, facsimile, etc.</td>
<td>Local</td>
</tr>
<tr>
<td>TH</td>
<td>-</td>
<td>Telephone, facsimile, etc.</td>
<td>Central</td>
</tr>
<tr>
<td>VN</td>
<td>HNX</td>
<td>-</td>
<td>Central</td>
</tr>
</tbody>
</table>
### 7. Settlement cycles

<table>
<thead>
<tr>
<th>Country</th>
<th>Domestic</th>
<th>Cross-Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN</td>
<td>T+1 (negotiable, market practice)</td>
<td>T+1 (market practice)</td>
</tr>
<tr>
<td>HK</td>
<td>T+2 (negotiable, market practice)</td>
<td>according to the standard cycle of the respective markets</td>
</tr>
<tr>
<td>ID</td>
<td>T+2 (negotiable, market practice)</td>
<td>T+2</td>
</tr>
<tr>
<td>JP</td>
<td>T+3 (negotiable, market practice)</td>
<td>T+2-T+4</td>
</tr>
<tr>
<td></td>
<td>In April 2012, it will be T+2.</td>
<td>In April 2012, it will be T+2.</td>
</tr>
<tr>
<td>KR</td>
<td>T+1 (negotiable, market practice)</td>
<td>T+1-T+3 (in-bound transaction) depending on the settlement cycle of designation country for investment (out-bound transaction)</td>
</tr>
<tr>
<td></td>
<td>T+1-T+30 is possible.</td>
<td></td>
</tr>
<tr>
<td>MY</td>
<td>T+1/T+2 (negotiable, market practice)</td>
<td>T+2</td>
</tr>
<tr>
<td>PH</td>
<td>T+1 (negotiable, market practice)</td>
<td>T+1 (same as a domestic transaction)</td>
</tr>
<tr>
<td>SG</td>
<td>T+3 (negotiable, market practice)</td>
<td>T+1</td>
</tr>
<tr>
<td>TH</td>
<td>T+2 (negotiable, market practice)</td>
<td>T+3 (US investor)</td>
</tr>
<tr>
<td>VN</td>
<td>T+2 or T+3 ※T=trade capture date</td>
<td>T+1</td>
</tr>
</tbody>
</table>

※T=trade capture date

### 8. Standards including numbering and coding

1. Financial Instrument (Securities) identification
   - ISIN (ISO 6166)
   - LEI (Legal Entity Identifier)
2. Party Identification and Account
   - BIC (ISO 9562)
   - Proprietary identification
   - Name and address
3. Safekeeping (Securities) account identification
   - Proprietary
   - There is no account structure (simple text)
4. Cash account
   - IBAN (ISO 13614)
5. Languages
   - Unicode (ISO /IEC 10646)
   - BIC (ISO 9362)
   - Other (Proprietary) Identification

ISO 20022 needs to support proprietary practices
### 8. Standards including numbering and coding

<table>
<thead>
<tr>
<th>Country</th>
<th>Market</th>
<th>Securities numbering</th>
<th>Financial Institution Identification</th>
<th>Securities account</th>
<th>Cash account</th>
<th>Character code and language</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN</td>
<td>OTC</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>HK</td>
<td>OTC</td>
<td>ISIN and proprietary</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Code supported by SWIFT</td>
</tr>
<tr>
<td>ID</td>
<td>OTC</td>
<td>ISIN and proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>-</td>
</tr>
<tr>
<td>JP</td>
<td>OTC</td>
<td>ISIN</td>
<td>Proprietary code (account)</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>KR</td>
<td>OTC</td>
<td>ISIN and proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>KSC5601 for Korean</td>
</tr>
<tr>
<td>MY</td>
<td>OTC</td>
<td>-</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>PH</td>
<td>OTC</td>
<td>ISIN for Government</td>
<td>Proprietary code (PDS-assigned)</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>SG</td>
<td>OTC</td>
<td>-</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>TH</td>
<td>OTC</td>
<td>ISIN</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>Proprietary code</td>
<td>UTF8</td>
</tr>
<tr>
<td>VN</td>
<td>OTC</td>
<td>ISIN and proprietary code</td>
<td>N/A</td>
<td>Proprietary code</td>
<td>N/A</td>
<td>UTF8</td>
</tr>
</tbody>
</table>

#### ISIN

International Securities Identification Number

All ASEAN+3 economies with bond markets are full member of ANNA (Association of National Numbering Agencies) as follows. But, actual securities number is based on Local proprietary numbering in many countries for the time being.

<table>
<thead>
<tr>
<th>ANNA</th>
<th>ANNA Secretariat</th>
<th>Country</th>
<th>Full member</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>China Securities Regulatory Commission</td>
<td>CN</td>
<td>Full member</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Hong Kong Exchanges and Clearing Ltd</td>
<td>HK</td>
<td>Full member</td>
</tr>
<tr>
<td>Indonesia</td>
<td>PT Kustodian Sentral Efek Indonesia (Indonesian Central Securities Depository)</td>
<td>ID</td>
<td>Full member</td>
</tr>
<tr>
<td>Japan</td>
<td>Tokyo Stock Exchange</td>
<td>JP</td>
<td>Full member</td>
</tr>
<tr>
<td>Korea</td>
<td>Korea Exchange - KRX</td>
<td>KR</td>
<td>Full member</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Bursa Malaysia</td>
<td>MY</td>
<td>Full member</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Stock Exchange, Inc.</td>
<td>PH</td>
<td>Full member</td>
</tr>
<tr>
<td>Singapore</td>
<td>Singapore Exchange Limited</td>
<td>SG</td>
<td>Full member</td>
</tr>
<tr>
<td>Thailand</td>
<td>Thailand Securities Depository Co., Ltd</td>
<td>TH</td>
<td>Full member</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Vietnam Securities Depository</td>
<td>VN</td>
<td>Full member</td>
</tr>
</tbody>
</table>
9. Possible next step of ABMF SF2

1. Continue identification of transaction flows, messaging and market practices.
   - The scope will be expanded to issuance, redemption, and interest payment of government and corporate bonds, including some corporate action related to corporate bonds.
   - In addition, we continue to share information on LEI and improvements in data collection.

2. ISO 20022 Fit-and-gap analysis

3. Propose a roadmap to standardize and harmonize ABMF SF2

Cross Border Transaction Flow

Salient points of bond transaction flows will be discussed.

Opportunity for regional interoperability by ISO 20022
STP inhibiting factor

Global Custodian → Local Custodian → National CSDs

Global standard message instruction → Local message instruction

Transaction cost settlement cycle

Example in Japan (FUTURE2014)

Global Custodian

Local Custodian

National CSDs

Global Custodian

Local Custodian

JASDEC PSMS & Book entry system

BOJ-NET Securities Services

Global Business Module

ISO20022 Messages

Cost Reduction settlement cycle

SWIFT MXs

BOJ-NET

ISO20022 Messages

BOJ-NET

Cost Reduction settlement cycle
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.

10. Possible solutions and road maps to enhance STP and reduce cost in the ASEAN+3

Fit & Gap Analysis (for example)
1. Business processes such as message transactions themselves and message flows need to be surveyed

2. MT (ISO 15022) to MX (ISO 20022) reverse engineering will be required. But, before that fit and gap analysis between local standard and international standard (MT) needs to be carried out.

MT messages to be used later in this slides
MT540 Receive Free  MT544 Receive Free Confirmation
MT541 Receive Against Payment MT545 Receive Against Payment Confirmation
MT542 Deliver Free  MT546 Deliver Free Confirmation
MT543 Deliver Against Payment MT547 Deliver Against Payment Confirmation
MT548 Settlement Status and Processing Advice

FIT&GAP analyses between ISO20022 and a local standard

FIT&GAP of messages themselves
ISO20022 versus Local standard
• 1-to-1
• 1-to-N, N-to-1

FIT&GAP of formats
ISO20022 versus Local standard
• 1-to-1
• 1-to-N, N-to-1
• Items need to be converted

Message transactions covered by ISO20022 will be checked.

46

47
Scope of FIT&GAP analyses of local practices and ISO standards

1. Fit and gap analysis of message transactions themselves
   ① Message mapping: Corresponding messages between local standard and ISO standard are to be surveyed
   ② Message flow: Transaction flows not only for securities messages but also for payment messages as well as other messages such as notice messages including interlinking messages with other related organizations are to be considered
   ③ Securities transactions (issuances, investor registration, trades, repo, interest payments, and redemptions) are to be considered

2. Message format: Fit and gap analysis of each message between local and ISO standards are to be conducted

3. Code scheme: Code schemes such as ISIN, cash and securities accounts, and character codes between local and ISO standards are to be surveyed

<table>
<thead>
<tr>
<th>Type of transaction</th>
<th>Message mapping</th>
<th>Message flow</th>
<th>Message format</th>
<th>Code scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>securities</td>
<td>☑</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>collateral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inquiry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fit & gap analysis of terminologies

Business Process Flowchart
China Bond Market (OTC Market) / DVP

From meeting materials (Answer, Presentation, etc)
### Message Elements

<table>
<thead>
<tr>
<th>Business elements</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Message reference</td>
<td>16x / Max 35 text</td>
</tr>
<tr>
<td>2. Trade Date</td>
<td>ISO 8601 Date/Time</td>
</tr>
<tr>
<td>3. Settlement Date</td>
<td>ISO 8601 Date/Time</td>
</tr>
<tr>
<td>4. Quantity of Financial Instrument</td>
<td>Expressed as units (equities) or face amount (Fixed Income)</td>
</tr>
<tr>
<td>5. Financial Instrument</td>
<td>ISO 6166 International Securities Identification Number [ISIN]</td>
</tr>
<tr>
<td>6. Settlement Amount</td>
<td>Currency and amount</td>
</tr>
<tr>
<td>7. Safekeeping Account to be credited or debited</td>
<td>35x / Max 35 text</td>
</tr>
<tr>
<td>8. Place of Settlement</td>
<td>ISO 9362 Business Identifier Codes [BIC] taken from the list of PSET's BIC published on <a href="http://www.smpg.info">www.smpg.info</a>. See also Place of Settlement MP.</td>
</tr>
<tr>
<td>9. Receiving/Delivering Agent</td>
<td>ISO 9362 Business Identifier Codes [BIC] or CSD Local Code</td>
</tr>
<tr>
<td>10. Client of Receiving/Delivering Agent</td>
<td>ISO 9362 Business Identifier Codes [BIC]</td>
</tr>
<tr>
<td>11. Country specifics as per local market practice (if any)</td>
<td>Country specifics as per local market practice (if any)</td>
</tr>
</tbody>
</table>

Source: SWIFT (Ms. Morioka), original source SMPG

### 10 Common Elements in Settlement Instruction

### 10 common elements in Settlement confirmation

<table>
<thead>
<tr>
<th>Data</th>
<th>ISO 15022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction Identification</td>
<td>20C:SEME/16x</td>
</tr>
<tr>
<td>Trade Date</td>
<td>98A:TRAD/YYYYMMDD</td>
</tr>
<tr>
<td>Effective Settlement Date</td>
<td>98A:ESET/YYYYMMDD</td>
</tr>
<tr>
<td>Effectively Settled Quantity of Financial Instrument</td>
<td>36B:ESTT/FAMT/15d for fixed income 36B:ESTT/UNIT/15d for equities</td>
</tr>
<tr>
<td>Financial Instrument</td>
<td>35B:ISIN1e12c [4-35x]</td>
</tr>
<tr>
<td>Effectively Settled Amount</td>
<td>19A:ESTT/[IN]3a15d</td>
</tr>
<tr>
<td>Safekeeping Account to be credited or debited</td>
<td>97A:SAFE/35x</td>
</tr>
<tr>
<td>Place of Settlement</td>
<td>95P:PSET/45a2a2c</td>
</tr>
<tr>
<td>Receiving/Delivering Agent</td>
<td>95P:REAG/45a2a2c or 95R:REAG/8c34x 95P:DEAG/45a2a2c or 95R:DEAG/8c34x</td>
</tr>
<tr>
<td>Client of Receiving/Delivering Agent</td>
<td>95P:BUYR/45a2a2c 95P:SELL/45a2a2c</td>
</tr>
</tbody>
</table>

* if more than two parties are provided, the client of the REAG/DEAG is the REC/DEC. See Common Elements MP and Standards for clarification.

Country specifics as per local market practice (if any) | See country MP.

Source: SWIFT (Ms. Morioka), original source SMPG
Example of fit & gap analysis (current): Japanese JGB Market/ DVP with Matching and CCP (2/2)

Example of fit & gap analysis (ISO 20022): Japanese JGB Market/ DVP with Matching and CCP (2/2)

Note: fit and gap analysis is underway.
Fit Gap Analysis with standard message

From STP point of view, each country has its own message item depending on market practice. Making analysis with proprietary message and ISO standard message is useful for next step of ABMF standardization.

Refer to: ISO 20022 Securities Settlement and Reconciliation Message Definition Report
Approved by the Securities SEG on 14 December 2009

Detailed Business Process Flowchart
DVP with Matching and CCP (1/3)
Detailed Business Process Flowchart
DVP with Matching and CCP (2/3)

Buyer
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

PSMB
(Pre-Settlement Matching System)
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

Clearing System
(Japanese Government Bond Clearing Corporation- JGBCC)
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

PSMB
(Pre-Settlement Matching System)
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

CSD
(BOJ-NET)
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

Seller
- Notice of Approval of Obligation
- Notice of Novation
- Notice of Netting

DVP
Order

CSD
(BOJ-NET)

JGB Transfer Instruction for DVP (For Deliverer and Receiver of JGB)

Settlement
- $ - 5
- $
A draft image of possible roadmap

Country A's 12th five-year plan
Country B
Country C
Country D

Note: this slide shows just an image and does not based on any realistic facts.

Possible future models of Asian cross-border bond market infrastructures

CSDs of each bond markets do not link to each other.

The market participants should use global custodian, international broker, and cash correspondent bank to trade the foreign bonds.

CSDs link to each other.

One CSD acts as a sub-registry of the other.

The trading systems link to the foreign CSD.

The market participants can trade foreign bonds directly in their country.

The trading systems link to the ASIAN-ICSD.

The ASIAN-ICSD links to CSDs of each country.

ASIAN-ICSD acts as a hub, and reduces the cost of bilateral linkage.
Conclusions

- Some recommendations and proposals may be added.

Part 2: Bond markets and their infrastructures in each economy
Part 2 Bond markets and their infrastructures in each economy

1. Bond markets and their infrastructures
   1.1 Overview of bond markets
   1.2 Description of related organization
   1.3 Trading
   1.4 CCP
   1.5 Bond settlement
   1.6 Cash settlement
2. Typical business flow
   2.1 Local bond transaction flow
   2.2 Cross-border bond transaction flow
3. Matching
4. Settlement cycle
5. Numbering and coding
   5.1 Securities numbering
   5.2 Financial institution identification
   5.3 Securities account
   5.4 Cash account
   5.5 Character code and language
6. Medium to long term strategy

Economies which already have bond markets
1. People’s Republic of China
2. Hong Kong, PRC
3. Indonesia
4. Japan
5. Republic of Korea
6. Malaysia
7. Philippines
8. Singapore
9. Thailand
10. Vietnam

Economies which will have bond markets
1. Brunei Darussalam
2. Cambodia
3. Lao, PDR
4. Myanmar

Appendix 1. Outline of CSD system
Appendix 2. Outline of RTGS system
Appendix 3. Outline of planning system (if possible)
Part 3: Bond market infrastructure diagram, Local bond transaction flow, and cross-border bond transaction flow

Bond market infrastructure diagrams will be added after implementing the bond market infrastructures.
Local Bond Transaction Flows

BN, KH, LA, and MM
Local Bond Transaction Flows will be added after implementing the bond market infrastructures.

Cross-border Bond Transaction Flows

BN, KH, LA, and MM
Bond market infrastructure diagrams will be added after implementing the bond market infrastructures.
Preaching to Buddha

Thank you so much

Taiji Inui  ADB consultant
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Phone: +81-50-5547-1282
E-mail: inuit@nttdata.co.jp
Contents

1. Korea Bond Market Information
   - Primary Bond Market
   - Secondary Bond Market
   - Bond Valuation Information

2. Summary and Suggestions

3. KOSCOM Corporation
Korea Bond Market Information

Structure of Korea Bond Market Information

- Primary Bond Market
  - Listed
  - Unlisted
- Secondary Bond Market
  - Exchange Market
  - OTC Market
  - Bond Index & related financial products
- Others
- Bond Valuation Information

Korea Bond Market - Primary Bond Market Information

KRX
- Standard Code System

KOSCOM
- Issuing Info. Checking
- Info. Dissemination

Market
- Financial Institutions
- Information Vendors
- Others
- Korea Securities Depository Bond Registration Service
Korea Bond Market - Primary Bond Market Information

Collection

- Data collection agencies: Korea Exchange (KRX), Korea Securities Depository (KSD)
- KRX
  - Registered by issuer or underwriter to obtain a standard code for the bond
  - Complete online application in Standard Code System and send documents via FAX
  - KRX, a governing body, assigns and manages ISIN number
  - Standard code is managed in accordance with ISO 6166 & KS X ISO 6166
- KSD
  - An issuer applies to register a bond
  - Report any change in issuance for account management purpose

Supply

- KRX Data
  - KOSCOM disseminates data after cleansing and adding required information
  - Listed bond issuance information: disseminates daily collected data at 18:00 hours in batch file to the market
  - Unlisted bond issuance information: disseminates data in real-time upon completion of online application by issuers
  - KOSCOM gathers listed and unlisted issuance information, creates a total issuance information (listed and unlisted issuances) and then disseminates to the market again at dawn
- KSD Data
  - KSD disseminates data directly to institutions (on request basis)
### Korea Bond Market - Primary Bond Market Information

(As of August 30th, 2011)

<table>
<thead>
<tr>
<th></th>
<th>Listed</th>
<th></th>
<th>Unlisted</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of instruments</td>
<td>Balance (10bil. KRW)</td>
<td>Number of instruments</td>
<td>Balance (10bil. KRW)</td>
<td>Number of instruments</td>
</tr>
<tr>
<td>KTB</td>
<td>236</td>
<td>39,002</td>
<td></td>
<td></td>
<td>236</td>
</tr>
<tr>
<td>Muni</td>
<td>1,138</td>
<td>1,678</td>
<td>37</td>
<td>20</td>
<td>1,175</td>
</tr>
<tr>
<td>Special</td>
<td>5,764</td>
<td>59,080</td>
<td>1,725</td>
<td>6,815</td>
<td>7,449</td>
</tr>
<tr>
<td>Corp</td>
<td>2,503</td>
<td>17,740</td>
<td>4,319</td>
<td>2,197</td>
<td>6,822</td>
</tr>
<tr>
<td>Sub Total</td>
<td>9,641</td>
<td>117,501</td>
<td>6,081</td>
<td>9,032</td>
<td>15,722</td>
</tr>
<tr>
<td>ELS</td>
<td>23,468</td>
<td>11,502</td>
<td>23,468</td>
<td>11,502</td>
<td>40,510</td>
</tr>
<tr>
<td>Total</td>
<td>9,641</td>
<td>117,501</td>
<td>30,869</td>
<td>21,859</td>
<td>40,510</td>
</tr>
</tbody>
</table>

### Korea Bond Market - Secondary Bond Market Information

<table>
<thead>
<tr>
<th></th>
<th>Price</th>
<th>Quote</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>KOFIA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KRX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Information Hub**

- Financial Institutions
- Information Vendors
- Others

**KOSCOM**
Korea Bond Market - Secondary Bond Market Information

KOFIA Data

- ~2007
  - KOFIA - 15min rule
  - KOFIA bond quotation information
- 2007~2010
  - KOFIA - 15min rule
  - KOFIA bond quotation information
  - Real time Bond Index
- 2010~
  - KOFIA - 15min rule
  - FreeBond
  - Real time Bond Index

Korea Bond Market - Secondary Bond Market Information

KOFIA Data 15min. rule data

Brokerage House (Member)  KOFIA  KOSCOM  Market

Other Reporting Institutions

Online Browser  Online Browser

Market Data Dissemination System

Financial Institutions

Information Vendor

Others
KOFIA Data 15min. rule data

- **Regulation 7-5** on financial investment company's operation and business rule (regulated by KOFIA): any bond trade done by financial investment company in OTC market should report each and all trading or brokerage result to KOFIA electronically after the order has been executed within 15 minutes.

- **Securities house and bond brokerage** enters and reports the *trade results* through on-line

- KOFIA server and brokerage houses are connected through Stock network

- Market hours: 08:00~19:30

- Market data is disseminated through KOSCOM’s STOCK-NET

- Last day’s traded results, including broker’s activity data, are provided next day in batch file
Private Instant messenger was used as main trading tool for bonds.

Data collected based on 15-minute rule data were the only source of real-time OTC market data.

Quotations were not disclosed in the bond market.

Only market participants shared real-time quotes information.

Transparency and disclosure issues were raised.

Safe transaction issue was also raised in case of system error in private instant messenger.

---

Korea Bond Market - Secondary Bond Market Information

KOFIA Data OTC Market - Trading Environment (~2007)

- Private Instant messenger was used as main trading tool for bonds.
- Data collected based on 15-minute rule data were the only source of real-time OTC market data.
- Quotations were not disclosed in the bond market.
- Only market participants shared real-time quotes information.
- Transparency and disclosure issues were raised.
- Safe transaction issue was also raised in case of system error in private instant messenger.

Korea Bond Market - Secondary Bond Market Information


Diagram showing market participant interactions and dissemination systems.
Korea Bond Market - Secondary Bond Market Information

KOFIA Data

- Regulation 7-3 on financial investment company's operation and business rule: financial institutes that trades or brokerages bonds should report OTC bond quotations to KOFIA through bond trading system, without any delay.
- KOFIA provides an alternative messenger for bond trading.
- Real-time price/quotes are collected from private instant messenger or FB messenger.
- Collected data is then disseminated through KOSCOM’s STOCK-NET and also displayed on KOFIA’s website.
- Data is collected after parsing trade information data entered in messenger.

Korea Bond Market - Secondary Bond Market Information

KOFIA Data

  - Regulation 7-3 on financial investment company’s operation and business rule: financial institutes that trades or brokerages bonds should report OTC bond quotations to KOFIA through bond trading system, without any delay.
  - KOFIA provides an alternative messenger for bond trading.
  - Real-time price/quotes are collected from private instant messenger or FB messenger.
  - Collected data is then disseminated through KOSCOM’s STOCK-NET and also displayed on KOFIA’s website.
  - Data is collected after parsing trade information data entered in messenger.
KOFIA provides FreeBond (Bond trading system)
Bond quotes are collected through FreeBond
Real-time price and transactions are provided to market through FreeBond
FreeBond = trading messenger + trading chatting room + trading platform
※Trading platform: built on traditional trading mechanisms used in bond trading messenger
**Korea Bond Market - Secondary Bond Market Information**

### Exchange Data

- ** Tradable Instruments**: Listed bond
- **Target**: all bond price and quotes information generated in KRX matching engine
- **Disseminates** data through KOSCOM network
- Inbound/outbound of data in protocol defined by KOSCOM

※ KOSCOM network (**STOCK-NET**)  
- Operates by KOSCOM, keeping safety and protection as first priority  
- Connected with almost all financial institutions in Korea

### Bond Index & ETF

- **Bond index** is introduced using real-time Exchange and KOFIA market data (2009~)  
  - Number of real-time bond index : 8
- **ETF** is introduced using real-time bond index  
  - Number of bond ETFs : 9
### Bond Index & ETF

<table>
<thead>
<tr>
<th>Index Name</th>
<th>Calculation Institutions</th>
<th>Information Source</th>
<th>Calculation Factors</th>
<th>ETF Name</th>
<th>ETF Launched Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEB KTB Index</td>
<td>KAP</td>
<td>KOFIA FreeBond</td>
<td>Real-time pricing of all KTB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOBI KTB 10Y</td>
<td>KIS</td>
<td>KOFIA FreeBond</td>
<td>KTB 10Y (3 instruments)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KTB Index</td>
<td>KOSCOM</td>
<td>Exchange + FreeBond</td>
<td>3Y KTB Futures (final settlement basis) bond basket</td>
<td>KINDEX KTB</td>
<td>2009-07-31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>KODEX KTB</td>
<td>2009-07-31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>KSTAR KTB</td>
<td>2009-07-29</td>
</tr>
<tr>
<td>MXF TB Index</td>
<td>FN Guide</td>
<td>KOFIA FreeBond</td>
<td>3Y KTB Futures nearest monthly maturity (final settlement basis) – 3 instruments</td>
<td>KODEX KTB</td>
<td>2009-07-29</td>
</tr>
<tr>
<td>MK MMI</td>
<td>KIS Bond Pricing</td>
<td>KOFIA FreeBond</td>
<td>KTB 10Y (3 instruments) KIS Bond Pricing</td>
<td>KINDEX KTB</td>
<td>2010-07-29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>KODIA KTB</td>
<td>2010-07-29</td>
</tr>
<tr>
<td>MK MSB</td>
<td>KIS Bond Pricing</td>
<td>KOFIA FreeBond</td>
<td>Average duration of 3 year, term to maturity of 3.0~3.9Y of 5 MSB instruments</td>
<td>KODEX MSB</td>
<td>2010-01-14</td>
</tr>
<tr>
<td>KOB Credit</td>
<td>KIS Bond Pricing</td>
<td>KOFIA FreeBond</td>
<td>Rating between AAA and A-, corp. bonds(no collateral), other financial bonds, bank bonds – 50 in total with term to maturity less than 5Y, and average duration of 2Y</td>
<td>KSTAR Preferred Corp. Bond</td>
<td>2011-04-15</td>
</tr>
<tr>
<td>F-KTB 3Y</td>
<td>KRX</td>
<td>Korea Treasury Futures Market</td>
<td>KTB futures 3Y settlement price</td>
<td>TIGER Inverse KTB 3Y</td>
<td>2011-07-18</td>
</tr>
</tbody>
</table>

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### Korea Bond Market – Bond Valuation Information

- **KAP**: Pricing Agency
- **KIS**: OTC Market Data
- **Nice**: Financial Institutions
- **OTC Market Data**: Information Vendors

![Diagram showing Korea Bond Market – Bond Valuation Information](image)
Korea Bond Market – Pricing Information

- Agencies that are licensed to evaluate bond pricing, calculate yield curve and instrument’s evaluation information
- Exchange data, KOFIA 15min rule data, KOFIA quotes data, other data collected by themselves, are used to run proprietary pricing model for evaluating purpose
- Each Instrument’s evaluation information is disseminated to market about 18:00
- Average of the three domestic pricing agencies information is used as reference price in the market
- Data is provided to institutions by each of these agencies themselves

Summary and Suggestions

The Characteristic of Korea Bond Market

- In developed market, data is collected by major investment banks, brokerage houses, information vendors, whereas in Korea, KOFIA plays the role of governing all OTC market data (by rules, regulation, market consensus, etc)
- Messenger is used as main tool in sharing bond information
- Existence of KOSCOM – as main purpose is to serve financial IT infrastructures in Korea
  - builds financial IT infrastructures in rapid response to the needs from KRX, KOFIA, and other financial institutions
- Utilization of KOSCOM’s market data dissemination infrastructures (i.e. network + applications)
Summary and Suggestions

KOSCOM’s role in Korea Bond Market

- Primary Bond Market - Issuance data
  - Data cleansing and adding required information for issuance of bond
  - Dissemination of Exchange market data
- Secondary Bond Market - Exchange data
  - Development/operation of KRX matching engine
  - Dissemination of Exchange market data
- Secondary Bond Market – OTC data
  - Development/operation of KOFIA’s 15min. Rule information system
  - Development/operation of KOFIA’s FreeBond System
  - Dissemination of OTC market data
- Bond YTM calculation
  - Distribution of bond information through “CHECK Expert” terminal
  - YTM calculation is mandatory and YTM calculator in CHECK Expert terminal is used as a standard calculator by Korean bond traders

Suggestions for building efficient bond market information infrastructure

- Primary Market
  - Needs for one data collecting institution
  - Needs for market environment where various needs are accepted upon issuance of exotic bonds
- Secondary Market
  - Needs for use of trading platform
  - Needs for market regulation to collect all secondary market data in a centralized source
  - Needs for financial IT infrastructure for data collection
- Market data distribution
  - Needs for financial IT infrastructure for data dissemination
- Trusted institution
  - Needs for institution to build IT infrastructure who can cooperate with other public financial institutions
  - Needs for institution to cope with flexible and yet rapid response to the market
**KOSCOM-Company Profile**

- Founded in September, 1977
- Major Stockholder: Korea Exchange (76%) etc.
- Capital: USD 24,600,000
- Organization: 5 Divisions, 19 Departments, 1 R&D center
- Staff: 700 Employees
  - 500 financial IT professionals

**KOSCOM-Major Businesses**

- **World-Class Exchange System (EXTURE)**
  - Integrated Trading System: KOSPI, KOSDAQ, Derivatives Market
  - KOFIA FreeBoard System
  - Oversea Exchange System

- **Real-Time Data Feed**
  - Total Securities Market Data Distribution
  - CHECKExpert Terminal
  - DataMail, Historical Data
  - Direct Trading Service (Varo)

- **Optimized Brokerage Trading System**
  - Total Securities Solution (PowerBASE)
  - Home Trading System (HTS)
  - Straight Through Processing (HUB)
  - Millennium Trading System (MTS) / Dealing System (KOSMOS)

- **Reliable and Super-high Speed Network**
  - Network Service (STOCK-Net)
  - Business Continuity Plan (BCP+)
  - Authentication Service (SignKorea)
  - Financial Security Service (FSISAC)
  - All&Security Integration Mgt (Ansim)
**KOSCOM-Major Businesses**

**Exchange IT**

**Provides Highly Reliability Exchange Systems, EXTURE**
And KOFIA (Korea Financial Investment Association ) OTC Market (Freeboard) System

- **KOSPI Market**
- **KOSDAQ Market**
- **Derivatives Market**

The Next Generation Integrated Trading Platform

- High Processing Capacity (40,000,000 quotes per day)
- One of the fastest in the world (less than 0.08 second)
- High Flexibility & Adaptability
- Cross-listing arrangement with CME group and Eurex

**KOSCOM-Major Businesses**

**Exchange IT**

**Actively Carrying Out The Overseas Projects By Targeting The Global Financial IT Market**

- Bond Trading System Of Bursa Malaysia (ETP)
- Islamic Commodity Trading System Of Bursa Malaysia (BCH)
- Derivatives Clearing and Settlement System Of Bursa Malaysia (DCS)
- Establishment of IT System in Laos Securities Market
- Establishment of IT System in Cambodia Securities Market
- Modernization of IT System in Vietnam Securities Market
- Planning to have MOU sign with Republic of Azerbaijan
**KOSCOM-Major Businesses**

### Market Data

An Authorized Securities **Market Data Distributor** In Korea Exclusively **Processes, Stores And Distributes Information.**

**Market Data Distribution**
Delivers Market Data In Real Time

**Information Terminal**
Domestic No1. Information Terminal Which Provides Various Analysis Information And Graph Information

**Historical Data**
The Largest Financial Database In Korea

**Data Media Center (DMC)**
Financial information service through various new medium channels

---

**KOSCOM-Major Businesses**

### Financial IT Solution

**IT center** For Securities And Derivatives Firms Which Provides Consulting, System Planning, Developing, Operation, etc

**Total Business Solution** **POWERBASE**

**Front, Middle & Back Office**
Responsible For The Account Mgt, Order Delivery And Asset Mgt

**Home Trading System** **POWERBASE** **HTS**
Enables Individual Investors At Home Or Work To Trade Using Their Wired Or Wireless Devices

**Professional Trading System** **MTS**
Front-Office Solution For Trading Professionals
We Also Provide Straight Through Processing HUB, Algorithmic Trading System, Dealing System

---

**KOSCOM-Major Businesses**

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---
KOSCOM-Major Businesses

IT Infra

- Network Services : STOCK-NET
  Site-Backup Network Service DWDM, Internet Service ISP, Leased Line, Facility Maintenance

- Business Continuity Plan Service
  Consulting Service, Disaster Recovery Center Implementation & Operation Service, Collocation & Data Center Service

- Certification Authority Service
  - 1.5 Million Customers in Korea
  - Applied Services : OSCP, Time Stamp, etc
  - Solutions : Safer Toolkit, Key Safer, etc

- Information Security Service
  An Authorized Information Sharing Analysis Center, Integrated Security Control And Information Sharing Service

Best IT Infrastructure
For Safe And Reliable Financial Trades

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  +82-2-767-8728

Thank You
Agenda

I. The EU Decision Making Process

II. Ten Years of EU Post-Trade Harmonisation

III. Dismantling the Giovannini Barriers: Ad Hoc Groups, Code of Conduct and T2S Securities

IV. Focus on the Global Push for Harmonising Securities Holding Legal Framework

V. The New Regulatory Agenda: Impact on the European Post-Trade Environment
The EU Decision Process

**EUROPEAN COMMISSION**

- Expert Group
- Commissioners College
- DG Internal Market

Advises:

**PARLIAMENT**

Amend Directives
(under the Commission control)

**COUNCIL**

- Co-Decision process

Adopts:

**European Securities Markets Authority (ESMA, formerly CESR)**

- Delegates

Level 2: advice on implementation measures
Level 3: harmonised EU implementation

---

**Mapping of Authorities**

### International Level

- **G-20**
- **Basel Committee**
- **IOSCO** (International Organisation of Securities Commission)
- **CPSS** (Committee on Payment and Settlement Systems)
- **IAIS** (International Association of Insurance Supervisors)
- **BIS** (Bank of International Settlement)
- **Financial Stability Board**

### EU Level

- **European Council**
- **EU Parliament**
- **EU Commission**
- **CEBS** (Committee of European Supervisors)
- **CESR** (Committee of European Securities Regulators)
- **ESMA** (European Securities and Markets Authority)
- **ESCB/ECB** (European System of Central Banks)
- **EIOPA** (European Insurance and Occupational Pensions Authority)
- **ECB for Eurozone**

### National Level

- **FR**
  - **Ministry of Finance**
  - **Commission Bancaire**
  - **AMF** (Autorité des Marchés Financiers)
  - **Banque de France**
  - **ACAM** (Autorité de Contrôle des Assurances et des Mandats)
  - **Banque de France**

- **UK**
  - **FSA** (Financial Services Authority)
  - **AMF** (Autorité des Marchés Financiers)
  - **Banque de France**
  - **FSA**
  - **Bank of England**
  - **FSA**
  - **Bank of England**
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A Few Milestones in European Post-trade Harmonisation

- First Giovannini Report: 1999
- Second Giovannini Report: 2004
- Finalisation of the UNIDROIT Geneva Securities Convention: 2011
- Code of Conduct on Market Infrastructures: 2006
- CSD Regulation: 2003
- MIFID Revision: 2004
- Target 2 Securities: 2009

The Giovannini Reports consistently influenced the harmonisation process in the EU.
The Giovannini Barriers: Inspiring 10 years of Harmonisation

Famously, the Giovannini Group, mandated by the European Commission, has produced ten years ago two reports on the main barriers related to the fragmentation of the European post-trade activities and the resulting inefficiencies:

**Legal Barriers**
- Barrier 9: Restrictions on the location of securities
- Barrier 13: Absence of EU-wide framework of laws
- Barrier 14: Legal treatment of netting
- Barrier 15: Conflict of laws

**Technical Requirements and Market Practices Barriers**
- Barrier 1: The diversity of IT platforms
- Barrier 2: Restrictions on location of clearing and settlement
- Barrier 3: Corporate actions
- Barrier 4: Absence of intra-day settlement finality
- Barrier 5: Impediments to remote access
- Barrier 6: Differences in standard settlement periods
- Barrier 7: Different operating hours/settlement deadlines
- Barrier 8: Differences in securities issuances
- Barrier 10: Primary dealer restrictions

**Fiscal Barriers**
- Barrier 11: Restrictions on withholding agents
- Barrier 12: Restriction on tax collection

Agenda

I. The EU Decision Making Process
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V. The New Regulatory Agenda: Impact on the European Post-Trade Environment
Dismantling the Barriers: Ad Hoc Groups Created by the EC and Multilateral Actions

- CESAME Groups (1 & 2)
  - Dismantling the Market Practices Barriers
- European Central Bank
  - Target 2 Securities
- Legal Certainty Group (LCG)
  - Dismantling the Legal Barriers
- FISCO Group
  - Dismantling the Fiscal Barriers
- Global Initiatives
  - The Hague Securities Convention
  - UNIDROIT Geneva Securities Convention

The Code of Conduct of 2006: A Missed Occasion

Voluntary Commitment from Market Infrastructures on the following aspects:

- (i) price transparency, in order to enable participants to understand the services they will be provided with, and to understand the prices they will have to pay for these services, including discount schemes; to facilitate the comparison of prices and services, and to enable customers to reconcile ex-post billing of their business flow against the published prices and the services provided;
- (ii) access and interoperability, in order to make it easier for infrastructures to set up links with infrastructures in other countries, and;
- (iii) service unbundling, in order to give participants flexibility when choosing which services to purchase, and accounting separation, providing relevant information on the services provided. These measures are designed:
  - to make transparent the relation between revenues and costs of different services in order to facilitate competition,
  - to make transparent potential cross-subsidies between the different services,
  - to provide users with choice regarding the services available for purchase.
Target 2 Securities: the Gift from ECB

**Efficiency**
- Domestic Euro environment

**Safety**
- Central Bank money

**Market Utility**
- Cost Recovery
- Mutualisation of investment

**Competition**
- Fair Access

---

**T2S Main Principles**

**Outsourcing of securities settlement in Central Bank Money from the CSDs**
- T2S NOT a CSD nor a SSS
- CSD keep their notary function, relations to Issuers and to market participants
- T2S is inclusive of the smaller markets and open to markets beyond the Eurozone
- CSD can become « investor CSDs » (custodians)

**Platform developed on the basis of TARGET 2**
- Goal is to achieve maximum synergies through the use of common IT infrastructure
- Same requirements in terms of system performance (availability, security, contingency)
- Project led by the European Central Bank and the 3CB+

**T2S is a transformational project based on a utility and risk free platform**
- Equivalent to the introduction of the euro
- Pressure on CSDs to reevaluate developments and further consolidate
- Enhanced competition expected from CSDs who may seek to grow custody business

**Potential impact**
- Chance for custodians to compete on a fair basis
- Opportunity for banks to centralise and save on collateral management
- Opportunity for clients to self settle and unbundle custody
I. The EU Decision Making Process

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Two Competing Legal Models for Holding and Transfer of Securities

- Successful transposition of Legal concepts into an efficient Operational system (the incorporation theory leads towards the full dematerialisation)
- Civil Code Ownership Rights for investor
- Direct legal link with the issuer of securities
- No inflation of securities (upper level reconciliation)
- Efficient exercise of Corporate Actions
- Stringent duties on intermediaries

- Successful transposition into Legal concepts of an Operational failure (the operational way to solve the paperwork crisis leads towards the 1994 UCC art 8 reform)
- The Securities Entitlement concept replaces Ownership
- General Opacity of the Custody Chain
- Inflation of Securities (transfer without debit)
- Over voting
- More rights than duties on intermediaries
The Hague Securities Convention: Would Introduce Uncertainty and Additional Risks

- Allow the choice of law, for all proprietary aspects, between the intermediary and its client account holder

- Uncertainty on the applicable law for third parties to the Account Agreement
- Unability to manage the « Equivalent Risk » for local custodians (a same branch would have had to managed its clients accounts in several applicable laws)
- Costs and Risks of the bridge between US law and local laws to be transferred from US global custodians to local providers

Huge Added Costs and Risks for non-US custodians

The Hague Securities Convention Adoption was blocked so far in the EU

The Geneva (UNIDROIT) Securities Convention

State of Play
- An International Convention adopted through two Diplomatic Conferences
  - Final act signed in Geneva by Plenipotentiaries on October 9th 2009
  - China played “empty seat” policy for the signing of the Final Act
  - Open for Signing and Ratification by States
  - Official Commentary to be finalised

Impacts
- The “functional approach” helps propagating the UCC art 8
  - the focalisation on the “intermediary/account holder” relationship introduces globally the main building block of the “securities entitlement” (core right on account holders)
  - The need to adapt Internal law (for signing States) to the Convention will naturally lead to the “tool box” of the UCC art 8
  - global enforcement of securities intermediation based on the securities entitlement model

Next Steps
- UNIDROIT Legislative Guide for Emerging Markets
- Tool to help the implementation of the Geneva Securities Convention

The Convention in particular propagates the following main dysfunctions:
- Propagation of the “transfer without debit” practice
- Recognition in principle of the possibility of inflation of securities
I. The EU Decision Making Process

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A moving and transforming environment

CPSS-IOSCO Principles for Financial Markets Infrastructures

- EMIR (CCPs)
- CSD Regulation
- MIFID Revision

A New Competitive Framework for Market Infrastructures
The European Fragmented Infrastructures

- Mandatory clearing for eligible OTC derivatives
- New requirements for CCP, including prudential rules
- Fight for interoperability (equity & bonds subject to risk mitigation)
- Increased need for collateral for clients
- New CCPs services for new asset classes: OTC Derivatives, Panda market, Sec Lending
- Attempt by further consolidation to support price pressure and maximise economies of scale (EMCF)
- Development of interoperability in equities and derivatives?
- Stock exchange to consolidate CCPs in vertical silos

Potential Clearing houses evolutions

- New CCPs expected evolutions:
  - New players from 2008-2010
  - EMCF Chi-x/Bats LiffeClear
  - Nordic SA CDS
  - EuroCCP Ltd CDS
  - Spain ICE CDS
  - Norway ISIFinance

Upcoming regulation and potential market trends

<table>
<thead>
<tr>
<th>EUROPE</th>
<th>Potential Market Trends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory clearing for eligible OTC derivatives</td>
<td>New CCPs services for new asset classes: OTC Derivatives, Panda market, Sec Lending</td>
</tr>
<tr>
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<td>Increased volume on CCPs</td>
</tr>
<tr>
<td>Fight for interoperability (equity &amp; bonds subject to risk mitigation)</td>
<td>Development of interoperability in equities and derivatives?</td>
</tr>
<tr>
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<td>Stock exchange to consolidate CCPs in vertical silos</td>
</tr>
</tbody>
</table>
Potential Central Securities Depositaries evolutions

Target 2 Securities

Upcoming regulation and potential market trends

<table>
<thead>
<tr>
<th>Upcoming regulation + BCE initiatives</th>
<th>Potential Market needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSD regulation</td>
<td>Potential harmonisation of CSD functions</td>
</tr>
<tr>
<td>T2S</td>
<td>Development by local CSDs of global custodian function and issuer services</td>
</tr>
<tr>
<td>CCM2</td>
<td>Target 2 Securities as a key change of CSDs business model</td>
</tr>
<tr>
<td>Securities Law Directive</td>
<td>Potential competition between CSDs: consolidation/partnerships</td>
</tr>
</tbody>
</table>

Many Thanks for Your Attention!

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Outline of T2S and Impact and possibility to regional settlement in Asia

Taketoshi Mori
The Bank of Tokyo-Mitsubishi UFJ
Transaction Services Division

Agenda

I. What is T2S and how T2S works?

II. Impact and possibility to regional settlement in Asia
I. T2S- Interfaced vs. integrated model

- The Eurosystem had to choose between the two possible ways of settling securities in central bank money:

  - **Interfaced model** → Two platforms: clients’ cash accounts are held with central banks and the clients’ securities accounts are held with the CSDs

  - **Integrated model** → One platform: both central bank cash accounts and securities accounts are held within the same platform

T2S will be based on the **integrated model** and ensure real-time DvP settlement in central bank money
I. T2S - What is the scope of T2S?

**T2S is not a CSD but a service offered to CSDs for settlement only!**

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notary function</td>
<td>Registration of issuer indebtness and investor holdings</td>
<td></td>
</tr>
<tr>
<td>Custody and asset-servicing function</td>
<td>e.g. coupon payments, redemptions, stock splits</td>
<td></td>
</tr>
<tr>
<td>Settlement function</td>
<td>Change of ownership among investors</td>
<td>buyer / seller</td>
</tr>
<tr>
<td>Banking function*</td>
<td>e.g. lending and borrowing</td>
<td>lender / borrower</td>
</tr>
</tbody>
</table>

*only in some (I) CSDs

---

I. T2S - Account structure in T2S

T2S will bring on one technical platform **all securities** and cash accounts to settle **all securities transactions** in central bank money.
I. T2S- T2S main features

- Optimised settlement model
  - CSD securities
  - CeBM cash
- Real-time gross settlement (RTGS), combined with
  - Auto-collateralisation
  - Continuous optimisation
  - Recycling mechanisms
- In addition, T2S provides e.g.
  - Matching services
  - Conditional securities delivery
  - Automated real-time realignment of cross-CSD positions
  - Single account repository
  - Standardised interfaces
  - Message subscriptions and reporting

II. T2S- Schedule of T2S settlement day

<table>
<thead>
<tr>
<th>Start-of-day</th>
<th>Night-time settlement period</th>
<th>Maintenance Window **</th>
<th>Daytime settlement period</th>
<th>End-of-day period</th>
</tr>
</thead>
<tbody>
<tr>
<td>18:45-19:30</td>
<td>19:30-03:00</td>
<td>03:00-05:00</td>
<td>05:00-18:00</td>
<td>18:00-18:45</td>
</tr>
</tbody>
</table>

- Change of Business Date
- Static Data Update
- Instruction Revalidation based on SD maintenance
- Settlement Eligibility
- Liquidity transfers (preparation for the night-time settlement period, such as arrange funding in the T2S DCA)
- Liquidity Transfers
  - Repeat
  - Cycle & sequences
  - End of Cycle reporting
  - Static Data Update*

- Last Cycle:
  - Partial Settlement
  - Multiple Liquidity Provider reimbursement at end of cycle
  - Predefined/Standing Liquidity Transfer Orders
  - End of Cycle Reports
  - Statement and Reports

- Interface services restricted
- Other services unavailable
- Continuous real time Settlement
- Liquidity transfers
- Partial Settlement window
- Intraday DVP cut-off 16:00
- Intraday FOP/BATM/Central Bank operations cut off 18:00

- Release of EoD cash restrictions
- EoD intraday credit reimbursement
- EoD Liquidity Transfers (cash sweep) + forced RTGS Liquidity Transfers
- Technical bookings
- Stop settlement
- Recycling and purging
- Securities Accounts consistency check
- Statement and reports

** There are considerations to align the maintenance window to the maintenance window timeline in T2

* Static Data updates are accepted throughout the night-time settlement but are implemented at the end of cycle sequences if they impact the settlement process.
I. T2S- Optimisation features

- Technical netting reduces the need for cash and securities on transactions to minimise the use of resources.
- Partial settlement splits transactions if only limited resources remain available.
- The additional optimisation algorithms look at all transactions in different ISINs to identify chains of transactions, empty circles, etc.
- Auto-collateralisation creates extra liquidity for settlement via collateral on flow and on stock.

I. T2S- T2S participants: indirect vs. direct connection
I. T2S- Harmonisation

- T2S brings *de facto* harmonisation to settlement (single settlement procedure and schedule, ISO 20022 messages, etc.) and also indirectly fosters further harmonisation of market practices throughout Europe.

- Harmonisation progress is defined in association with T2S stakeholders and builds on market initiatives.

- The Eurosystem co-operates with other relevant EU bodies and groups, like CESAME/EGMI, to align market participants and public authorities for the implementation of harmonised standards within European local markets.

**T2S represents a unique opportunity to dismantle Giovannini barriers and stimulate European harmonisation in post-trading.**

---

I. T2S- Current governance of T2S

[Diagram showing the governance structure of T2S with different groups and boards.]
I. T2S- Financial equilibrium in T2S

Cost recovery period: 7 years after migration

- Development Costs: € 346 Mio
- Running costs: € 60 Mio yearly
- Capital costs: € 88 Mio
- Contingency: € 41 Mio

Volume estimates: +5.5% yearly
Prices: 15 cents per DvP side

Slower traffic increase in 2010
Transaction fee

I. T2S- Additional Fee

Prices for information services
- Agreed with the market (in T2S Advisory Group, AG):
  - target of 25% of T2S annual revenues to be recovered from information services fees
- T2S Programme Board proposal (to be discussed with AG this week):

<table>
<thead>
<tr>
<th>Information services</th>
<th>Price (euro cent)</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2A reports</td>
<td>0.4 cent</td>
<td>Per business item in any A2A report generated</td>
</tr>
<tr>
<td>A2A queries</td>
<td>0.7 cent</td>
<td>Per queried business item in any A2A query generated</td>
</tr>
<tr>
<td>U2A queries</td>
<td>10 cent</td>
<td>Per executed search function</td>
</tr>
<tr>
<td>Messages bundled into a file</td>
<td>0.4 cent</td>
<td>Per message in a file</td>
</tr>
<tr>
<td>Transmissions</td>
<td>1.2 cent</td>
<td>Per transmission (= primarily per inbound and outbound message)</td>
</tr>
</tbody>
</table>
I. T2S- Schedule

So far, 30 CSDs have committed to work towards joining T2S

Settlement in euro and the three Scandinavian currencies
I. T2S- Multi-currency reaction

The multi-currency dimension

Extension of T2S to other European currencies contributes to the wider policy objective of a truly integrated capital market on a European scale (strongly supported by the ECOFIN Council in February 2007).

T2S unit costs are very sensitive to scale. Non euro business would help lowering down the T2S fees

The Currency Participation Agreement (CPA) shall govern the relationship between the Eurosystem and non-euro area central banks that wish to make their currency available in T2S.

Finalisation of the Framework Agreement in parallel with the CPA

I. T2S- Multi-currency reaction

CPA negotiation framework with non-euro central banks

The following non-euro central banks are currently participating to the CPA negotiations with the Eurosystem:

- Bank of England
- Swiss National Bank
- Danmarks Nationalbank
- Sveriges Riksbank
- Norges Bank
- Central Bank of Iceland

Other non-euro central banks, in Central and Eastern Europe are reluctant to invest in an infrastructure which will become obsolete when they join the euro

The non-euro central banks will sign the CPA provided that
(i) all contractual aspects are solved, and
(ii) there is a business case at national level to have the currency in T2S.
I. T2S- T2S benefits for USERS

- significantly lower settlement fees for domestic and, in particular, cross-border transactions
- Possibility to access all securities from potentially one CSD
- possibility to optimise collateral and liquidity management
- reduced back-office costs by streamlining interfaces and centralising settlement activity
- new business opportunities and access to new markets for asset-servicing

I. T2S- T2S benefits for markets

- fostering a higher level of competition in Europe’s post-trade industry
- contributing to harmonisation of clearing and settlement in Europe, thereby promoting a Single Market for financial services
- reducing the cost of capital for firms, thus contributing to economic growth
- positively impacting financial stability by reducing settlement risks on cross-border transactions
- offering easy portfolio diversification to investors
- enabling issuers to easily reach European investors
I. T2S - Advantage of T2S

- Cross-border settlement as inexpensive as domestic
- Harmonising settlement to make Europe a true Single Market
- The 5 big wins of T2S
- Users will only need an account at one CSD to settle any transactions in securities within T2S
- Create new opportunities for competition

II. Asian Bond Infrastructure Overview
II. Impact of T2S –
Difference Between Europe and Asia

<table>
<thead>
<tr>
<th></th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation</td>
<td>Less regulated</td>
<td>Strict control on FX Quotas etc.</td>
</tr>
<tr>
<td>Tax</td>
<td>Complex</td>
<td>Complex</td>
</tr>
<tr>
<td>Currency</td>
<td>Euro+Krone (T2S)</td>
<td>Multi-currency</td>
</tr>
<tr>
<td>Character</td>
<td>Alphabet</td>
<td>Multi-language</td>
</tr>
<tr>
<td>Scope</td>
<td>Equity+ Bond (T2S)</td>
<td>Bond (+Equity)</td>
</tr>
<tr>
<td>Transaction volume</td>
<td>Large</td>
<td>Increasing</td>
</tr>
<tr>
<td>CSD Function</td>
<td>Handling Gov Bonds</td>
<td>Gov Bonds handled not in some CSDs</td>
</tr>
<tr>
<td>Arranger/Promoter</td>
<td>ECB</td>
<td>ADB</td>
</tr>
</tbody>
</table>

II. Impact of T2S –
T2S process and experience

- At the concept stage of establishing, T2S was said to be pipe dream.
- First announcement of T2S was made in July 2006. Go live Sep 2014. It takes more than 8 years after announcement.
- T2S enhanced step by step and improved gradually.
- Cross-border transaction cost is more than 10 times of domestic one even in Europe, which is the main target of T2S.

<table>
<thead>
<tr>
<th></th>
<th>Average Cost per transaction (2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian CSD</td>
<td>Euro 0.45</td>
</tr>
<tr>
<td>Greek CSD</td>
<td>Euro 2.8</td>
</tr>
<tr>
<td>DTCC US</td>
<td>$ 0.184 (Euro 0.24)</td>
</tr>
<tr>
<td>Fedwire Secs US</td>
<td>$ 0.32 (Euro 0.42)</td>
</tr>
<tr>
<td>T2S</td>
<td>Euro 0.15 (2014)</td>
</tr>
</tbody>
</table>
II. Impact of T2S – How can we utilize T2S in Asia

- It is impossible to join T2S from Asia due to different time zone.

- T2S has multi-function and complex IT.

- Extract essential function from T2S in order to set up regional settlement. For example, it uses cloud computing connection, etc.

- Modify and customize T2S in Asian fashion

II. Impact of T2S – Is it possible to overcome Issues in Asia?

- Collect and analyze Market Information precisely.

- Recommendation in order to change and enhance markets

- Strict Regulation ⇒ Relaxation and harmonization

- Settlement issues ⇒ adopt ISO20022 and harmonization settlement cycle and other items

⇒ Strong leadership and Cooperation are essential.
II. Impact of T2S – What is your thought or comment? -Regional Settlement similar to T2S in Asia-

1. Feasible or too far, to set up Asian regional settlement in the future.

2. What is the essential condition?

3. What is the necessary actions and factors?

4. Any other comment
Thank you!

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(Head of Securities Market Infrastructure)

Transaction Services Division
The Bank of Tokyo-Mitsubishi UFJ, Ltd.

Asian Regional Director & Steering Committee Member of
Securities Market Practice Group

ISO 20022 SEG Member

ISSA Corporate Actions WG Member

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- Custody fees are typically calculated by applying a certain fee rate to the asset balance under custody and a certain amount to the number of transactions. Other fees apply, in addition, to particular types of transactions. Please contact us for further details.
- BTMU Profile (This notification complies with the Japanese "Financial Instruments and Exchange Law" as of September 30th, 2007):

<table>
<thead>
<tr>
<th>Corporate Name:</th>
<th>The Bank of Tokyo-Mitsubishi UFJ, Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration Number:</td>
<td>Director General of the Kantō Local Finance Bureau Registration Number 5</td>
</tr>
<tr>
<td>Head Office:</td>
<td>7-1, Marunouchi 2-Chome, Chiyoda-ku, Tokyo 100-0005 Japan</td>
</tr>
<tr>
<td>Main business areas:</td>
<td>Banking business, Registered financial institution business</td>
</tr>
<tr>
<td>Member of</td>
<td>Japan Securities dealers Association, The Financial Futures Association of Japan</td>
</tr>
<tr>
<td>Type II Financial Institution Firms Association</td>
<td></td>
</tr>
<tr>
<td>Designated institution for ADR</td>
<td>Japanese Bankers Association: +81-(0)3-570-017109 +81-(0)3-5252-9772</td>
</tr>
<tr>
<td>Financial Instruments Mediation Assistance Center:</td>
<td>+81-(0)3-570-64-5005</td>
</tr>
</tbody>
</table>

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ABMF Workplan
- Phase 1 & 2 -

ABMF activities in Phase 1

• **28 Sept 2010: 1st ABMF meeting** in Tokyo, Japan
• **13-14 Dec 2010: 2nd ABMF meeting** in Manila, the Philippines
• **16-17 Feb 2010: 3rd ABMF meeting** in KL, Malaysia
• **Market consultations:**
  – PRC in April, ASEAN in May, and Republic of Korea in June
  – Workshops in Brunei Darussalam and Lao PDR on 30 May and 1 June
• **June 30 - 1 July: 4th ABMF meeting** in Jeju, Korea
• **1 Aug: ABMF-J seminar** for the Japanese institutional investors
• **12-13 Sept: 5th ABMF meeting** in Bali, Indonesia
• **20 Oct: Reporting by the Chairs to ABMI TF3** in Seoul, Korea
• **8-9 Dec: 6th ABMF meeting** in Beijing, PRC
Schedule up to the December

- **Sept 20: Sibos** in Toronto, Canada
  Accelerating Asian Markets integration and harmonization
  09:30 - 10:30am Community room 3
- **Oct 20: ASEAN+3 ABMI Task Force Meeting** in Korea
  - Progress on Phase 1 and workplan for Phase 2
  - Nomination and reappointment of the ABMF national members and experts by the ASEAN+3 governments
- Early Dec: ASEAN+3 Deputies meeting
  - Submission of the final draft
- **December 2011: 6th ABMF meeting** in China
  - Finalizing work plan for the Phase 2
  - Discussing idea for the Phase 2 study
- **By the end of December 2011:**
  Publication of the Report through ABO

SF1 Phase 2 activities

1. Organize a forum mainly composed of regional SROs and regulators
2. Conduct a study to examine market needs for common bond issue
3. Create a common bond issue program
4. Consider a pilot issue
5. Launch a pilot issue based on the common issue program
**SF2 Phase 2 activities**

1. Continue identification of transaction flows, messaging and market practices.
   - The scope will be expanded to issuance, redemption, and interest payment of government and corporate bonds, including some corporate action related to corporate bonds.
   - In addition, we continue to share information on LEI and improvements in data collection.

2. ISO 20022 Fit-and-gap analysis

3. Propose a roadmap to standardize and harmonize

---

**Additional topic**

- Credit rating: organize a public conference with ACRAA
  - ACRAA is conducting a study to examine the differences in ratings among the members, and explore a regional credit curve and rating scales.
  - Hopefully, the conference can be organized in 1H 2012.

- Others: When requested by TF3
Schedule for 1H 2012

- Dec 2011: Publication of the Report for Phase 1 study
- 8-9 Feb 2012: 7th ABMF meeting in Hong Kong, China
  - organize 1st ABMF public conference to disseminate our publication
  - For SF1, preparing a survey to identify differences in bond issuance program. And additional nomination and reshuffle of the members.
  - For SF2, preparing a survey to identify all transaction procedures for bond issuance, interest payment, redemption, and corporate actions

- March 2012: ABMI Task force meeting
  - First reporting of Phase 2 to TF3

- April or May 2012: 8th ABMF meeting
  - Evaluate and approve the survey questions
  - Organizing a public conference to invite non-ABMF institutions (potential issuers and investors) to polish the survey questions

- May - June: 2012: Conducting the surveys

Schedule for 2H 2012

- July – August 2012: country visits
  - Consider proposals to be included in the first draft
  - For SF1, drafting a proposal for a common issuance program
  - For SF2, proposal on messaging standard harmonization

- Sept 2012: 9th ABMF meeting
  - Discussion on the proposals.
  - Additional survey if necessary

- Oct 2012: Second reporting to ABMI TF3
- Nov 2012: AFDM+3
- Dec 2012: 10th ABMF meeting
  - Reporting the draft recommendations to the members.
  - Planning the Phase 3 of ABMF
Schedule for 2013

- **Feb 2013: 11th ABMF meeting**
  - Approving the draft report to ABMI TF3
- **March 2013: Third reporting to ABMI TF3**
  - Adopting work plan for phase 3
- April 2013: Submitting the report to AFDM+3
- **April 2013: 12th ABMF meeting**
- **May 2013: Recommendations to be approved by ASEAN+3 Finance Ministers**
- **June 2013: 13th ABMF meeting**
- **3Q 2013: 14th ABMF meeting**
  - Publication of the report in 3Q 2013.
- Continue to Phase 3 of ABMF