

Business Guideline for Financial Market Infrastructures

1. Purpose

The purpose of this Guideline is for the Financial Services Commission, in supervising and regulating the financial market infrastructures in the capital market pursuant to the Financial Investment Business and Capital Markets Act and its subordinate regulations ("Related Regulations", hereinafter), to provide the business standards that the financial market infrastructures under its supervision must observe in conducting business in a stable and efficient manner in accordance with the International Standards (hereunder refers to "the Principles for Financial Market Infrastructures" issued by the Committee on Payment and Settlement Systems [CPSS, currently CPMI] of the Bank for International Settlements and the International Organization of Securities Commissions (IOSCO) in April 2012).

2. FMIs subject to this Guideline

This Guideline shall apply to clearing organizations, settlement organizations and central securities depositories as defined pursuant to the Related Regulations ("FMI", hereinafter) that fall under any of the following sub-paragraphs:

A. Clearing Organizations : Korea Exchange, which provides clearing services in the securities and derivatives markets in accordance with the Related Regulations, and any entity authorized as a clearing company for transactions of financial investment instruments under Related Regulations.

B. Settlement Organizations : Korea Securities Depository, which provides settlement services in the securities market, and Korea Exchange, which provides settlement services in the derivatives market, both in accordance with the Related Regulations.

C. Central Securities Depository : Korea Securities Depository, which provides centralized securities deposit services.

3. Applicability

In order to conduct activities and services permitted by the Related Regulations in line with this Guideline, an FMI shall prescribe internal rules (which shall mean the internal rules of the FMI that become legally binding and enforceable after it is approved by or reported to the Financial Services Commission during the process of its establishment and revisions). Provided, however, that each FMI may determine different means of compliance with this Guideline in consideration of the characteristics, etc. of its services and activities as permitted in accordance with the Related Regulations.

4. Common Standards for FMIs

An FMI shall comply with the following standards in accordance with the application matrix as prescribed in the Appendix.

A. Legal basis

(1) An FMI shall have internal rules and procedures that are clear, understandable, and consistent with the Related Regulations.

(2) The result of clearing or settlement performed by an FMI shall be characterized by legal finality and not be subject to invalidation, avoidance, termination or cancellation even under extreme situations such as an insolvency of a participant (which shall mean the direct counterparty of the FMI in relation to the FMI's clearing and settlement activities).

B. Governance

(1) An FMI shall have governance arrangements (which includes the chief executive officer, the board of directors and its sub-committees, auditing bodies such as the standing auditor and the audit committee, general meeting of shareholders, executive officers and other business management arrangements) that ensure independence and transparency under the Related Regulations.

(2) The governance arrangements of an FMI shall be consistent with the Related Regulations, and the FMI shall prescribe organization, roles, responsibilities and compensation framework of the governance arrangements in its articles of incorporation and internal rules.

(3) An FMI shall have a standing unit with expertise in the risk management of the FMI (hereunder referred to as "Risk Management Unit"), and the Risk Management Unit shall periodically review the risk management status of the FMI and report it to the chief executive officer or the board of directors. The Risk Management Unit may seek consultation from participants and experts in risk management, IT, law and accounting in monitoring the risk management status of the FMI.

(4) An FMI shall make transparent disclosure of major business decisions to the public through the FMI's website or other means of disclosure as determined by the Related Regulations.

C. Overall Risk Management

(1) An FMI shall establish and maintain a sound risk-management framework for comprehensive management of legal, credit, liquidity, operational, and other relevant risks related to clearing or settlement operations of financial investment instruments (hereunder referred to as "overall risks").

(2) An FMI shall establish an internal control system for risk-management (which shall include tangible infrastructure such as governance arrangements including the Risk Management Unit, human resources and electronic facilities related to risk-management, as well as intangible infrastructure such as the reporting framework related to risk-management) to promptly identify and respond to the overall risks.

(3) An FMI shall provide necessary information for the relevant parties including its participants so that they may objectively assess the risks and risk-management capacities of the FMI.

(4) An FMI shall establish risk-mitigating policies when it deems that it is exposed to excess third-party risk in relation to its operations such as with its participants, settlement banks, etc.

(5) An FMI shall monitor and manage related risks when one or more business link between or among FMIs such as inter-Clearing Organization or inter-CSD links.

D. Credit Risk

(1) An FMI shall determine the financial resources (resources pre-funded in the FMI such as the default fund) necessary to conduct its business stably in extreme but plausible market conditions, and shall periodically review the adequacy of the size of the financial resources.

(2) An FMI shall establish a standard for the use and management of financial resources prefunded to cover credit risk (including the sequence of using financial resources in covering credit losses as usually referred to as the default waterfall).

E. Liquidity Risk

(1) An FMI may arrange credit lines, etc. by way of precaution against lack of liquidity if necessary for the management of liquidity risk.

(2) An FMI shall establish the criteria for determining lack of liquidity, assuming extreme but plausible market situations, and regularly review the appropriateness of such criteria.

F. Collateral

(1) An FMI shall prescribe in its internal rules and disclose to the public the collateral management criteria on collateral eligibility, methods for determining collateral valuation and haircut ratios, concentration limits, etc. considering overall risks when receiving collateral including cash margins from the participants.

(2) An FMI shall take into account the liquidity in the financial market following stressed market conditions when determining eligible collateral.

(3) An FMI shall not allow a participant to post its own debt or equity securities as collateral.

(4) An FMI shall mark the collateral to market on a daily basis, and shall annually review the adequacy of its haircut calculation methodologies, etc.

(5) An FMI shall not reuse collateral to increase its own profitability but may invest cash collateral received from a participant in sound financial institutions on the participant's behalf.

G. Settlement

(1) An FMI shall clearly define the settlement deadline and the point at which settlement is final, in order to reduce settlement risk.

(2) An FMI shall adopt Delivery vs. Payment method as its general rule for settlement.

(3) In case where an FMI uses commercial banks for money settlement, the FMI shall monitor the relevant risks of the settlement banks, and it shall replace a settlement bank if the settlement bank has high risk or improper risk management.

(4) An FMI shall clearly specify in its internal rules the procedure for delivery or transfer and related processes for financial investment instruments, physical instruments and assets.

H. Participant Default Rules and Procedures

An FMI shall establish and publicly disclose procedures for managing a participant default. The default procedure shall include, but not be limited to, the following items:

(1) Obligation of the FMI to promptly disclose to the other participants that an event of default has arisen;

(2) Measures to prevent contagion of risk, such as suspension and close-out of financial investment product transactions of the participant who has not fulfilled its settlement obligations (hereunder referred to as "Defaulting Participant");

(3) Measures to liquidate the collateral posted with the FMI by the Defaulting Participant; and

(4) Measures to compensate for the loss resulting from the default

I. General Business Risk

(1) An FMI shall monitor and manage its general business risk including the potential loss from execution of business other than the clearing and settlement services, unexpected and excessive increase of operating expenses, etc.

(2) An FMI shall hold liquid net assets funded by equity (such as common stock, reserves, retained earnings, etc) equivalent to or more than six months of current operating expenses to cover general business risk.

J. Custody and Investment Risk

(1) In case where an FMI places the financial products or physical assets of its own or its participants in custody with a third party (hereunder referred to as "custodian"), it shall establish a standard for evaluating the creditability and financial stability of custodians, and shall evaluate its custodians on a regular basis in accordance with such standard. In case where a custodian falls below the standard, the FMI shall take necessary measures such as replacement of such custodian.

(2) With respect to its own and its participants' assets that are placed in custody, an FMI shall not allow the placement to be concentrated with one particular custodian, and the FMI shall manage and ensure that its own or its participants' assets held in custody by the custodian are not treated as the custodian's or a third person's assets.

(3) A custodian shall be a financial institution regulated by the Financial Services Commission in accordance with the Related Regulations.

(4) Cash and other assets that the participants of an FMI have deposited with the FMI shall be invested in a financially sound manner such as investing in a highly liquid and safe asset or depositing in a sound financial institution.

K. Operational Risk

- (1) An FMI shall have business continuity plans that can address possible events that may cause disruption to the stable and efficient operation of electronic systems and services.
- (2) An FMI shall manage its operations so that a security risk does not arise in the electronic systems due to an increase in business or linkage with external systems.
- (3) An FMI shall have regular drills with various scenarios simulating disastrous events causing disruptions in its proper operations. Such disastrous events shall include physical accidents such as blackouts and system malfunctions, and also participant default management, etc.
- (4) Even under the worst case scenario, any suspension of an FMI's operations shall not exceed the time pre-defined by the Financial Services Commission. To this end, an FMI shall have necessary secondary processing facilities such as data processing system, back-up power system, and data back-up system, etc.

L. Participation

- (1) An FMI shall establish a fair and transparent procedure for granting participation of an entity in accordance with the standards prescribed by the Related Regulations.
- (2) An FMI shall specify participation requirements and withdrawal criteria. Accordingly, it shall regularly review each participant's fulfillment of its participation requirements.
- (3) An FMI should not be directly affected by the overall risks caused by the participants' clients. In this case, an FMI may supervise its participants to check whether they adequately manage the overall risks caused by their clients in a high-risk market such as the derivatives market.
- (4) An FMI shall have clear internal rules, etc. prescribing the calculation, imposition of all financial obligations to its participants (costs at the time of participation such as the participation fees, regular costs such as the operational fees, and other reserves,

funds, etc. contributed by participants regardless of its purpose) and its return to its participants (assets refunded at the loss of participation, etc.).

(5) An FMI shall require its participants to fulfill all their clearing and settlement obligations (including the settlement amount and margin, etc.) from their own accounts, regardless of whether the clearing and settlement is due to their proprietary or client transactions.

M. Efficiency and Effectiveness

An FMI shall consider convenience, costs and benefits of its participants when selecting or replacing its clearing and settlement frameworks and systems.

N. Information Disclosure and Communication

(1) An FMI shall regularly conduct self-assessment on whether its internal rules and operations observe the International Standards, and disclose the results to the public.

(2) An FMI shall have efficient communication procedures with its participants, settlement banks, liquidity providers, custodians and other FMIs for an effective clearing and settlement operation.

(3) An FMI shall disclose its internal rules, procedures and statistics related to its core operations to the participants.

5. Standards for Clearing Organizations

Clearing Organizations shall observe the below standards in addition to the standards prescribed in paragraph 4.

A. Credit Risk

A Clearing Organization shall have sufficient financial resources taking into account the maximum predictable credit exposure ('Maximum Credit Exposure' hereunder), and shall assess regularly the adequacy of the size of the financial resources.

(1) 'Maximum Credit Exposure' shall be calculated with various stress scenarios including the default of at least one participant with the largest credit exposure (at least two participants with the largest exposure, in the case of an authorized central counterparty for financial investment instruments under the Related Regulations) and its affiliates in extreme but plausible market conditions.

(2) A Clearing Organization shall conduct reverse stress tests to define the extreme scenarios and market situations that its pre-funded financial resources are capable of handling.

(3) A Clearing Organization shall regularly conduct stress tests and reverse stress tests, and when there are major changes in the risk management models for those tests, it shall validate the propriety through the Risk Management Unit.

B. Margin

A Clearing Organization shall have a margin system (including initial margin and variation margin) that can cover the risk during the close-out period of open positions arising from a default of a participant .

(1) A Clearing Organization shall prescribe matters such as the type of margin, its size, valuation and payment timeline, etc. considering the characteristics of the products subject to clearing.

(2) A Clearing Organization shall use the most recent price formed in a highly liquid market with transparent trade information when calculating margin, and it shall have a separate pricing methodology in preparation of cases where the market price is unavailable or unreliable.

(3) A Clearing Organization, when calculating margin, shall assume a minimum of a five-day liquidation period (risk exposure period) for OTC derivatives, and a minimum of a two-day period for other financial instruments, and the margin system shall fulfill at least 99% confidence level considering the potential future risk exposure.

(4) A Clearing Organization shall regularly conduct back tests and sensitivity analysis that fulfill at least 99% confidence level in future risk exposure distribution to validate the propriety of its margin calculation methodologies, and shall revise its margin calculation methodologies if it is deemed necessary according to the results of such tests and analysis.

(5) A Clearing Organization shall bear operational capacity and authority for calling intra-day margin to the participants.

(6) A Clearing Organization shall regularly review its margin calculation methodologies, and in the event of major changes to such methodologies, the appropriateness of such changes shall be reviewed by the Risk Management Unit.

C. Liquidity Risk

A Clearing Organization shall maintain enough liquid assets to enable it to fulfill its settlement obligations in a situation causing the maximum predictable liquidity needs ('maximum liquidity needs' hereunder).

(1) In measuring maximum liquidity needs, various stress scenarios including the default of at least one participant with the largest liquidity exposure and its affiliates (two participants with the largest exposure, in case of a central counterparty for financial investment instruments under Related Regulations) in extreme but plausible market conditions shall be assumed.

(2) A Clearing Organization shall conduct regular stress tests, and when making major changes, it shall validate the propriety of the risk management model for stress tests through the Risk Management Unit.

D. Protection of Clients

A Clearing Organization shall have rules to protect clients' positions of a participant, collateral (including margin) and other assets from the default or insolvency of that participant. The internal rules of a Clearing Organization shall include, but not be limited to, the following items, along with the specific procedures:

- (1) To segregate the clients' assets from the participants' assets;
- (2) The clients' assets shall not be included in the default participants' liable assets or be used for payment (including compensation for damages) for another participant or client unless the client was accountable for the participant's default by causing the default itself, etc; and
- (3) The clients of the defaulting participant shall be able to port their accounts to another participant while maintaining their original positions and collaterals.

6. Standards for Central Securities Depositories

A Central Securities Depository shall observe the below standards in addition to the standards prescribed in paragraph 4.

A. A Central Securities Depository shall have rules and procedures including, but not be limited to, the following items to protect the issuer and holder of securities:

- (1) Prevention and prohibition of unauthorized issue and disposal of securities;
- (2) Regular reconciliation of holding securities ; and
- (3) Prohibition of overdrafts and debit balances in securities account

B. A Central Securities Depository shall maintain securities in immobilized or dematerialized form to ensure its book-entry transfer.

C. A central securities depository shall segregate its own assets from the participants' securities, and participants' securities from other participants' securities.

<Appendix>

Standard Application Matrix per FMI

Standards	Clearing Organization	Settlement Organization	CSD
Common standards for FMIs			
A. Legal Basis	•	•	•
B. Governance	•	•	•
C. Overall Risk Management(Comprehensive risk Management, FMI link)	•	•	•
D. Credit Risk	•	•	
E. Liquidity Risk	•	•	
F. Collateral	•	•	
G. Settlement(Settlement finality, Money settlement, Physical delivery, Exchange-of-value settlement)	•	•	
H. Participant Default Rules and Procedure	•	•	•
I. General Business Risk	•	•	•
J. Custody and Investment Risk	•	•	•
K. Operational risk	•	•	•
L. Participation(Access and participation, Tiered participation)	•	•	•
M. Efficiency and Effectiveness	•	•	•
N. Information Disclosure and Communication(Disclosure of rules, Communication procedure)	•	•	•
Standards for Clearing Organizations			
A ~ C. Credit Risk/Margin/Liquidity Risk	•		
D. Protection of Clients(Segregation and Portability)	•		
Standards for Central Securities Depositories			
			•