EXHIBIT C

A copy of JSCC's most recent disclosures that are necessary to observe the PFMIs, including the Disclosure Framework and Assessment Methodology for the PFMIs ("Disclosure Framework"), and any other such disclosure framework issued under the authority of the International Organization of Securities Commissions that is required for observance of the PFMIs. The Disclosure Framework should be completed in accordance with Section 2.0 and Annex A therein, and it should fully explain how JSCC observes the PFMIs. JSCC should also provide a URL to the specific pages on its website where such disclosures may be found.

JSCC's most recent PFMI Disclosure is attached and available on JSCC's website as follows:
http://www.jscc.co.jp/en/fmi-pdf.html

Principles for Financial Market Infrastructures Disclosure

Japan Securities Clearing Corporation

Contents

Figures

Responding institution: Japan Securities Clearing Corporation
Jurisdiction in which the FMI operates: Japan
Authorities regulating, supervising, or overseeing the FMI: Japan Financial Services Agency (Regulation and Supervision), Bank of Japan (Oversight)
Date of Disclosure: March 31, 2015

This document is also available at www.jscc.co.jp/en/.

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I. Executive Summary

Japan Securities Clearing Corporation ("JSCC") is the primary clearing house in Japan, providing clearing services ("Clearing Businesses") for cash products on Tokyo Stock Exchange and other exchanges/PTS in Japan, listed derivatives on Osaka Exchange, credit default swaps ("CDS"), interest rate swaps ("IRS"), and OTC Japanese Government Bond ("JGB") transactions.

JSCC is licensed under the Financial Instruments and Exchange Act ("FIEA")[1] and directly regulated by the Japanese Financial Services Agency ("JFSA"). In December 2013, the JFSA released Comprehensive Guidelines for Supervision of FMIs, which incorporates the Principles for Financial Market Infrastructures ("PFMI"), which is published by the Committee on Payment and Settlement Systems-Board of the International Organization of Securities Commissions ("CPSS-IOSCO")[2], into Japanese regulations. JSCC is also subject to oversight [3] by the Bank of Japan ("BOJ") of financial market infrastructures, as provided in the Bank of Japan Act[4]. JSCC is fully compliant with the PFMIs and the JFSA's Guidelines[5]. This disclosure provides details in accordance with the "Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology," to demonstrate its compliance. Unless otherwise specified, this disclosure is current as of December 2014.

JSCC understands the necessity of a robust and comprehensive system for risk management to fulfill its responsibility to stably provide its clearing services. To handle the credit, liquidity, custody, operational, and other risks to which it is exposed, JSCC has established a solid risk governance structure incorporated into its organization, including the Board of Directors and Risk Oversight Committee.

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[1] FIEA Article 156-2

[2] Name at the time the PFMI's release. On September 1, 2014, the Committee on Payment and Settlement Systems (CPSS) changed its name to the Committee on Payments and Market Infrastructures ("CPMI").

[3] In March 2013, BOJ formulated the "The Bank of Japan Policy on Oversight of Financial Market Infrastructures," clarifying the adopting of the PFMIs as criteria to be used for evaluating the safety and efficiency of systemically important financial market infrastructures.

[4] Bank of Japan Act Article 1

[5] In "Implementation monitoring of the PFMIs : Level 2 assessment report for central counterparties and trade repositories – Japan" publicized by CPMI-IOSCO on February 26, 2015(the link below), Japan is rated as having completely and consistently adopted the PFMIs applicable for CCPs and TRs.

Link to the report : https://www.iosco.org/library/pubdocs/pdf/IOSCOPD476.pdf

II. Summary of Changes since the Previous Update

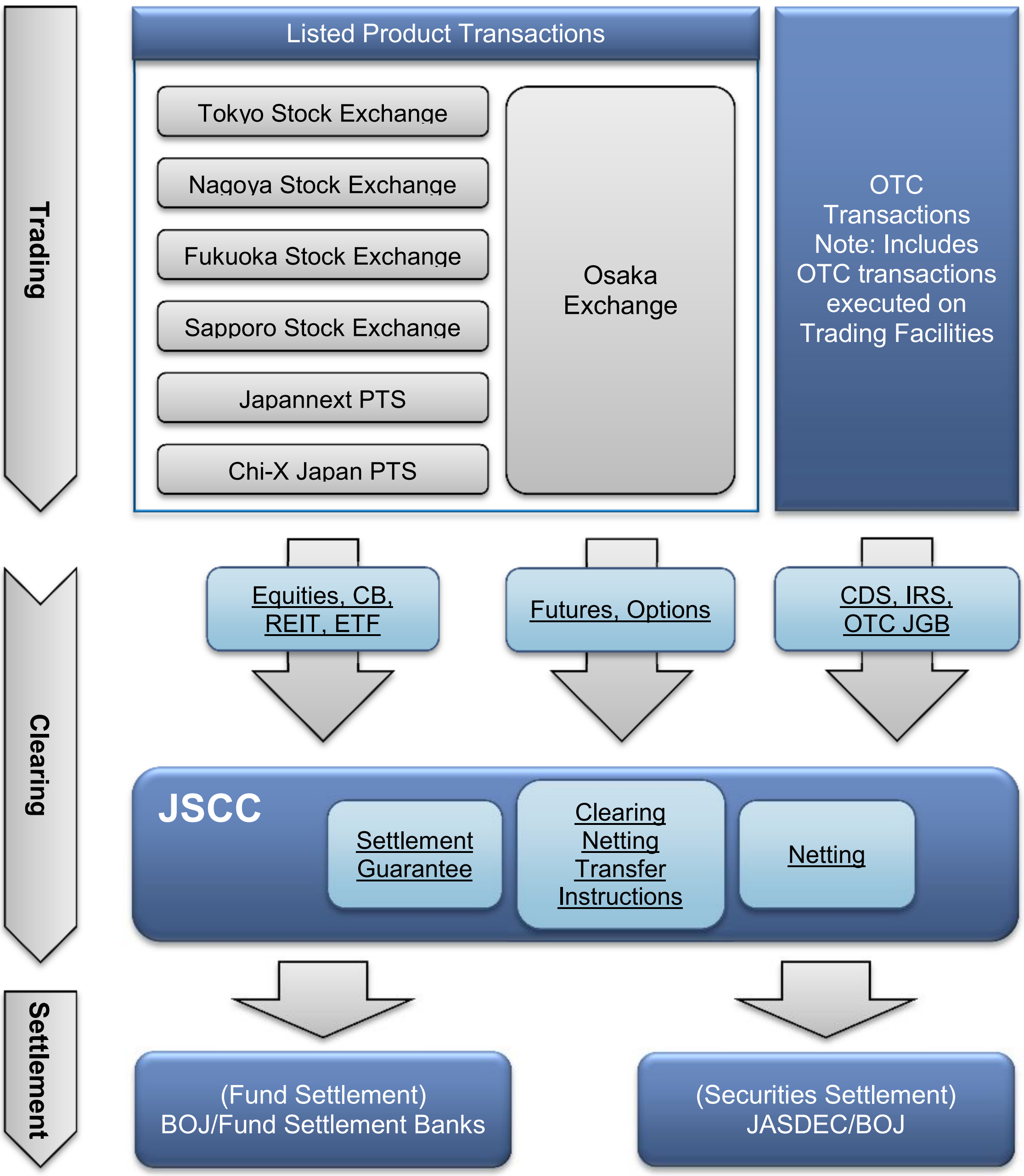
This document is JSCC’s first disclosure pursuant to the “Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology” released by CPSS-IOSCO in December 2012. As Principles 11 (Central Securities Depositories) and 24 (Disclosure of Market Data by Trade Repositories) do not apply to JSCC’s business, these principles are not covered in this disclosure.

III. General Background of the FMI

Overview of JSCC's Background and Clearing Business

JSCC is a majority-owned subsidiary of Japan Exchange Group, Inc. ("JPX Group"). JPX Group's other subsidiaries include Tokyo Stock Exchange ("TSE"), Osaka Exchange ("OSE"), and Japan Exchange Regulation. JSCC was established on July 1, 2002 and licensed as a central counterparty ("CCP") on January 7, 2003, making it the first licensed clearing organization in Japan.

General Background of the FMI III-1: Role of JSCC in the Financial Market



JSCC forms the core of clearing and settlement for the Japanese market, clearing all cash product transactions executed on all Japanese securities exchanges and PTS including TSE, listed derivatives transactions executed on OSE, as well as credit default swaps, interest rate swaps, and OTC JGB transactions.

General Background of the FMI III-2: Cleared Products

Category	Details
Cash Products	All trades executed on domestic stock exchanges and two proprietary trading systems
Index Futures	TOPIX Futures mini-TOPIX Futures TOPIX Dividend Index Futures Nikkei 225 VI Futures Nikkei 225 Dividend Index Futures Nikkei 225 Futures Nikkei 225 mini JPX-Nikkei 400 Futures TOPIX Banks Index Futures TOPIX Core30 Futures TOPIX Core30 Dividend Index Futures TSE REIT Index Futures DJIA Futures CNX Nifty Futures RN Prime Index Futures
Index Options	TOPIX Options Nikkei 225 Options
Individual Securities Options	Individual Securities Options
Bond Futures and Options	10-year JGB Futures mini 10-year JGB Futures 20-year JGB Futures 5-year JGB Futures Options on 10-year JGB Futures
Credit Default Swaps	Series of Markit iTraxx Japan 50 index Single Name CDS
Interest Rate Swaps	JPY LIBOR (3M and 6M) JPY TIBOR (3M and 6M) Overnight Index Swap
OTC JGB Transaction	Outright JGB Cash-secured Bond Lending Transaction Repo Transaction

General Background of the FMI III-3: Clearing Statistics

Listed Products	
Cash Products Index Futures Options Bond Futures	http://www.jscc.co.jp/en/listed_products

OTC Derivatives	
Credit Default Swaps	http://www.jscc.co.jp/en/credit_default_swap
Interest Rate Swaps	http://www.jscc.co.jp/en/interest_rate_swap

OTC JGB	
OTC JGB	http://www.jscc.co.jp/en/jgbcc

General organization of the FMI

As a vital financial market infrastructure ("FMI") in Japan, JSCC employs a governance structure which ensures fairness and robust risk management. At the highest level, JSCC's Board of Directors is composed of three standing directors and nine non-executive directors. The board is responsible for approving high-level policies and budgets, and assessing the controls and rules of JSCC business. It is required to comply with relevant laws and regulations, and is subject to review by statutory auditors and at the annual general shareholders meeting.

JSCC executes business plans based on resolutions of the Board of Directors, realizing JSCC's corporate philosophy, and overseeing day-to-day operations. The advisory committees of each product area, which are composed of Clearing Participants of the relevant product area and other entities, also function to incorporate the opinions of Clearing Participants into JSCC's governance. For matters involving actions against Clearing Participants, JSCC consults with the Disciplinary Measures Assessment Committee, which is composed of members that are independent from JSCC and Clearing Participants. See Principle 2 (Governance) for further details.

According to the internal provisions of JSCC's Risk Management Policy, which is applied to all of its Clearing Businesses, and the Business Rules of each Clearing Business, JSCC has established a framework for managing the specific risks of each business, including eligibility criteria for Clearing Participants and a robust collateral system for initial margin and the Clearing Fund.

From the perspective of managing the credit risk of Clearing Participants, JSCC defines and publicizes clearing qualifications separately for each of its Clearing Businesses, with the criteria for each aligned with the nature of that business. Criteria for participation are reasonable, clear, and publicly available, focusing primarily on the entity's management structure, financial conditions, and business capability. These are established based on the assumption that Clearing Participants are registered with the JFSA. JSCC continually monitors each Clearing Participant's management structure, financial condition, and business execution capability. If JSCC recognizes a problematic situation, it has the discretion to suspend clearing services in whole or in part for that Clearing Participant, or revoke its clearing qualification, as necessary. See Principle 18 (Access and Participation Requirements) for further details

As of December 2014, there were a total of 121 listed product Clearing Participants, 11 CDS Clearing Participants, 23 IRS Clearing Participants, and 37 OTC JGB Clearing Participants.

Margin requirements are calculated using SPAN® for listed futures and options, while the Clearing Fund is designed to cover the default of the participant with the largest exposure in extreme but plausible market conditions. For CDS, IRS and OTC JGB transactions, initial margin requirements are calculated using an appropriate look-back and holding period for each, while Clearing Fund contributions are calculated to cover the expected loss using stress scenarios for each clearing business.

JSCC marks open positions to market at least once a day for all products, and more frequently for some products. In addition JSCC makes intra-day margin calls, which are required to be met by a specific time on the same business day, regularly in the IRS Clearing Business and when the market moves beyond a predetermined threshold in other Clearing Businesses. JSCC is able to make ad-hoc margin calls if it deems necessary. See Principle 6 (Margin) for further details.

In the event of default, JSCC will suspend all delivery of settlement funds and securities between the defaulting participant and JSCC. Thereafter, JSCC will liquidate positions and compensate losses as prescribed in the Business Rules of each Clearing Business. For any type of transaction, Clearing Participants are assured of a safe market as JSCC will guarantee settlements for non-defaulting Clearing participants. In addition, JSCC has secured liquidity supply from Fund Settlement Banks (“Liquidity Supply Facility”) to secure short-term liquidity for use in the event of a Clearing Participant’s default. See Principle 7 (Liquidity Risk) and Principle 13 (Participant-Default Rules and Procedures) for further details.

Legal and regulatory framework

JSCC holds a license for “financial instruments obligation assumption service” (i.e. financial instruments clearing) to conduct clearing business as a CCP, and JSCC’s business is governed by the FIEA and other Japanese laws. JSCC has established Business Rules for each of its Clearing Businesses, which are subject to approval by the Prime Minister of Japan. JSCC is obligated by the FIEA[6] to conduct its business and operations according to its Business Rules, thus making these rules legally binding and enforceable. JSCC is subject to the direct regulation and supervision by the JFSA, and oversight in accordance with objectives prescribed in the Bank of Japan Act from the BOJ.

JSCC is also in the process of applying to the U.S. Commodity Futures Trading Commission (“CFTC”) for registration as a Derivatives Clearing Organization (“DCO”) for its IRS Clearing Business under the Commodity Exchange Act, and to the European Securities and Markets Authority (“ESMA”) for recognition as a Third Country CCP (“TCCCP”) under European Market Infrastructure Regulation (“EMIR”).

System and operations

For cash product transactions, JSCC serves as the CCP for all domestic Japanese financial instruments exchanges and two Proprietary Trading Systems (“PTS”). It fulfills this role through clearing eligible products, whereby JSCC interposes itself between the parties, assuming the buyer’s obligation for payment and the seller’s obligation for delivery.

Settlement of equities and bonds between JSCC and Clearing Participants is conducted on a trade date plus three days basis (“T+3”) via a Delivery Versus Payment (“DVP”) system. Transactions of listed derivatives are cleared at the time they are executed in the market.

For the OTC derivatives Clearing Businesses, prior to accepting trades for clearing, JSCC

[6] FIEA Article 156-7

validates that the transactions are eligible and that the parties involved have sufficient collateral deposited with JSCC.

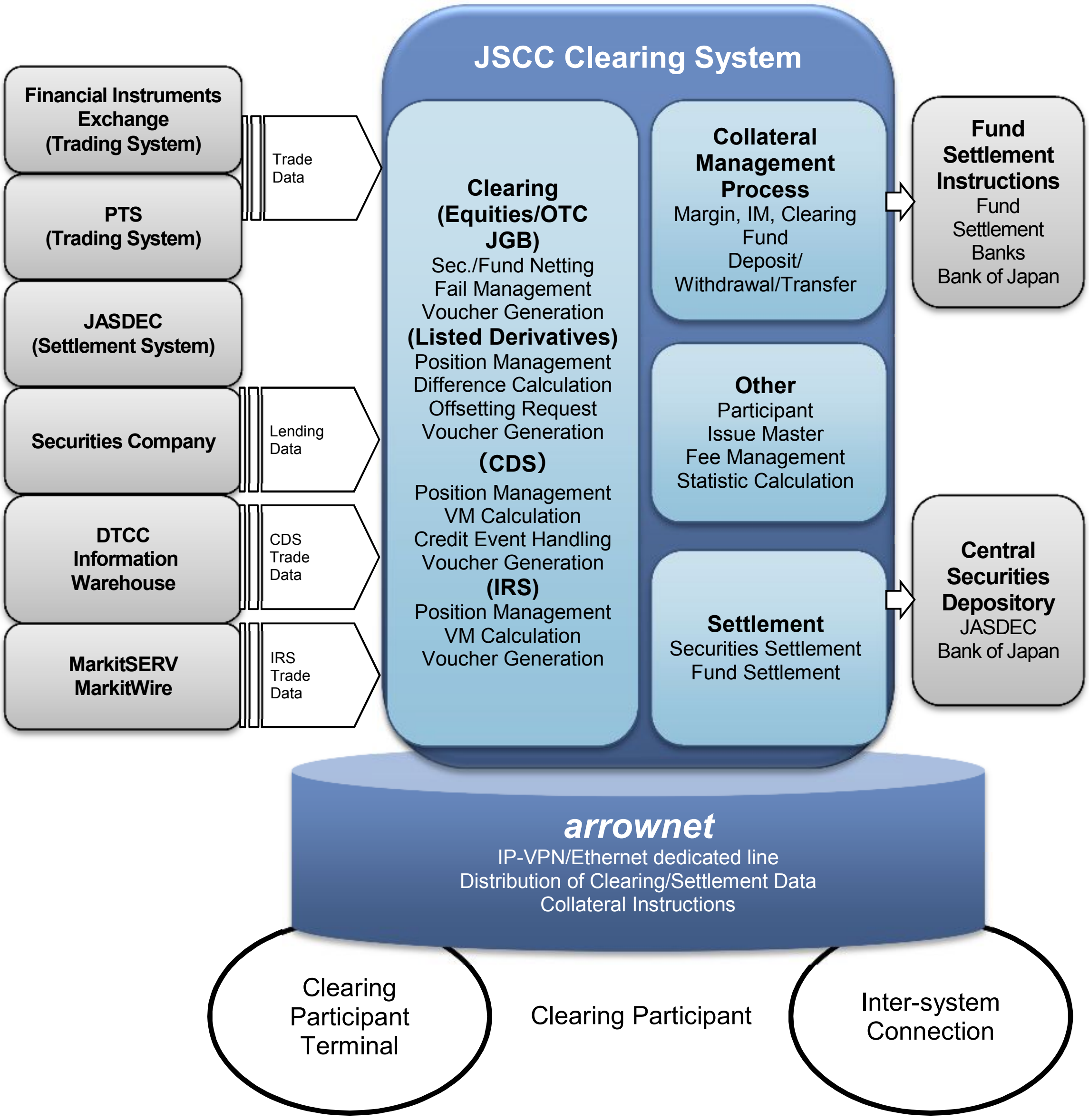
CDS are cleared once per week on a three-day cycle. Beginning on Tuesday of each week, the pre-cleared CDS is registered to a confirmation platform to apply for clearing. On the next business day, the parties to the transaction may modify details of the transaction, after which it is sent to JSCC. JSCC will clear the trade at 4:00 p.m. on the third business day.

Clearing of IRS is conducted on each business day during the periods of 9:00 a.m. to 12:00 p.m. and 1:00 p.m. and 4:00 p.m.

OTC JGB transactions are cleared once per day, at 6:30 p.m. DVP settlement of OTC JGB transactions is conducted through RTGS (Real-time Gross Settlement) provided by the BOJ.

JSCC outsources all development and operations related to IT systems. It appropriately manages outsourcing arrangements according to clearly defined outsourcing guidelines and criteria. The development and operations of IT systems for JSCC's Listed Product Clearing Business are outsourced to TSE, while those for the CDS and IRS Clearing Businesses are outsourced to Tosho System Services (TSS). Both TSE and TSS are JPX Group subsidiaries, and therefore affiliates of JSCC. JSCC outsources the development of OTC JGB Clearing Business systems to a third-party service vendor.

General Background of the FMI III-4: JSCC System Overview



IV. Principle-by-Principle Summary Narrative Disclosure

General Organization

Principle 1: Legal Basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key Consideration 1:
The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Material aspects and relevant jurisdictions

JSCC views the following activities to require a high degree of legal certainty:

- Trade clearing
- Netting
- Settlement finality
- DVP arrangements
- Linkages with other FMIs
- Collateral arrangements
- Default management arrangements

*While JSCC also views Recovery and Resolution in the event of FMI (CCP) default to be a matter requiring a high degree of legal certainty, details on such arrangements will be determined according to international regulatory trends.

Legal Basis for each Material Aspect and Relevant Jurisdiction

JSCC's activities are governed by Japanese laws and regulations, including the FIEA, Civil Code, Companies Act, and the "Cabinet Office Ordinance on Financial instruments Clearing Organization, etc."

*However, within JSCC's CDS Clearing Business, the terms and conditions of cleared CDS transactions are governed by and interpreted according to English law in the absence of specific provisions otherwise.

Furthermore, JSCC is subject to the supervision of the JFSA in accordance with the "Comprehensive Guidelines for Supervision of Financial Market Infrastructures," which covers all aspects of an FMI's business and operations.

JSCC's Business Rules are approved by the Prime Minister of Japan, in accordance with the FIEA[7]. JSCC's rules are authorized pursuant to such requirement. JSCC concludes a Clearing Participant Agreement with each Clearing Participant under which the Clearing Participant is required to comply with JSCC's Business Rules. Thereby, JSCC's Business Rules are legally binding as they are positioned as the contract between JSCC and each Clearing Participant.

[7] FIEA Articles 156-3 and 156-12

The relationships between JSCC, its Clearing Participants, and customers are governed by JSCC'S Business Rules, which set out the rights and obligations of each. JSCC's Rules and Clearing Participant Agreements state that all of JSCC's Clearing Businesses are governed by the laws of Japan and fall under the jurisdiction of the Tokyo District Court.

Provisions relating to Trade Clearing

JSCC's Business Rules detail the process of the "Financial Instruments Obligation Assumption Service" for which JSCC holds a license under the FIEA. JSCC's clearing services are conducted in accordance with the FIEA.

Provisions relating to Netting

JSCC's Business Rules have specific provisions related to close-out netting arrangements for claims and obligations between JSCC and Clearing Participants in the case of a Clearing Participant default. Additionally, the FIEA[8] prescribes that JSCC's close-out netting process shall prevail over general bankruptcy proceedings.

Provisions relating to Settlement Finality

JSCC's rules and operational procedures (documents prescribing handling of clearing operations in accordance with the rules) contain provisions dealing with settlement finality, and detail the point at which obligations pertaining to fund/securities settlement and deposit of collateral between JSCC and its Clearing Participants are settled. This provides certainty to all of JSCC's Clearing Participants as to the point at which their obligations to JSCC are satisfied. See Principle 8 (Settlement Finality) for further details.

Provisions relating to DVP Arrangements

Settlement for cash products and JGBs is conducted by DVP. DVP settlement for cash products is conducted by linking book-entry transfer at Japan Securities Depository Center, Inc. ("JASDEC") with fund settlement at Fund Settlement Banks, in accordance with JSCC's rules[9]. DVP settlement for JGBs[10] is conducted through RTGS (Real-Time Gross Settlement) provided by the BOJ.

All securities settlements (book-entry transfer) are conducted according to Japanese law (Act on Book-entry Transfer of Company Bonds, Shares, etc.).

Provisions relating to Linkage with other FMIs

JSCC currently only has links to CSD (Central Securities Depository) and SDR (Swaps Data Repository). See Principle 20 (FMI Links) for further details.

Provisions relating to Collateral Arrangements

JSCC holds collateral deposited by Clearing Participants and customers in the manner specified in Principle 16 (Custody and Investment Risks).

Clearing Participant and customer collateral is segregated from JSCC's own assets, in compliance with the requirements of the FIEA[11]. JSCC may, however, use collateral to satisfy obligations owed to it following the default of a Clearing Participant, where the conditions of the

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[8] FIEA Article 156-11-2
[9] Listed Products Clearing Business Rules Chapter 5
[10] Japanese Government Bond Over-the-Counter Transaction Clearing Business Rules Chapter 5
[11] FIEA Article 119, Paragraph 4 and Cabinet Office Ordinance on Financial Instruments Exchanges, etc. Article 67

FIEA and JSCC's Business Rules are met.

Collateral deposited by Clearing Participants with JSCC is treated as "Clearing Margin" as defined in Article 119 of the FIEA for the Listed Products (Derivatives) Clearing Business, and "Clearing Deposit" as defined in Article 156-11 of the FIEA for other collateral. The FIEA gives JSCC the right to receive payment from "Clearing Margin" and "Clearing Deposit" before other creditors.

Provisions relating to Default Management Arrangements

The FIEA[12] states that, in the event of a Clearing Participant default, a CCP's rules shall prevail over general bankruptcy proceedings for the settlement of cleared trades between the defaulting Clearing Participant and the CCP.

Key Consideration 2:
An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

JSCC's rules (including amendments) are developed via a process which includes consultation with Clearing Participants, lawyers, the JFSA and other relevant regulators, as necessary. Through this process, JSCC confirms that its rules are consistent with laws and regulations.

To date, no conflict between JSCC's rules, procedures, and contracts and relevant laws and regulations have been identified.

JSCC also removes uncertainty in its rules and prevents misinterpretation by holding informal discussions with Clearing Participants and discussions in advisory committees and by conducting public consultations on the outline of new rules or amendments to existing rules, except for insignificant rule changes.

Key Consideration 3:
An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

JSCC makes explanations of the legal basis for its activities widely available via its website, in presentations to the advisory committee for each Clearing Business, and in meetings with Clearing Participants or their customers.

Key Consideration 4:
An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

Enforceability of JSCC's Rules, Procedures, and Contracts

JSCC's Rules, Procedures, and Contracts are written to ensure they have contractual force in all relevant jurisdictions. (See Key Consideration 1 of this Principle for further details.)

The FIEA[13] stipulates that in the event of a Clearing Participant default, a CCP's rules shall

[12] FIEA Article 156-11-2
[13] FIEA Article 156-11-2

prevail over general bankruptcy proceedings for the settlement of cleared trades between the defaulting Clearing Participant and the CCP, allowing JSCC's rules to limit the impact of the insolvency of a Clearing Participant on JSCC's Clearing Businesses.

In the event of the commencement of bankruptcy proceedings in a foreign jurisdiction against a Clearing Participant, the effect of such bankruptcy proceedings extend to Japan only upon a Japanese Court's order of recognition of such proceedings, as specified in the "Act on Recognition of and Assistance for Foreign Insolvency Proceedings." Such proceedings shall apply to the properties of a defaulting Clearing Participant only upon the issuance of an assistance order by a Japanese court. Unless a Japanese court issues such an order, bankruptcy proceedings in a foreign jurisdiction do not directly apply to Japan and will not put collateral posted to JSCC by a defaulting Clearing Participant at risk, even in the event of the default of a foreign Clearing Participant.

Degree of Certainty for JSCC's Rules and Procedures

JSCC has confirmed that there are no issues with Japanese law being the governing law of JSCC's Clearing Businesses or the effectiveness of English law with respect to the terms of CDS contracts.

JSCC's Business Rules are subject to approval as required under the FIEA[14]. In this process, the Business Rules are examined to ensure they conform to laws and regulations and are sufficient for conducting Clearing Services appropriately and smoothly. To date, there has been no instance of any regulatory action taken against any of JSCC's activities in Japan or abroad.

Key Consideration 5:
An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

JSCC continuously identifies and analyzes possible conflict-of-law issues based on the latest information from Clearing Participants, law firms, and regulatory bodies, including the JFSA.

Some of JSCC's Clearing Participants are established in European Union ("EU") countries, with their operations in Japan registered under the FIEA. Therefore, JSCC is currently in the process of applying to ESMA for recognition as a TCCCP, in accordance with EMIR, Article 25(1), enabling JSCC to provide services to Clearing Participants and trading venues established in the European Union. Whilst JSCC's application is ongoing, under Article 89 of EMIR, until a decision is made by ESMA, JSCC is able to provide clearing services to EU-established Clearing Participants.

Some affiliates of JSCC's IRS Clearing Participants that clear their IRS trades in JSCC are U.S. entities. Therefore, JSCC is currently in the process of applying to the CFTC in the U.S. for the registration of JSCC's IRS Clearing Business as a DCO under the Commodity Exchange Act and CFTC Regulation. Currently, JSCC is able to provide clearing services to such U.S. entities under conditions prescribed in the no action relief granted by the CFTC[15].

[14] FIEA Articles 156-3 and 156-12
[15] CFTC No Action Letter http://www.cftc.gov/ucm/groups/public/@lrlettergeneral/documents/letter/14-155.pdf

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key Consideration 1:
An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

Under the FIEA and the JFSA's "Comprehensive Guidelines for Supervision of Financial Market Infrastructures -Clearing Organizations, Fund Clearing Organizations, Book-entry Transfer Institutions, and Trade Repositories-," a CCP is required contribute to the stability of the financial system through the precise execution of its clearing operations under proper risk management. JSCC's clearing operations are subject to the supervision of the JFSA. Toward that purpose, JSCC, in its role as an FMI, provides the following in its Corporate Philosophy:

> *"JSCC, with a solid risk-management framework, aims to enhance the competitiveness of Japanese financial and capital markets by improving the efficiency, serviceability and safety of financial market post-trade processing infrastructure."*[16]

JSCC's officers and employees are required to conduct operations based on this Corporate Philosophy.

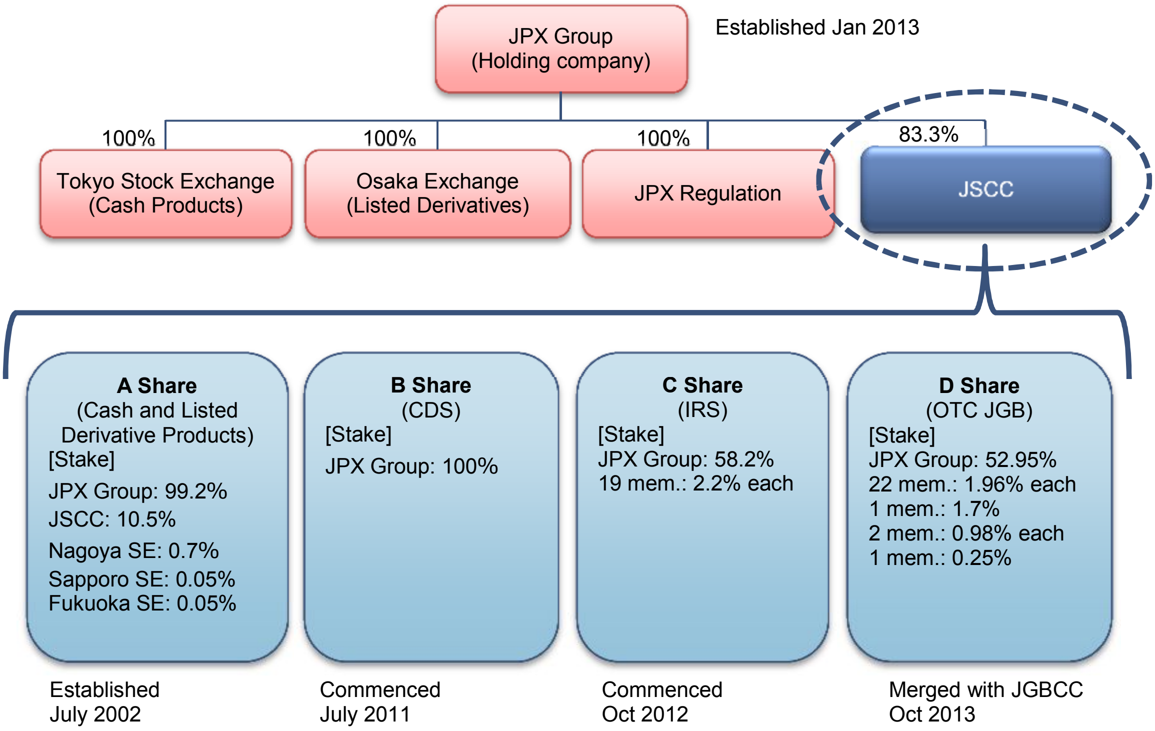
JSCC lays out business policies in its "medium-term business plan," which is created based on its Corporate Philosophy, and uses those policies to formulate detailed business plans. The JSCC Board of Directors reviews the achievement of business plans annually and analyzes whether they achieve results that are consistent with JSCC's Corporate Philosophy.

Key Consideration 2:
An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

JSCC is established as a joint-stock company under the Companies Act of Japan, and operates as a CCP majority owned by JPX Group, the holding company of TSE, OSE, and Japan Exchange Regulation, as shown below.

[16] JSCC http://www.jscc.co.jp/en/company/philosophy.html

Principle 2 (Governance) Key Consideration 2 IV-1: Shareholder Composition



The corporate governance of JPX, which is JSCC's controlling shareholder, is based around ensuring the credibility of the market, as provided below. As both a market operator and listed company, its governance aims to provide stable market infrastructure and contribute to the market and financial system as a whole, and is consistent with JSCC's governance that realizes the aim of an FMI, as provided in the Corporate Philosophy.

JPX's Fundamental Approach to Corporate Governance

"The mission of Japan Exchange Group, Inc. (JPX) is to serve as Japan's central financial instruments market – a vital element of public infrastructure. Through the fulfillment of the missions of its financial instruments exchange and self-regulatory subsidiaries, JPX seeks to secure stable income while maintaining the balance between its public nature and profitability.

Our fundamental approach toward corporate governance is tied to the provision of a highly liquid and reliable securities market and we adhere to the following principles:

- *Increase the transparency of management by clarifying the authorities and responsibilities of each corporate body and exercise accountability;*
- *Reflect the opinions of investors and a wide variety of other stakeholders in the management and operation of the market; and*
- *Provide appropriate self-regulation functions by ensuring impartial decision-making free from the influence of particular stakeholders."*[17]

JSCC is subject to the supervision of the JFSA in accordance with the FIEA. JSCC's Articles of Incorporation, which provide for its fundamental governance arrangements, satisfy the

[17] JPX http://www.jpx.co.jp/en/general-information/corporate-governance.html

detailed governance requirements for a CCP as provided in the FIEA, the “Cabinet Office Ordinance on Financial Instruments Clearing Organization, etc.,” the “Comprehensive Guidelines for Supervision of Financial Market Infrastructures,” and other laws and regulations

Governance Arrangements

All of JSCC’s clearing activities take place within four Clearing Business units: Listed Products, CDS, IRS, and OTC JGB. Each Clearing Business maintains its own capital and share class, with business decisions made according to resolutions by the general shareholders meeting and class-shareholders meeting.

JSCC’s Board of Directors is composed of three executive directors (the President and CEO, Executive Vice President, and Managing Director) as well as nine non-executive directors. The Board of Directors makes decisions on JSCC business activities according to its resolutions, nominates executive officers to execute such activities, and supervises the propriety of officers’ performance of duties.

Directors that represent the opinions of each Clearing Business are nominated to the Board of Directors. The Articles of Incorporation include provisions requiring directors to respect the opinions of each Clearing Business’s advisory committee in order to establish proper governance.

JSCC possesses a board of statutory auditors, composed of 3 highly independent auditors nominated at the general shareholders meeting. Statutory auditors have the authority and responsibility under the Companies Act to investigate company business and assets in order to ensure the lawfulness of director activities, to request a meeting of the Board of Directors to report on the improper conduct of a director, and to report results of audits to shareholders.

The names and roles of the advisory committees for each of JSCC’s Clearing Businesses are as follows:

Disciplinary Measures Assessment Committee
In cases where JSCC exercises its authority under the Business Rules of each Clearing Business to take necessary measures against Clearing Participants, JSCC shall seek advice from the Disciplinary Measures Assessment Committee. The committee possesses the necessary knowledge and experience regarding relevant laws, accounting standards, and the market and is composed of members that are independent from JSCC and Clearing Participants.

User Committee
This committee serves to provide an understanding of Clearing Participants’ demands related to the Listed Products Clearing Business, ensure JSCC’s rules and operations reflect the opinions of Clearing Participants from an operational perspective, and discuss rules and operational matters in response to inquiries from the Board of Directors. Committee members are selected by the CEO from all Clearing Participants, taking into consideration member diversification including the type and scale of their business.

Listed Products Risk Management Committee
This committee deliberates on risk management matters related to the rules, margin rules, and default management processes of the Listed Products Clearing Business in response to inquiries from the Board of Directors. Committee members are selected by the CEO from among personnel at Clearing Participants and institutional investors, as well as experts on topics under deliberation.

CDS Risk Management Committee
IRS Management Committee
OTC JGB Management Committee
These committees deliberate on proposed changes to the Business Rules and other rules of their respective Clearing Businesses in response to inquiries from the Board of Directors. The committees are composed of Clearing Participants and shareholders.

JSCC Determination Committee
This committee determines matters for the CDS Clearing business, including matters concerning Credit Events and Succession Event. Committee members are selected from Clearing Participants.

CDS Default Management Committee
IRS Default Management Committee
OTC JGB Default Management Committee
These committees offer advice on matters such as hedging when the default of a Clearing Participant is determined and bidding during default auctions. Members of these committees are selected from Clearing Participants.

Responsibility for operations rests with the related director. The names and roles of each division are as follows:

Risk Management Office
The Risk Management Office is composed of the Risk Management Division and the Risk Monitoring Division. The Risk Management Division is responsible for the creation of risk management policies as well as planning, drafting, and management related to comprehensive risk management. The Risk Monitoring Division is responsible for the planning and drafting of Clearing Participant rules, as well as matters related to clearing/settlement rules and the examination/monitoring of Clearing Participants.

Corporate Planning Division
In addition to acting as the secretariat for the general shareholders meeting and the Board of Directors, Corporate Planning also handles general affairs, accounting, and human resources.

Strategic Planning Division
Strategic Planning is responsible for formulating management and business plans and managing their execution, in addition to general management matters.

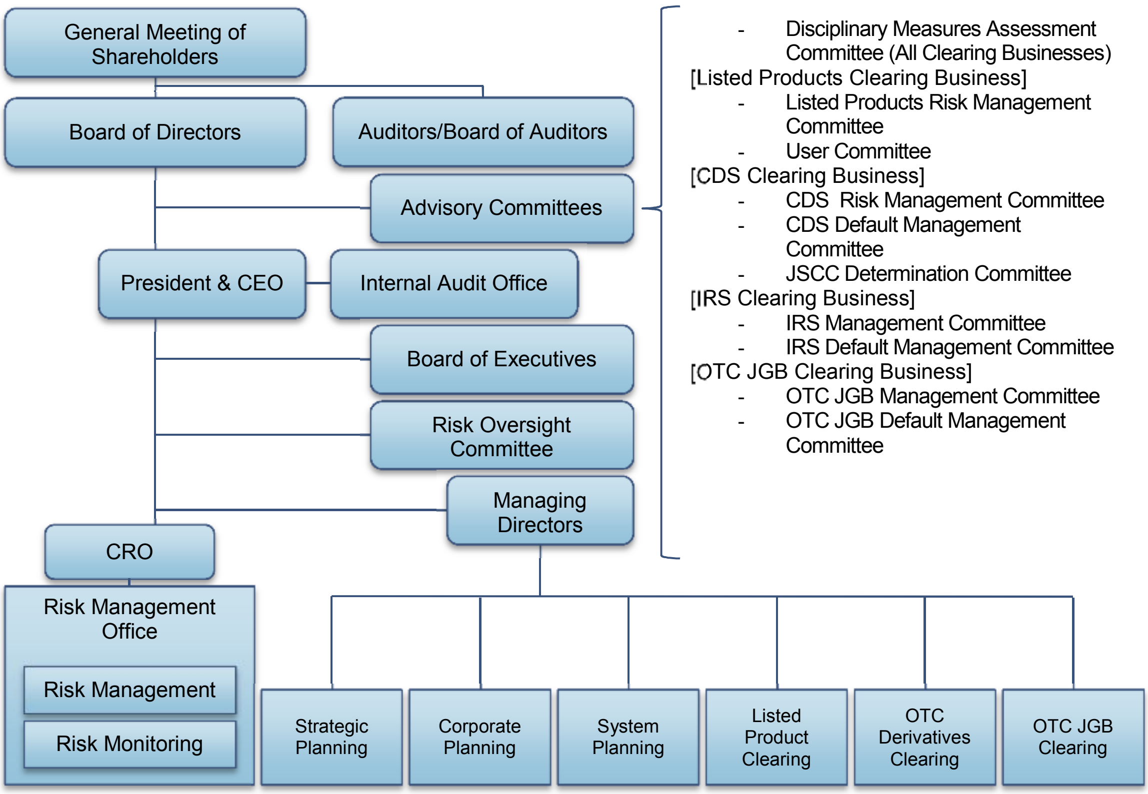
System Planning Division
System Planning is responsible for comprehensive planning, strategy, and supervision of IT-related matters, and management and coordination of system-related projects.

Listed Products Clearing Service
This clearing service is responsible for planning and drafting of clearing/settlement rules and frameworks, and settlement control of products subject to clearing for listed products.

OTC Derivatives Clearing Service
This clearing service is responsible for planning and drafting of clearing/settlement rules and frameworks, and settlement control of products subject to clearing for OTC derivatives.

OTC JGB Clearing Service
This clearing service is responsible for planning and drafting of clearing/settlement rules and frameworks, and settlement control of products subject to clearing for OTC JGBs.

Principle 2 (Governance) Key Consideration 2 IV-2: Company Organization



Disclosure

JSCC publishes its Annual Report on its corporate website. The Annual report includes a detailed review of JSCC's shareholders, the composition of its Board of Directors and Auditors, and an overview of its advisory committees.

Key Consideration 3:
The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its function, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

Roles and Responsibilities of the Board of Directors

JSCC's Board of Directors oversees all of JSCC's business activities and is accountable to its shareholders. The main duties and authority of the Board of Directors and the procedures for the Board meetings are prescribed in the Companies Act, Articles of Incorporation, and JSCC's Rules of Board of Directors.

The main duties of the Board of Directors include approval of the following:

- High-level policies, strategies, and objectives of JSCC, including the medium-term business plan;
- Annual budgets and investment proposals

- Internal control framework to secure the adequacy of internal procedures, risk management, financial reporting, and compliance;
- Appointment and dismissal of the President & CEO

Managing Conflicts of Interest

The Companies Act[18] provides for managing conflicts of interest between the Board of Directors and individual directors by requiring the disclosure of material facts to and approval from the Board in cases where a director seeks to engage in transactions competing against JSCC's business, or which would result in a conflict of interest.

Auditors are obligated by the Companies Act[19] to report to the Board of Directors, without delay, illegal actions, violations of laws, regulations, or the Articles of Incorporation, or significantly inappropriate facts in relation to the duties of directors, as well as report the results of their investigations to the general shareholders meeting. As such, auditors investigate transactions involving conflicts of interest when preparing audit reports annually.

Furthermore, both the Companies Act[20] and JSCC's Rules of Board of Directors contain provisions prohibiting a director with a special interest in a subject matter from voting on such matter.

Measures to Facilitate the Functioning of the Board of Directors

JSCC holds a Board of Statutory Auditors[21], which serves the same function as an audit committee.

Review of Performance of Board of Directors

Shareholders are able to monitor the performance of the Board of Directors via the business report submitted to the general shareholders meeting. The report contains information on achievement of management policies and business plans, defined in the medium-term management plan and financial results.

For the performance of individual directors, records of each director's participation in board meetings and other meetings, including remarks in such meetings, are used as reference during future nomination processes.

Key Consideration 4:
The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).

Board Member's Skills

The FIEA[22] requires that a CCP's personnel be composed of individuals that "have sufficient knowledge and experience for conducting Financial Instruments Obligation Assumption Service appropriately and certainly and have sufficient social credibility," and nominations to the Board of Directors are made in accordance with such requirements.

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[18] Companies Act Articles 356 and 365
[19] Companies Act Article 381, Paragraph 1 and Article 384
[20] Companies Act Article 369, Paragraph 2
[21] Companies Act Article 2, Item 9
[22] FIEA Article 156-4, Paragraph 1

Specifically, JSCC appoints board members who have a broad range of relevant financial markets industry experience, qualifications, and industry knowledge. In the nomination process during the general shareholders meeting, the background of candidates is present and their skills are confirmed.

The backgrounds of board members are publicized via JSCC's website.

Board Member Incentives

Suitable standards have been set for board member compensation to retain and motivate individuals with appropriate abilities and incentives, to secure long-term interests.

Additionally, the compensation for standing directors is structured to motivate sustaining and improving JSCC's mid- to long-term performance. This compensation is determined annually by the Compensation Committee based on the performance of each individual within the amount decided on in the general shareholders meeting.

4.5 Key Consideration 5:
The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

Roles and Responsibilities of Management

JSCC's senior management is composed of standing directors responsible for operations and the Chief Risk Officer (CRO). In accordance with resolutions of the Board of Directors, the senior management execute JSCC's business plans and oversee daily operations.

The duties of the senior management are set out in JSCC's internal rules and include:

- Making key decisions on the management and operations of JSCC;
- Managing JSCC expenses and investments;
- Executing and managing JSCC's business within the framework of the board-approved Medium-Term business plan;
- Making decisions on matters to be submitted to the Board of Directors in relation to JSCC's policies, strategy, and financial objectives.

The senior management report on JSCC operations to the Board of Directors on a quarterly basis and present a business report and financial results to shareholders annually, following approval by the Board of Directors. Shareholders are thereby able to evaluate the performance and accomplishments of senior management in light of JSCC's role as a CCP and are required to appoint candidates.

Experience, Skills, and Integrity

JSCC has confirmed that its senior management meet the qualifications required by the Companies Act, FIEA, U.S. Commodity Exchange Act, and CFTC Regulations. JSCC's senior management have diverse experience across exchange operation, banking management, and clearing, risk management, and information technology.

Profiles of the members of JSCC's Board of Directors are available on JSCC's website.

The Board of Directors have the authority to seek a general shareholders meeting resolution to initiate the dismissal of any director failing to fulfill their duties or otherwise bringing JSCC into disrepute, pursuant to procedures specified in the Companies Act.

Key Consideration 6:
The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

Risk Management Framework

JSCC's Board of Directors identifies the risks JSCC is exposed to and determines the Risk Management Policy which sets of JSCC's approach to handling such risks. The board has also prepared a comprehensive risk management structure to ensure company-wide compliance with the Risk Management Policy. It receives regular reports on the state of compliance and can take appropriate measures as necessary. See Principle 3 (Framework for the Comprehensive Management of Risks) for further details.

JSCC's Board of Directors also receives a report at least once a year on the results of an overall review of the risk management framework, and can take appropriate measures in response, as necessary.

The Board of Directors will also receive a report in case of a serious risk event, including a Clearing Participant default or critical system failure, to take action as necessary.

Within JSCC, the Risk Management Office is responsible for confirming each division's compliance with the Risk Management Policy, while the Internal Auditing Office is responsible for conducting audits to confirm the proper execution of business by each department, including the Risk Management Office. The auditing of each Clearing Business division is conducted properly with cooperation between both the Risk Management Office and the Internal Auditing Office.

Key Consideration 7:
The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

Identification and Consideration of Stakeholder Interests

JSCC makes its business decisions with consideration given to the interests of stakeholders such as Clearing Participants and their customers.

As stated in Key Consideration 2 of this Principle, the User Committee, Listed Products Risk Management Committee, CDS Risk Management Committee, IRS Management Committee, and JGB OTC Management Committee all include Clearing Participants as members. The Board of Directors makes inquiries to these advisory committees when deciding upon significant changes to operations or the Business Rules. Opinions are also collected from a wide range by soliciting public comments on new rules and significant rule changes in advance.

The Board of Directors also consults the various Default Management Committees, which are composed of Clearing Participants, on hedging measures and default auctions in the event of a Clearing Participant default.

Disclosure

JSCC publicizes major decisions by the Board of Directors on its website, including the Medium-Term Business Plan, significant rule revisions, and candidates for the Board of Directors.

Principle 3: Framework for the Comprehensive Management of Risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key Consideration 1:
An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

Risks that arise in or are borne by JSCC

JSCC is exposed to various risks, such as credit risk, liquidity risk, operational risk (including IT system risk and other operational risk), settlement risk, custody risk, investment risk, concentration risk, legal risk, and business risk.

Risk Governance

JSCC's Corporate Philosophy clarifies the importance of risk management and forms the foundation of JSCC's risk governance, as follows:

"JSCC, with a solid risk-management framework, aims to enhance the competitiveness of Japanese financial and capital markets by improving the efficiency, serviceability and safety of financial market post-trade processing infrastructure."[23]

JSCC has defined the following risk management objective in order to achieve the "safety" mentioned in the Corporate Philosophy:

"Establish robust and comprehensive risk management frameworks, ensure steady provision of the Clearing Businesses, and prevent a loss of JSCC's capital."

Based on this risk management objective, JSCC has identified the risks it is exposed to, as listed above, and has defined the Risk Management Policy to manage them. The Risk Management Policy clarifies the purpose, policies, and management of the risk management framework, including sound risk governance, stringent participant eligibility requirements, a robust margin framework, Clearing Fund and Loss Compensation Scheme, default management, and business continuity plan ("BCP").

Under the Risk Management Policy, JSCC has rules and policies for handling the specified risks. These consist primarily of the following:

- In order to handle Clearing Participant credit risk, JSCC has defined risk management frameworks, including Clearing Participant rules, margin rules, a Clearing Fund and Loss Compensation Scheme, and default management procedures in its Business Rules and subordinate rules;
- In order to handle operational risk, JSCC has defined a "BCP Basic Plan" to minimize the impact of interruptions to operations and lay out business continuity measures in case of the realization of various risk factors. Additionally, JSCC has defined (a) an "Information Security Policy" and "Information Security Standards" providing for access control and information protection, (b) "Rules for Operational Management" providing for matters for stable operations, such as the preparation of operation manuals and checklists, and procedures to deal with abnormal events, (c) "Rules for Management of Outsourcing" which provide for vendor selection processes and continuous monitoring and control of

[23] JSCC http://www.jscc.co.jp/en/company/philosophy.html

outsourced activities, and (d) the "System Risk Management Policy" and "System Risk Management Rules" which provide for the policy and procedures for addressing risks arising from IT system use;

- In order to handle settlement and custody risks, JSCC has defined the "Policies for Designation of Fund Settlement Banks" and "Policies for Designation of Custodians of Posted Collateral," which provide for criteria and procedures for designating commercial banks as Fund Settlement Banks and/or collateral custodians; and
- In order to handle investment risk, JSCC has defined the "Policies for Fund Management of Own Assets" and "Policies for Management of Posted Collateral," which provide for the scope and methods of such management.

Comprehensive Risk Management Framework

JSCC has established a comprehensive risk management framework to supervise and manage risks and ensure that responsibilities and accountabilities are clearly defined. Specifically, JSCC's Board of Directors defines the aforementioned Corporate Philosophy, Risk Management Objectives, and Risk Management Policy and established and executes the risk management framework based on the Risk Management Policy, as follows.

- The division responsible for managing each risk will act according to the Risk Management Policy and report the status of compliance to the Risk Management Office.
- The Risk Management Office will compile and evaluate the reports received from divisions responsible for the management of each risk. The CRO, in his role of supervising the Risk Management Office, shall report the status of compliance with the Risk Management Policy monthly, quarterly, and annually to the Risk Oversight Committee and offer proposals as necessary. Additionally, the CRO shall report the status of compliance with the Risk Management Policy to the Board of Directors quarterly and annually, in principle, and offer proposals as necessary. The Risk Oversight Committee is composed of the President & CEO, executive directors supervising each business unit, division heads, CRO and other Risk Management Office staff, and auditors.
- The risks arising from each business are identified via the ERM (Enterprise Risk Management) framework on a regular and company-wide basis, and appropriate measures planned to prevent their occurrence based on frequency and severity.

Regular Revision of the Risk Management Policy and Risk Management Framework

JSCC's Board of Directors will review the Risk Management Policy and Risk Management Framework at least once a year, and conduct the appropriate revisions in consideration of the risks to which JSCC is exposed. During this review, the Board of Directors will consider new products, the market environment, positions of Clearing Participants, changes in the domestic and overseas regulatory environment, and other factors. The Board of Directors' review and revision process will be overseen by the Risk Management Office.

Key Consideration 2:
An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.

JSCC provides all Clearing Participants with detailed information on their positions, collateral requirements and settlement amounts, allowing Clearing Participants to reconcile and manage their market, credit, and liquidity risks. Specifically, the following measures allow Clearing Participants to calculate and manage their own risks:

- Whenever a listed product transaction is executed, the exchange disseminates the execution information, or a drop-copy, in real-time to Trading Participants and Clearing Participants;

- JSCC specifies the use of SPAN® methodology, which is widely used globally, for listed derivatives margining in its rules, and distributes a daily risk parameter file for margin calculation. The method for calculating cash product margin is specified in JSCC's rules and made public, and the required margin amounts are disseminated to Clearing Participants;
- For CDS and IRS, JSCC disseminates trade information whenever a transaction is cleared. Historical simulation (expected shortfall) is used for margin calculation, and the methodology is specified in JSCC's rules and made public. JSCC disseminates the required margin amounts to Clearing Participants and also provides margin simulation tools;
- For OTC JGBs, whenever a transaction is cleared, JSCC disseminates the related information to Clearing Participants. For margin, a delta method is used, and the calculation methodology for which is specified in JSCC's rules and made public. JSCC disseminates the required margin amounts to Clearing Participants; and
- For the Clearing Fund, JSCC specifies the calculation methodologies in its rules, which are publicly available, and disseminates the required amounts to Clearing Participants.

JSCC has established a framework for requiring additional margin, or the reduction of positions, when risks become excessive, for each of its Clearing Businesses. Clearing Participants are incentivized to pro-actively manage position risk in order to control their margin requirements. See Principle 6 (Margin) for further details.

JSCC gives Clearing Participants incentive to properly manage their positions with JSCC by requiring prefunded, or unfunded, mutualized loss compensation resources in accordance with each participant's risk exposure, for each Clearing Business. See Principle 13 (Participant-Default Rules and Procedures) for further details.

JSCC also ensures that Clearing Participants maintain the soundness and appropriateness of their business execution framework through a continuous monitoring process. When an issue arises, JSCC maintains the ability to suspend the clearing services of a Clearing Participant, after consultation with the Disciplinary Measures Assessment Committee. See Principle 18 (Access and Participation Requirements) for further details.

In addition to this, JSCC consults the advisory committees of each Clearing Business and solicits public comments when designing the risk management framework, thus offering opportunities for Clearing Participants and their customers to have effective management and controls for their risks. See Principle 2 (Governance) for further details.

Key Consideration 3:
An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

Management of Interdependencies

JSCC monitors the risks of entities with which it has interdependencies and takes preventative measures to reduce risk.

The primary entities with which JSCC has interdependencies are Fund Settlement Banks, custodian banks, liquidity providers, and the CSD. JSCC manages the settlement risk, custody risk, and liquidity risk arising from such interdependencies with these entities in accordance with the Risk Management Policy.

Specifically, JSCC monitors financial conditions of these entities to assess their credit risk and appropriately manages business processes with each. JSCC has also defined measures in its BCP for cases where business of such entities is disrupted by system malfunctions or other factors. In this way, JSCC manages the aforementioned risks with such entities. The status of risk management is reviewed on a monthly basis in a report on compliance with the Risk Management Policy, while risk management methods are reviewed annually or as necessary in the course of validation of the Risk Management Policy.

5.4 Key Consideration 4:
An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

JSCC's Risk Management Policy defines the risk management objective as "Establish robust and comprehensive risk management frameworks, ensure steady provision of the Clearing Businesses, and prevent a loss of JSCC's capital." The Risk Management Policy also provides for measures against various risks which would disrupt the provision of vital JSCC services. Specifically, this assumes the realization of various risks to which JSCC is exposed, mentioned in Key Consideration 1 of this Principle, as scenarios in which JSCC is unable to provide its services, such as JSCC's resources being unable to cover the loss resulting from a Clearing Participant's default, JSCC being unable to finance funds necessary for settlement, or continuous loss due to reduced revenues or increased costs for long periods.

JSCC is required to have measures in place to ensure the appropriate operation of its Clearing Businesses, by the FIEA[24]. For risks posed by a Clearing Participant's default, JSCC has prepared a Loss Compensation Scheme to fully cover the losses resulting from the default within its default management framework, and has arrangements for liquidity appropriate to the nature of the products it clears. These measures allow JSCC to avoid risk scenarios which would prevent the provision of its Clearing Businesses and services.

While there are appropriate measures in place to guard against business and other risks based on the Risk Management Policy, JSCC also has plans in place to revise business plans and reduce costs as necessary should such risks be realized. See Principle 15 (Business Risk) for further details.

In the unlikely case where JSCC finds it difficult to provide its Clearing Businesses and services, it would cooperate with regulators and related parties to resolve the situation.

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[24] FIEA Article 156-10

Management of Credit Risk and Liquidity Risk

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key Consideration 1:
An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

Credit Risk Borne by JSCC

JSCC bears the credit risk of its Clearing Participants. Additionally, Fund Settlement Banks and custodians can also be sources of credit risk, as described below. JSCC has established a robust risk management framework to handle these credit risks.

Framework to Manage Clearing Participant Credit Risk

JSCC has in place a robust risk management framework to manage the credit risk of Clearing Participants.

- JSCC only admits entities, under supervision of the JFSA, that possess a sound management structure and financial basis and an appropriate business execution structure. JSCC requires Clearing Participants to continue to satisfy these criteria. This ensures that Clearing Participants have sufficient financial resources to fulfil their obligations to JSCC.
- JSCC requires Clearing Participants to deposit variation margin to cover current exposure and initial margin to cover potential future exposure. JSCC may also require Clearing Participants to deposit additional margin when necessary. See Principle 6 (Margin) for further details.
- JSCC actively monitors the credit exposure of Clearing Participants, at least once a day, and can take risk mitigating actions, such as requesting additional margin or position reduction, as necessary.
- In order to cover risks which cannot be covered by variation/initial margin resulting from times of market stress, JSCC requires Clearing Participants to contribute to a Clearing Fund. In addition, JSCC contributes to the financial resources for default loss from its own capital, and an appropriate part of these resources are committed ahead of the Clearing Fund contributions of Clearing Participants. The loss compensation resources, including those mentioned above, are used to meet any losses resulting from a Clearing Participant's default, where the losses exceed the defaulting Clearing Participant's own resources. See Principle 13 (Participant-Default Rules and Procedures) for further details.

- JSCC clears cash products and government bonds, which are exposed to principal risk. However, this principal risk is eliminated via the use of DVP settlement. See Principle 12 (Exchange-of-Value Settlement Systems) for further details.

JSCC confirms the effectiveness of its risk management framework by conducting an overall review at least once a year. During this review, JSCC takes into account new products, the market environment, Clearing Participant positions, domestic and overseas regulatory developments, and other related factors.

Framework to Manage Credit Risks of Fund Settlement Banks and Custodians

In order to manage the credit risk of Fund Settlement Banks and custodians, JSCC performs continuous monitoring against the selection criteria, which include: being supervised by the financial regulator of Japan or their home country; possessing a framework to properly carry out operations for JSCC; and having stable financial standing.

Key Consideration 2:
An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

Credit Risks from Clearing Participants

Credit risk from Clearing Participants arises from the possibility of one or more of them defaulting. In such case, JSCC faces credit exposure arising from price movements in the positions it has cleared for the defaulting Clearing Participant.

This credit exposure consists of both current and potential future exposure.

- JSCC measures current exposure by marking-to-market every outstanding position to the latest market price, and measures potential future exposure based on analysis of historical price movements and/or implied volatility derived from actual option premiums in the market, at least once a day for all products. See Principle 6 for further details.
- JSCC measures credit exposures under extreme but plausible stressed market conditions when measuring potential future exposure. See Key Consideration 5 of this Principle for further details of the stress testing methodologies employed for each of JSCC's Clearing Businesses.

JSCC uses the following tools to manage its credit exposures:

- Daily deposit of variation margin, initial margin, and regular/ad-hoc intra-day margin. See Principle 6 (Margin) for further details;
- Pro-active monitoring of changes in Clearing Participant credit exposures due to position/price fluctuations at least once a day for all products;
- Requiring addition margin or position reduction as necessary based on the above monitoring; and
- In order to reduce the principal risk of cash products and JGBs, cash products use net/net DVP (Model 3 in CPSS's "Delivery Versus Payment in Securities Settlement Systems"(1992)), while OTC JGBs and JGB Futures use gross/gross DVP provided by BOJ (Model 1 in CPSS's "Delivery Versus Payment in Securities Settlement Systems"(1992)).

Credit Risk from Fund Settlement Banks and Custodian Banks

Credit risk from Fund Settlement Banks and custodians arises from the possibility of a default by such an entity. In such case, there is the risk that JSCC would not be able to conduct fund settlement with Clearing Participants or withdraw deposits held by custodians. These deposits could include Clearing Participant margin and Clearing Fund deposits and JSCC's proprietary assets.

Settlement funds in Fund Settlement Bank accounts and cash collateral, including Clearing Participant margin and Clearing Fund deposits held at custodian bank accounts, are covered by the Japanese Deposit Insurance System, which protects these funds against the default of the Fund Settlement Bank or custodian. Some deposited funds are trusted under a trust scheme and are legally protected from the risk of the trustee's default.

In order to diversify its exposures as much as possible, JSCC uses multiple commercial banks and the BOJ to conduct fund settlement and act as custodians for cash collateral. See Principle 9 (Money Settlements) and Principle 16 (Custody and Investment Risks) for further details.

Key Consideration 3:
A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.

This consideration is not applicable to JSCC, as JSCC has no payment system or SSS function.

6.4 Key Consideration 4:
A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

Coverage of Current and Potential Future Exposures

Each of JSCC's Clearing Businesses covers current exposures and potential future exposures, including times of stress, to each Clearing Participant by securing additional financial resources, including variation margin, initial margin to a high confidence level, and Clearing Fund resources.

(1) Variation Margin

For listed derivatives, CDS, IRS, and OTC JGB, open positions are marked-to-market using the most recent price at least once a day, following which variation margin is exchanged with

Clearing Participants. This process ensures that current exposure is covered in a timely manner. For cash products, current exposure is covered by initial margin.

(2) Initial Margin

Initial margin is calculated for each Clearing Business using a method appropriate for that business, with a confidence level of at least 99% for all products.

- For cash products, current exposure and potential future exposure are both covered by initial margin. Initial margin for cash products is calculated using estimated loss based on the market value of positions and the price fluctuation ratio of each issue.
- The initial margin for listed derivatives is calculated using SPAN®.
- For CDS and IRS transactions, historical simulations (expected shortfall) are used.
- For OTC JGB, initial margin is calculated, according to the nature of the product, to cover price fluctuation risk, settlement failure risk (including variation margin and interest payments), repo rate fluctuation risk, and risk of divergence between the mid-price and the bid/offer price.

JSCC has additional margin rules to respond to concentration and credit risk, according to the nature of each Clearing Business. See Principle 6 (Margin) for further details on initial margin structure.

Initial margin must be deposited in Japanese Yen cash, or in the form of highly liquid securities (securities in lieu of cash), such as JGBs. When securities are deposited in lieu of cash, they will be marked-to-market on a daily basis, and subject to haircuts to reflect potential market risks of the asset. Initial margin deposits are held in either JSCC's account at the relevant custodians, or trusted in a Japanese domestic trust bank, and are fully accessible when required. See Principle 5 (Collateral) for further details on JSCC's collateral policies

(3) Margin Sufficiency and Validation

The variation margin mentioned above is the same amount as the current exposure and is thus ensures coverage of the current exposure on a daily basis. Initial margin, which covers potential future exposure, is backtested on a daily basis to evaluate its sufficiency. See Principle 6 (Margin) for further details.

(4) Clearing Fund

JSCC requires each Clearing Participant to contribute to a Clearing Fund which covers potential future exposure in the case of the default of multiple Clearing Participants in extreme but plausible market conditions, for each Clearing Business.

Because of the “jump-to-default” risk (risk of a reference entity experiencing a credit event) involved in CDS, default expectations are set to the 2 largest Clearing Participants, while expectations are set to the 1 largest Clearing Participant at minimum for other products.

The required amount for the Clearing Fund of each Clearing Business is revised on either a weekly or monthly basis, in accordance with the risk amount of the relevant business.

Other Additional Financial Resources

JSCC has other financial resources, such as its own loss bearing resources and additional contributions from Clearing Participants for each Clearing Business in addition to the Clearing Fund. For cash products and listed derivatives, these additional financial resources include loss sharing by the market operator. See Principle 13 (Participant-Default Rules and Procedures) for further details on loss compensation resources and the default waterfall.

Evaluation of Loss Compensation Resource Sufficiency

JSCC conducts daily stress tests for Clearing Participant positions for each of its Clearing Businesses, in order to confirm the sufficiency of loss compensation resources. See Key Consideration 5 of this Principle for further details on stress testing.

Governance Arrangements

The calculation and deposit methods for additional financial resources, including margin and the Clearing Fund, are clearly provided for in the Business Rules and other rules of each Clearing Business. To ensure sufficiency of the overall financial resources, the Risk Management Policy provides for stress testing, and the preparation of measures to respond to any insufficiencies. Daily stress testing is performed to monitor the sufficiency of the overall financial resources, with monthly reviews performed by the Risk Oversight Committee, and by the Board of Directors on a quarterly basis. See Principle 2 (Governance) for further details on JSCC's governance.

Key Consideration 5:
A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.

Stress Testing

JSCC conducts stress testing at least daily to determine whether overall financial resources, including margin and the Clearing Fund, are sufficient to cover potential losses, for each of its Clearing Businesses. JSCC's stress testing framework includes a range of the largest historical movements and extreme but plausible hypothetical scenarios. See Key Consideration 6 of this Principle for further details on the stress testing scenarios used by each of JSCC's Clearing Businesses.

The results of daily stress testing are reported to the CRO, CEO and other executive directors, and the related division head. Additionally, stress testing results are reported as a part of the status report of compliance with the Risk Management Policy as it pertains to credit risk to the Risk Oversight Committee on a monthly basis and the Board of Directors on a quarterly and annual basis. The results are also reported annually to the advisory committees, whose members include Clearing Participants of each Clearing Business. If a problem with the sufficiency of the overall financial resources is identified during stress testing, JSCC will take appropriate action including review and/or revision of the necessary financial resources.

Review and Validation

JSCC validates the suitability of the scenarios, models, and parameters used in stress testing of loss compensation resources on at least a monthly basis. JSCC's stress scenarios reflect recent market prices, volatility fluctuations, and positions. For market liquidity fluctuations, rules for securing resources are prepared according to necessity for each product and parameters are revised based on prevailing market conditions.

JSCC's Risk Management Office validates the overall risk management model at least annually, and conducts revisions with the related Clearing Business division as necessary. This process verifies the effectiveness of the margin/Clearing Fund model and specifications according to the prevailing market environment, and revisions are conducted as necessary. The results of these validations are reported to the Board of Directors and the advisory committees of each Clearing Business.

Key Consideration 6:
In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

When conducting stress testing, JSCC considers a range of scenarios that are extreme, but plausible. These scenarios are suitably conservative and take into account relevant historical market data.

The scenarios used in stress testing are based on historical scenarios with proper specifications set in accordance with the nature of each product. For the Listed Products Clearing Business, stress scenarios are based on market data from a period of at least 20 years, including the largest historical fluctuations since market inception. This time period includes Black Monday (1987), the Asian Financial Crisis (1997-1998), the bankruptcy of LTCM (1998), the September 11 attacks in the U.S. (2001), the Lehman Shock (2008), and the Great East Japan Earthquake (2011).

For interest rate-sensitive products like IRS and OTC JGB, theoretical stress scenarios using yield curve fluctuations in historical scenarios are also employed.

In the case of listed derivatives, for which sudden price fluctuations and options volatility fluctuations are expected, stress scenarios are used which combine price fluctuations incorporating fat tails and volatility fluctuations incorporating autocorrelation.

Forward-looking scenarios are also used, which include theoretical future conditions.

Scenarios include the default of multiple Clearing Participants, including the largest. For products with a tear-up framework of all Clearing Participant positions should losses exceed the loss compensation resources, a scenario is used that incorporates a greater number of defaults than that used in the Clearing Fund calculation, in consideration of the large impact up to that point.

Key Consideration 7:
An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

Allocation of Credit Losses

JSCC's Business Rules clearly define the composition, calculation method, order of utilization of loss compensation resources, and the process for assessment for additional funds from Clearing Participants.

Losses which cannot be covered by a defaulting Clearing Participant's own funds would be covered by other financial resources, including the Clearing Fund of other Clearing Participants and JSCC's own resources. See Principle 13 (Participant-Default Rules and Procedures) for further details.

Replenishment of Financial Resources

In cases where the Clearing Fund of non-defaulting Clearing Participants is used for listed products, replenishment to the original amount will be required on the following business day. In the case of CDS, IRS, and OTC JGB, replenishment to the recalculated Clearing Fund amount will be required on the business day following the 30th day after the default (in cases where another default occurs during this period, the 30th day after such default, and so forth for successive defaults).

Principle 5: Collateral

An FMI that requires collateral to manage its or its participant's credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key Consideration 1:
An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

Eligible Collateral

JSCC has a basic policy of only accepting collateral with low risk in relation to credit, liquidity, and market. The scope of eligible collateral for each Clearing Business is defined based on this basic policy.

JSCC accepts the following collateral from its Clearing Participants for Initial Margin and Clearing Fund deposits.

Principle 5 (Collateral) Key Consideration 1 IV-3 Eligible Collateral

Eligible Collateral	Cash Products	Listed Derivatives	CDS	IRS	OTC JGB
Cash (JPY)	✔	✔	✔	✔	✔
Japanese Government Bonds	✔	✔	✔	✔	✔
Bonds guaranteed by the Japanese Government (*1)	✔	✔			
U.S. Treasury Bonds/Notes/Bills	—	Margin Only	✔	✔	—
Stocks (those listed on a Japanese financial instruments exchange)	✔	✔	—	—	—
Municipal Bonds (*1)	✔	✔	—	—	—
Special Bonds (excluding bonds guaranteed by the Japanese Government) (*1, 2)	✔	✔	—	—	—
Corporate Bonds (excluding bonds with stock acquisition rights and Exchangeable Corporate Bonds) (*1, 2)	✔	✔	—	—	—
Yen-denominated bonds issued by foreign juridical persons (SAMURAI bonds) (excluding Yen-denominated bonds with are the bonds stipulated in Article 2-11 of the Enforcement Ordinance of the FIEA, Convertible Bonds, and Exchangeable Corporate Bonds) (*1, 2)	✔	✔	—	—	—
Beneficiary securities of public and corporate bond investment trusts	✔	✔	—	—	—
Convertible Bonds (those listed on a Japanese financial instruments exchange)	✔	✔	—	—	—
Exchangeable Corporate Bonds (those listed on a Japanese financial instruments exchange)	✔	✔	—	—	—
Investment securities	✔	✔	—	—	—

*(*1) Limited to those with respect to which an underwriting contract is executed by a Financial Instruments Business Operator in connection with their issuance.*

*(*2) With respect to Special Bonds (excluding bonds guaranteed by the Japanese Government), Corporate Bonds (excluding bonds with stock acquisition rights and Exchangeable Corporate Bonds), and Yen-denominated Bonds issued by foreign juridical persons (excluding Yen-denominated bonds which are stipulated in Article 2-11 of the Enforcement Ordinance of the Financial Instruments and Exchange Act, Convertible Bonds, and Exchangeable Corporate Bonds), limited to those deemed appropriate by JSCC taking the issuing company's creditworthiness and other circumstances into account (e.g. all ratings obtained from Eligible Rating Agencies are A or above, etc.)*

JSCC confirms that collateral is eligible at the time it is deposited by Clearing Participants. As such, it is not possible for Clearing Participants to post ineligible collateral.

Wrong-Way Risk

JSCC guards against specific wrong-way risk by not accepting securities issued by a Clearing Participant or its group affiliates as collateral.

Key Consideration 2:
An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

Collateral Valuation

JSCC values collateral deposited by Clearing Participants, on a daily basis, using market prices and haircut ratios specified in the rules. JSCC maintains the right to change a valuation price at its discretion in cases such as considerable market fluctuations, as set forth in its rules.[25]

Collateral Haircuts

For bonds, conservative haircuts are adopted by ensuring that the haircuts cover the largest historical 4-day price movement over the previous year. In addition, for US Treasuries, JSCC takes into account foreign exchange risk.

For equities, collateral is valued at 70% in accordance with the application of the haircut. The suitability of this haircut is verified based a certain ratio of the largest historical 4-day price movements over both the previous year and previous 6 months.

JSCC is also able to apply ad hoc haircuts to collateral other than JPY. Haircuts are validated at least quarterly and revisions are made if required.

Key Consideration 3:
In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

JSCC has established conservative collateral haircuts that are calibrated to cover extreme price movements observed during periods of stressed market conditions and regularly validated. Therefore, JSCC considers the necessity for adjusting on procyclicality is kept to a minimum. See Key Consideration 2 of this Principle for details on the establishment and calibration of haircuts.

[25] Listed Products Clearing Business Rules Article 16, Paragraph 3, Article 52, Paragraph 3, and Article 70, Paragraph 5
CDS Clearing Business Rules Article 7
IRS Clearing Business Rules Article 7
OTC JGB Clearing Business Rules Article 70-8, Paragraph 2

Key Consideration 4:
An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

Concentration Limits

JSCC imposes limits to prevent undue concentration from certain collateral assets in order to protect against adverse price movements affecting its collateral holdings. For example, equity collateral is capped at 5% of the issued and outstanding shares of a single company.

Key Consideration 5:
An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

The only cross-border collateral accepted for JSCC's Clearing Businesses are US Treasuries, which have high market demand, high liquidity, and can be easily liquidated.

For the Listed Products Clearing Business, US Treasuries are held at JSCC's custodian bank in the US. For the IRS and CDS Clearing Businesses, US Treasuries are held in trust at a trust bank in Japan.

US Treasuries for the Listed Products Clearing Business are held at the US custodian bank in JSCC's name, and JSCC is recognized as the holder of such collateral. As such, JSCC is able to issue instructions regarding the liquidation of deposited US Treasuries as necessary. Additionally, JSCC also holds the authority under the Business Rules to issue instructions for and liquidate US Treasuries held at the Japanese trust bank in relation to the IRS and CDS Clearing Businesses.

Key Consideration 6:
An FMI should use a collateral management system that is well-designed and operationally flexible.

Collateral Management System Design

JSCC's collateral management system provides functionality for collateral eligibility checking, deposit and withdrawal processing, balance management, haircut management, and mark-to-market valuation.

By accessing the collateral management system, Clearing Participants are able to process the deposit and withdrawal of collateral and re-allocation of collateral deposited with JSCC.

Clearing Participants are able to access a collateral management system which provides real-time collateral information, such as types of eligible collateral assets, deposit balance and market price.

The collateral management systems used for each Clearing Business allow the deposit and withdrawal of collateral at any time during the operational hours specified in JSCC's Business Rules and operational procedures. It can restrict the deposit of ineligible collateral.

The collateral management system evaluates collateral daily and sets the scope for eligible assets by acquiring market data each day from external source (listed exchanges for equities, and the Japan Securities Dealers Association ("JSDA") for JGB OTC trades[26]) and applying haircuts. Revisions to haircuts can be implemented in a timely manner via overnight batch processing.

In relation to re-using collateral, JGB collateral for Initial Margin deposited by Clearing Participants in relation to the OTC JGB Clearing Business may be re-hypothecated with the BOJ for seamless operation of JGB DVP settlement.

As most of the primary operations in the collateral management system, including deposit, withdrawal, and valuation are conducted via STP, operations in times of market stress (a high volume of collateral-related transactions), no additional resources are required to ensure seamless operations.

[26] The JSDA publishes daily market prices for OTC JGB trades based on quotes submitted by financial institutions.

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Key Consideration 1:
A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.

Margin Framework

JSCC clears the following products and uses different margin frameworks for each, depending on the nature of each product:

- Listed Cash Products
- Listed Derivatives (Futures and Options)
- CDS
- IRS
- OTC JGB

JSCC requires the deposit of variation margin and initial margin from all Clearing Participants. For derivatives transactions, JSCC also requires the deposit of variation margin and initial margin from customers. Variation margin, which covers current exposure, and initial margin, which covers potential future exposure, are to provide coverage for the depositor's own potential losses, and the required amount of each is determined according to positions and market fluctuations.

Additionally, market liquidity is a factor when determining the required amount of margin for some products. The margin calculation methods for each Clearing Business are defined in JSCC's Business Rules and subordinate rules. (See Key Consideration 3 of this Principle for an overview.)

Provision of Information to Clearing Participants

JSCC provides a simulation system to allow Clearing Participants of the IRS and CDS Clearing Businesses to calculate initial margin based on hypothetical portfolios.

Margin for listed derivatives is calculated using the SPAN® methodology, and Clearing Participants can calculate their required margin using risk parameter files (RPF) provided by JSCC.

In addition to assisting in required margin calculation, the RPF can be used in margin simulation. (For example, JSCC provides Clearing Participants with the RPF, which includes parameters for the following week, for the purpose of margin simulation.)

Deposit and Withdrawal of Margin

JSCC calculates the required amount of variation margin and initial margin at least once daily at the close of business each day using the most recent market prices for each product, with deposits and payments occurring on either the date of calculation or the following business day.

For IRS, margin deposits are required twice a day. For the other Clearing Businesses, deposit of intraday margin is required if the market moves beyond a certain thresholds. This margin framework ensures margin requirements are calculated based on recent market prices.

Additionally, when accepting new IRS transactions from Clearing Participants, JSCC requires the pre-funding of variation margin and initial margin required to cover the entire portfolio, including both the new transaction and cleared transactions, before clearing the new transaction. New trades which fail to fulfil this requirement are rejected.

In the case of transactions from customers outside of Japan, considering the difference of time zones, JSCC permits customers to deposit initial margin with a Clearing Participant by the business day following that on which the Clearing Participant deposited initial margin for such customer transactions with JSCC.[27]

Key Consideration 2:
A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.

JSCC uses reliable price data in its margin calculations. JSCC's primary sources of price information are as follows, all of which use prices that reflect market conditions in a timely manner.

- Listed products: JSCC calculates margin using trade prices on the relevant exchanges, or prevailing market prices, such as final quotes or theoretical prices.
- CDS: Price quotes are provided by Clearing Participants. JSCC establishes prices based on the average of the quotes, having excluded the outliers. JSCC subjects Clearing Participants who submit outliers to the payment of additional Clearing Fees or mandatory trade execution based on the submitted quote in order to maintain the quality of submitted prices.
- IRS: Price quotes are provided by Clearing Participants. For highly liquid interest rate product, additional quotes are provided by third party inter-dealer brokers. JSCC establishes prices based on the average of the quotes, excluding the outliers. JSCC subjects Clearing Participants who submit outliers to the payment of additional Clearing Fees, thus maintaining the quality of prices submitted.
- OTC JGB: Prices are acquired by JSCC from the JSDA, which publicizes prevailing market prices of OTC JGBs based on quotes submitted by market participants, which are financial institutions participating in OTC JGB transactions.

For products which only rely on quotes, JSCC has procedures in place to ensure the accuracy of the price data, including averaging quotes with outliers excluded and applying penalties, such as additional Clearing Fees, to Clearing Participants that submit outliers.

Additionally, when handling new products that rely on quotes, prior to launch, JSCC confirms that Clearing Participants are able to submit reliable quotes.

[27] IRS Clearing Business Rules Chapter 6
CDS Clearing Business Rules Chapter 6

Key Consideration 3:
A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.

Margin Model

JSCC sets initial margin to cover potential future exposure under regular market conditions, primarily using the positions and market fluctuations for each product to determine required amounts. As such, JSCC's model seeks to cover regular price movements at a confidence level of 99%, or more for some products, with a holding period until liquidation of positions set on a per-product basis.

Additionally, JSCC may impose a Liquidity Charge, which takes account of market liquidity and position concentration according to the nature of each product.

JSCC also has prepared a framework to prevent sudden changes in required margin amounts by including stress scenarios in some of the margin calculations and setting a conservative floor for the required margin amount. The approach used may vary according to the nature of each product.

Margin Calculation Method

(1) Listed Products: Cash products
JSCC calculates the daily initial margin for cash products based on the following:

- Mark-to-market value of each unsettled contract evaluated using the latest price
- Expected loss based on the unsettled market capitalization and price fluctuation of each issue (1-day holding period, 120 day reference period, 99% confidence level)

Separate payment/deposit of variation margin is not conducted for cash products, and an equivalent amount is included in initial margin calculations. Risk of non-deposit of margin following an increase in the required amount is also taken into consideration when determining initial margin.

(2) Listed Products: Listed Derivatives
JSCC determines the required amount of initial margin for listed derivatives by applying the net option value to the amount calculated using Chicago Mercantile Exchange's ("CME") SPAN® methodology. SPAN® methodology calculates the risk arising from a portfolio of futures and options on the account level according to a sensitivity analysis, with consideration given to the nonlinear risk of option contracts. SPAN® margin calculation requires the definition of a Price Scan Range and a Volatility Scan Range, as well as a range of other parameters, including Intra-Commodity and Inter-Commodity correlations.

In order to reflect recent price fluctuations in a timely manner, the Price Scan Range, which represents such fluctuations, employs a parameter determination method factoring in implied volatility calculated from the option premium (1-day holding period, 99% confidence level). For products which do not involve options, a parameter determination method referencing historical price fluctuations is used (1-day holding period, reference period of at least 33 weeks, 99% confidence level).

For the Volatility Scan Range, which represents volatility fluctuations, a parameter determination method referencing past volatility fluctuations is used (1-day holding period, reference period of at least 33 weeks, 99% confidence level).

(3) CDS

JSCC calculates initial margin for CDS transactions by applying a variety of additional charges in reflection of the nature of CDS transactions to the Initial Margin Base Amount obtained via historical simulation (expected shortfall) methodology. These include a charge to cover the risk of the reference entity experiencing a credit event.

1) Initial Margin Base Amount

The Initial Margin Base Amount is calculated according to a historical simulation (expected shortfall) methodology, in order to cover the risk from price fluctuations. Specifically, it is set to cover a certain level of NPV fluctuation determined using daily prices during a certain historical period for the CDS positions on the date of calculation. Calculation parameters include a reference period of 750 days, a confidence level of the average of the worst 1%, and a holding period of 5 days. In addition to data during the reference period, a stress scenario is included with double the regular holding period (10 days) for the largest historical fluctuation. These considerations take into account the tendency for CDS to experience sudden price fluctuations.

2) Short Charge and Bid/Ask Charge

The Short Charge is calculated to cover “jump-to-default” risk. Net positions are calculated for each reference entity and the Short Charge is calculated by multiplying the notional amount of the largest net short position by 0.8.

The Bid/Ask Charge is calculated to cover liquidity risk arising when liquidating positions following a Clearing Participant default. Net positions are calculated for each issue and the Bid/Ask Charge is calculated by multiplying the sensitivity (PV01) of the net position by the bid/ask spread, which is set based on a market survey of Clearing Participants.

3) Credit Event Margin and Single Name Margin

Credit Event Margin is added to initial margin to cover the risk arising from a reference entity which has experienced a credit event. The net short positions of trades referencing such reference entity are calculated. The net positions are then multiplied by a ratio, applicable to the reference entity, which is prescribed by JSCC in consideration of market conditions.

Single Name Margin is added to initial margin to cover the risk of a reference entity experiencing a restructuring credit event. Net positions of transactions referencing such reference entity are calculated. For net short positions, the Single Name Margin is derived by multiplying the net position by a ratio, applicable to the reference entity, which is prescribed by JSCC dependent on market conditions. For net long positions, the Single Name Margin is derived by taking the present value of future cash flows for trades referencing the reference entity.

JSCC also applies a concentration charge to cover the risk of certain Clearing Participants with concentrated CDS positions. Specifically, JSCC increases the required initial margin of Clearing Participants which hold positions in excess of a level set based on market size. This measure acts to discourage Clearing Participants from taking excessive positions relative to the market size.

(4) IRS

JSCC calculates the required amount of initial margin for IRS transactions using historical simulation (expected shortfall) methodology, and applies charges in consideration of the nature of IRS transactions.

1) Initial Margin

The required amount of initial margin is calculated using historical simulation (expected shortfall) methodology to cover risks from interest rate fluctuations. Specifically, it is set to cover a certain amount of an NPV fluctuation calculated using a daily yield curve fluctuation scenario for a given historical period.

Parameters used in the calculation include a reference period of 1,250 days, a confidence level of the average of the worst 1%, and a holding period of 5 days (7 days for customer transactions). In addition to the data from the reference period, data from the significant historical interest rate fluctuations are also used as stress scenarios. This is to prevent sudden changes in required initial margin when stress events are applied to or removed from the reference period data. Additionally, JSCC has methodologies in place to revise the historical interest rate fluctuation scenarios, based on current interest rate trends.

2) Liquidity Charge

Liquidity Charge is calculated to cover market liquidity risk arising from the liquidation of a defaulting Clearing Participant's positions. When the PV01 of positions for each tenor bucket exceeds a certain level, a Liquidity Charge is imposed. This charge is calculated based on by multiplying the excess by an ask/bid spread derived from a market survey of Clearing Participants.

(5) OTC JGB

JSCC requires initial margin for OTC JGBs to cover the risk of price fluctuations calculated using the delta method, with a variety of additional charges to take account of the specific nature of OTC JGBs.

1) Initial Margin

For OTC JGBs, initial margin is referred to as POMA (Post Offset Margin Amount). POMA is calculated using a delta method and based on historical price fluctuations during a given period, taking into account the correlations between issues. Parameters used in calculations include a reference period of 250 days, a confidence level of 99%, and a holding period of 3 days. Additionally, in order to reflect changes in positions due to intraday DVP settlement, Adjusted POMA is calculated according to the same method at the completion of intraday settlement.

In order to reflect large historical fluctuations in the market and positions, Average POMA is calculated by averaging a certain ratio of the top POMA for a given historical period. Though correlations between issues are used in POMA calculations, a minimum amount is set as a certain ratio of the risk before offsetting to prevent excessive offsetting. The greatest of POMA, Adjusted POMA, Average POMA, and the minimum amount is used to determine the initial margin required to cover actual market price fluctuations.

2) Other Charges

Charges added to initial margin include (a) initial margin to cover FOS (Fund Only Settlement) failure risk, (b) initial margin to cover repo rate fluctuation risk, and (c) market impact charge.

Initial margin to cover FOS failure risk is calculated to cover the loss arising from failure of Fund Only Settlement, including the payment/receipt of variation margin or JGB coupon, due to the default of a Clearing Participant. It is calculated by averaging a certain ratio of the top settlement amounts during a certain historical period.

Initial margin to cover repo rate fluctuation risk is calculated to cover the repo cost arising from executing repo transactions in the liquidation of the positions of a Clearing Participant which has defaulted. It is calculated by multiplying the repo trade amount needed to reconstruct the OTC JGB positions by the repo rate spread expected by JSCC. As with the initial margin calculation, the greatest of the risk amount, the average of a certain ratio of the top risk amounts for a given historical period, and the minimum amount are used.

The market impact charge is calculated to cover the market liquidity risk arising from the liquidation of a defaulted Clearing Participant's positions. Specifically, a bid/ask spread is determined based on a market survey of Clearing Participants for each JGB type, maturity, and terms to maturity. The relevant bid/ask spread is then multiplied by the position's interest rate sensitivity.

Key Consideration 4:
A CCP should mark participant positions to market and collect margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.

JSCC has adopted variation margin frameworks which aim to reduce current exposure for each of its Clearing Businesses. Variation margin is paid/received once per day (twice for IRS transactions). When calculating variation margin, positions are marked-to-market using the most recent market prices, and the difference between the prior valuation and the latest mark-to-market is paid/received.

A framework is also in place to handle large price fluctuations, where intraday calculations are made using the most recent market prices, with intraday margin calls issued if required to cover any exposures on the same day. However, intraday market prices are difficult to acquire for OTC JGBs when recalculating required margin. Therefore, JSCC applies a predetermined ratio to the required margin calculation based on positions at the previous day's close of business to recalculate the intraday required margin and issue intraday margin calls.

Key Consideration 5:
In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonized overall risk-management systems.

Portfolio margining

JSCC calculates the required amount of initial margin for each type of transaction for each proprietary and customer account of Clearing Participants based on the portfolio of positions belonging to each account.

When calculating margin for listed derivatives (futures/options), JSCC uses the SPAN® methodology. Within that, JSCC allows margin offsetting for positions in the same product but different contract months based on price fluctuation correlations, as well as margin offsetting between products with high correlation.

For CDS transactions, JSCC calculates margin by applying a historical simulation (expected shortfall) methodology, to take account of price fluctuation correlation for positions in different reference entities and different terms to maturity.

For IRS transactions, JSCC calculates margin by applying a historical simulation (expected shortfall) methodology, to take account of interest rate fluctuation correlation for positions in different rate types and different tenors.

For OTC JGBs, JSCC calculates margin using offset ratios based on price fluctuation correlation for positions in issues with different terms to maturity.

Cross-margining

JSCC does not offer cross-margining arrangements with any other CCPs.

Robustness of Margin Model

JSCC conducts daily backtesting to verify the robustness of its margin model.

Parameters used to calculate required margin are regularly revised, with additional revisions made for times of market stress.

Additionally, correlation parameters used in margin calculations for listed derivatives and OTC JGBs are reviewed on a weekly basis. JSCC also updates historical data on price fluctuations for margin calculation of CDS and IRS transactions using a historical VaR method, on a daily basis. As such, correlated fluctuations are reflected in margin calculations in a timely manner.

Key Consideration 6:
A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

Backtesting

JSCC performs daily backtesting of each account for each Clearing Business using required margin amounts and losses based on actual price fluctuations, in order to confirm that the target confidence level prescribed in the Risk Management Policy is achieved.

If the target confidence level has not been achieved, JSCC will analyze the cause, and examine appropriate measures, such as revisions to the margin model or parameters, as needed.

JSCC reports backtesting results to the Risk Oversight Committee on a monthly basis, to the Board of Directors on a quarterly basis, and to Clearing Participants via the advisory committees of each Clearing Business on an annual basis.

Key Consideration 7: A CCP should regularly review and validate its margin system.

JSCC reviews and validates its overall margining models at least annually. Within these reviews, JSCC evaluates the policies and calculation methods of the risk management framework, including margining, and validates their sufficiency and propriety based on backtesting and stress testing results. Additionally, JSCC adds or revises margin models, as necessary, when implementing new products.

The results of the overall review and validation of the margin model are presented annually to the Board of Directors and to Clearing Participants via the advisory committees of each Clearing Business.

Principle 7: Liquidity Risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key Consideration 1:
An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

The primary potential source of liquidity risk is the default of a Clearing Participant. When a Clearing Participant defaults, JSCC will first use cash deposited as collateral by the defaulting Clearing Participant and cash withheld from payments to the defaulting Clearing Participant to perform fund settlement. In preparation for cases where these funds are insufficient, JSCC has secured yen-denominated liquidity supply from multiple commercial banks that have been designated as Fund Settlement Banks (Liquidity Supply Facilities).

Each of JSCC's Fund Settlement Banks is also a Clearing Participant, and thus plays multiple roles in relation to JSCC. However, in order to ensure the supply of liquidity even in the case of a Fund Settlement Bank's default, JSCC has secured Liquidity Supply Facilities from multiple Fund Settlement Banks.

In addition to this, because a large amount of liquidity is expected to be required if an OTC JGB Clearing Participant defaults due to the large notional size of transactions, JSCC has established a framework to procure liquidity via JGB repo transactions with Clearing Participants and other financial institutions.

Key Consideration 2:
An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

In the fund settlement for each of its Clearing Businesses, JSCC has established a framework whereby payments from JSCC are made to receiving Clearing Participants after funds are received by JSCC from paying Clearing Participants. As such, there is no need to procure intraday liquidity for fund settlement, except in the event of a paying Clearing Participant default. Therefore, JSCC continuously monitors the status of payments from paying Clearing Participants.

Additionally, JSCC regularly receives information on Clearing Participant cash flow. If, for example, the expected amount of funds needed for daily fund settlement by a Clearing Participant exceeds either that Clearing Participant's fund settlement capability or the largest historical levels of fund settlement, JSCC will contact that Clearing Participant to discuss the situation.

Key Consideration 3:
A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

This consideration is not applicable to JSCC, as JSCC does not provide any payment system or SSS functionality.

Key Consideration 4:
A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme, but plausible market conditions.

JSCC has secured Liquidity Supply Facilities from multiple Fund Settlement Banks to ensure fund settlement.

As JSCC conducts settlement for all of its Clearing Businesses in Japanese Yen, JSCC has secured Liquidity Supply Facilities denominated in Japanese Yen.

JSCC conducts daily stress tests to confirm the sufficiency of its total liquidity supply.

JSCC has established a framework for procuring liquidity via repo transactions with Clearing Participants for OTC JGBs and is not dependent on Liquidity Supply Facilities. As such, the stress testing of the sufficiency of Liquidity Supply Facilities applies for all products, except OTC JGBs. See Key Consideration 9 of this Principle for liquidity stress testing for OTC JGBs.

In stress testing, JSCC calculates and totals the stress risk arising from each transaction subject to clearing. JSCC calculates stress risk based on extreme but plausible price fluctuations, such as the largest observed historical price fluctuation for each market.

A large amount of cash equity transactions are executed to liquidate arbitrage transactions on the day following the final trading date of each contract month (“SQ Date”) of index futures/options. This results in a significant increase in the liquidity requirement. To account for this, JSCC uses the largest historical fund settlement payment, including SQ Dates, in the stress risk amount.

The number of simultaneous defaults used in the stress risk calculations is 2 Clearing Participants for CDS transactions (including the default of affiliates of the defaulted Clearing Participant), due to the complexity of “jump-to-default” risk, and 1 Clearing Participant for all other Clearing Businesses (including the default of affiliates of the defaulted Clearing Participant).

Additionally, JSCC monitors the stress risk amount using coverage of the 2 largest Clearing Participants among all of Clearing Businesses, in order to promptly identify the emergence of liquidity risk.

These stress risk calculations assume the largest loss in simultaneous stress scenarios occurring in separate Clearing Businesses. However, since it is unlikely that the individual scenarios assumed for each Clearing Business would be realized simultaneously, JSCC also calculates stress risk based on stress scenarios which cover across all Clearing Businesses (excluding OTC JGBs).

In addition to scenarios based on historical data, JSCC also calculates stress risk based on hypothetical forward-looking scenarios and conducts reverse stress tests to cover a wider range of cases and allow for more varied analysis.

Key Consideration 5:
For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transaction with) the relevant central bank. All such resources should be available when needed.

JSCC has prepared the following qualifying liquid resources to meet its liquidity needs:

- Cash deposited by a defaulting Clearing Participant as margin or Clearing Fund; and
- Liquidity Supply Facilities.

In addition to the above, JSCC has established a liquidity framework via JGB repo transactions with Clearing Participants and other financial institutions, for OTC JGBs.

JSCC is able to use cash collateral deposited as margin and Clearing Fund by a defaulting Clearing Participant on the day when it becomes necessary.

Liquidity Supply Facilities are provided by commercial banks which have been designated as Fund Settlement Banks. Pursuant to agreements with each Fund Settlement Bank, funds should be made available on the date of application, if the application is made prior to a pre-agreed cut-off time.

JGB repo transactions, which are utilized to meet any funding needs in the OTC JGB Clearing Business, are highly liquid and JSCC expects it can procure the necessary funds on an intraday basis.

When the need arises for JSCC to procure liquidity in times of stress, JSCC expects that it is able to procure the required amount using these qualifying liquid resources.

Key Consideration 6:
An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as part of its liquidity plan.

As in Key Consideration 5 of this Principle, JSCC expects that it is able to procure the required amount of liquidity using qualifying liquid resources. When necessary, JSCC is also able to use its own assets as supplementary liquid resources.

Key Consideration 7:
An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

Liquid Resources

JSCC's qualifying liquid resources are composed of cash deposited as margin or Clearing Fund by a defaulting Clearing Participant and Liquidity Supply Facilities. Additionally, JSCC has established a liquidity framework via JGB repo transactions with Clearing Participants and other financial institutions for OTC JGBs.

Reliability of Liquidity Providers

JSCC diversifies its liquidity sources by receiving Liquidity Supply Facilities from 6 Fund Settlement Banks. The concentration status of liquidity provider resources is monitored on a monthly basis.

JSCC considers the Liquidity Supply Facility from each Fund Settlement Bank is sufficient for performing its commitment in proportion to the Fund Settlement Bank's balance sheet. During the 2008 Financial Crisis, JSCC was able to access Liquidity Supply Facilities without issue.

The Fund Settlement Banks all operate under the supervision of the JFSA and have access to the fund provision operations of the BOJ. JSCC continuously monitors the financial soundness of these banks by receiving regular reports on their financial status.

JSCC has established a liquidity framework via JGB repo transactions with Clearing Participants and other financial institutions for OTC JGBs. This framework assumes that, when procuring liquidity from the market is difficult, Clearing Participants will access the supplementary lending of the BOJ, which uses JGBs as collateral, ensuring its effectiveness.

JSCC confirms the effectiveness of its access to the liquid resources of liquidity providers in default settlement fire drills that are conducted at least annually.

Key Consideration 8:
An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

JSCC utilizes an account at the BOJ for the settlement of funds for each of its Clearing Businesses, to the extent possible. Specifically, all fund settlement for the CDS, IRS, and OTC JGB Clearing Businesses is conducted through a BOJ account. For the Listed Product Clearing Business, because of the diverse composition of Clearing Participants, accounts at both the BOJ and commercial banks are used based on each Clearing Participant's needs.

Key Consideration 9:
An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressure in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Stress Testing of Liquidity

JSCC conducts stress testing at least once a day to verify that Liquidity Supply Facilities are sufficient for potential liquidity needs.

JSCC's stress testing framework includes a range of scenarios including the largest historical price fluctuations and extreme but plausible hypothetical scenarios.

The results of daily stress tests are reported to the CRO, the President and CEO and other executive directors, and the heads of related divisions. Additionally, as part of compliance with the Risk Management Policy in relation to liquidity risk, reports are made to the Risk Oversight Committee on a monthly basis, and to the Board of Directors on a quarterly and annual basis. If a problem with Liquidity Supply Facilities is identified as a result of stress testing, JSCC will examine a necessary measure, including revisions to the framework.

The liquidity framework via JGB repo transactions for OTC JGBs utilizes Clearing Participants and is based upon an assumption that, when procuring liquidity from the market is difficult, Clearing Participants will access the supplementary lending of the BOJ. As haircuts are applied to JGBs when Clearing Participants access the supplementary lending of the BOJ, Clearing Participants may also select repo transactions with JSCC with haircuts applied. At such times, because Clearing Participant initial margin covers the equivalent haircut, JSCC confirms daily that it can cover equivalent haircuts with initial margin deposits, even in the case where all Clearing Participants select repo transactions with haircuts applied.

The results of this confirmation are reported via the same framework as the stress tests of Liquidity Supply Facilities, above.

Stress scenario

JSCC conducts stress tests according to various extreme but plausible scenarios. The scenarios are conservative and reference related historical market data.

For stress scenarios used to confirm the sufficiency of the Liquidity Supply Facilities, JSCC uses historical scenarios as a base, and establishes other appropriate scenarios based on the nature of the products involved.

Historical scenarios are based on market data going back at least 20 years, including the largest fluctuations since the opening of the listed products market. This range includes stress events such as Black Monday (1987), the Asian Financial Crisis (1997-1998), LTCM's bankruptcy (1998), the September 11th attacks in the U.S. (2001), the Lehman Shock (2008), and the Great East Japan Earthquake (2011).

On the other hand, because historical scenarios are not always appropriate for IRS transactions, JSCC utilizes stress scenarios including yield curve shifts.

Furthermore, JSCC uses forward-looking scenarios, including hypothetical stress scenarios featuring future expectations.

JSCC assumes the default of the largest Clearing Participant (including affiliates of such Clearing Participant) for each of its Clearing Businesses, except for CDS, where it assumes the simultaneous default of the largest 2 Clearing Participants (including affiliates of such Clearing Participants) due to the complexity of the product.

Review and Validation of Stress Scenarios

JSCC validates the scenarios, models, and parameters used in stress testing of Liquidity Supply Facilities at least monthly. JSCC ensures that stress scenarios reflect the most recent market prices and positions.

JSCC's Risk Management Office validates the overall risk management model, including Liquidity Supply Facilities, on at least an annual basis, and conducts revisions as necessary. The results of these validations are reported to the Board of Directors.

Key Consideration 10:
An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event so that it can continue to operate in a safe and sound manner.

JSCC has comprehensive rules[28] concerning a change of settlement cut-off times and deferment of settlement. Under these rules, however, settlement cut-off times cannot be

[28] Listed Products Clearing Business Rules Article 80
CDS Clearing Business Rules Article 113
IRS Clearing Business Rules Article 113
OTC JGB Clearing Business Rules Article 91

changed nor can settlement be deferred, even in the default of one or more Clearing Participant. JSCC assumes that settlement will be conducted according to the times prescribed in its rules. This is supported by sufficient and timely access to Liquid Supply Facilities and liquidity via JGB repo transactions.

Settlement

<u>Principle 8: Settlement Finality</u>

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Key Consideration 1:
An FMI's rules and procedures should clearly define the point at which settlement is final.

<u>Point of Settlement Finality</u>

JSCC conducts settlement via 2 methods: securities settlement and fund settlement. For both methods, the point of settlement finality is when the transfer has been made from the Clearing Participant's account with a CSD or Fund Settlement Bank.

<u>Fulfillment of Obligations pertaining to Settlement</u>

Settlement methods between JSCC and Clearing Participants are specified in JSCC's Business Rules, and obligations are fulfilled at the point where settlement has been conducted according to the Business Rules.

<u>Legal Certainty of Finality</u>

JSCC specifies in its Operational Procedures that securities settlement or fund settlement are irrevocable after the completion of the book-entry transfer. The Operational Procedures prescribe procedures to be observed by Clearing Participants based on JSCC's Business Rules, and are legally binding on Clearing Participants. This ensures the legal certainty for settlement finality.

Key Consideration 2:
An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

The processes and operations of each of JSCC's Clearing Businesses are designed to provide for final settlement no later than the end of the value date or on the day the receipt/payment is due by specifying the settlement date and settlement cut-off time therein.

JSCC has never experienced an incident where the final settlement is deferred past the scheduled settlement date.

Settlement is made on a real-time basis during the day. The settlement is final when JSCC's payment instructions have been carried out in a Clearing Participant's Fund Settlement Bank or CSD. Clearing Participants can confirm fulfillment of final settlement via JSCC's clearing system or a CSD's system as necessary.

Key Consideration 3:
An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

JSCC has Operational Procedures in place for each Clearing Business. The Operational Procedures prescribe operational procedures for Clearing Participants based on JSCC's Business Rules, and the point when transfer instructions become irrevocable.

Settlement instructions to JSCC may not be revoked after completion.

Provisions and authority regarding revocation of transfer instructions prior to the completion of a transfer are prescribed in the rules and procedures of each CSD.

Principle 9: Money Settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Key Consideration 1:
An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

JSCC only uses Japanese Yen for settlement. For each of its Clearing Businesses, JSCC uses an account with the BOJ, the central bank, whenever possible. Specifically, all settlement for the CDS, IRS, and OTC JGB Clearing Businesses is conducted through a BOJ account. For the Listed Products Clearing Business, due to the diversity of Clearing Participants, settlement is possible through either a BOJ account or an account at one of six commercial banks designated by JSCC as Fund Settlement Banks, based on the choice of each Clearing Participant.

JSCC holds a settlement account in its own name at the six aforementioned Fund Settlement Banks and BOJ. Settlement between each Clearing Participant and JSCC is conducted via book-entry transfer between the accounts of the Clearing Participant and JSCC, at the bank designated by the Clearing Participant. This book-entry transfer is conducted between accounts at the same bank, either with BOJ or any of the Fund Settlement Banks, and is not performed between different banks.

Key Consideration 2:
If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

As JSCC must use commercial bank money in addition to central bank money, JSCC only designates commercial banks which satisfy its “Policies for Designation of Fund Settlement Banks” as Fund Settlement Banks. Fund Settlement Banks approved by JSCC are those with a presence in Japan, with sufficient capitalization and high credit. Furthermore, all Fund Settlement Banks are subject to supervision by the JFSA and monitoring by BOJ.

Key Consideration 3:
If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

In order to eliminate settlement risk arising from credit risk, accompanying the use of commercial bank money, to the extent possible, JSCC designates Fund Settlement Banks according to the “Policies for Designation of Fund Settlement Banks,” as mentioned in Key Consideration 2 of this Principle, selecting commercial banks with sufficient capitalization and high credit.

Within the “Policies for Designation of Fund Settlement Banks,” JSCC requires banks to be subject to the supervision of a regulator, maintain stable business operations and profitability, and have sufficient capitalization and high credit above a predetermined level.

JSCC confirms the soundness of Fund Settlement Bank finances by receiving regular reports from each commercial bank designated as a Fund Settlement Bank on their financial conditions and confirming their daily settlement operations run smoothly. In this way, JSCC continuously monitors the banks' compliance with the "Policies for Designation of Fund Settlement Banks."

Furthermore, by designating six Fund Settlement Banks and BOJ, JSCC has distributed the risk of being unable to conduct settlement operations due to a Fund Settlement Bank's bankruptcy. JSCC also monitors the status of concentration of settlement across the Fund Settlement Banks on a monthly basis.

All JSCC accounts at Fund Settlement Banks are covered by the Japanese Deposit Insurance System, thereby limiting credit risk arising from the commercial banks.

Key Consideration 4:
If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

JSCC conducts all money settlements through Fund Settlement Banks and BOJ. No money settlement is conducted on its own books.

Key Consideration 5:
An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

Central Bank Money Settlement

For settlement at the central bank, BOJ's "Rules on Current Deposit Account" Article 5, Paragraph 3 states that "instruction of fund transfer shall be irrevocable." Therefore, such transfers are final upon completion of the transfer process in the BOJ Financial Network System ("BOJ-NET").

Commercial Bank Money Settlement

For settlement using Fund Settlement Banks, transfers between JSCC and Clearing Participants are conducted by wire-transfer. The agreements between JSCC and Fund Settlement Banks specify the time at which funds shall be transferred to the relevant JSCC account.

This is the established approach for fund settlement in the Japanese financial market, which JSCC views as a safe and robust settlement system.

Settlement is considered to be final and irrevocable once the funds are credited to the receiver's bank account. JSCC understands that these arrangements are supported by Japanese laws and regulations.

Principle 10: Physical Deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Key Consideration 1:
An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

JSCC conducts most of the securities settlement via the book-entry transfer system of the CSD. Currently, the only product subject to physical delivery between JSCC and Clearing Participants are Investment Securities issued by the BOJ.

JSCC's Business Rules prescribe that Investment Securities issued by the BOJ are to be physically delivered between a Clearing Participant and JSCC and specify the settlement cut-off time for such to fulfill delivery obligations.[29]

JSCC's Business Rules are publicly available through its website.

In addition to the Business Rules, JSCC provides Clearing Participants with the "Operational Procedures for Non-DVP Settlement," which prescribe detailed operational procedures related to physical delivery. This facilitates Clearing Participants to conduct operations with a full understanding of the physical delivery process.

Key Consideration 2:
An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

Storage/Delivery Risk related to Physical Instruments

JSCC views (1) principal risk, (2) risk of theft/destruction, and (3) forgery risk to be the primary risks associated with storage/delivery of physical securities (securities certificates). Measures for these risks are outlined below.

Measures for Principal Risk

The aforementioned "Operational Procedures for Non-DVP Settlement" prescribe that receiving participants must pay settlement funds to JSCC prior to receiving securities from JSCC, and that delivering participants must deliver securities to JSCC before receiving payment from JSCC. Through this process, JSCC eliminates the principal risk associated with physical delivery.

Risk of Theft/Destruction

The process for receipt and delivery of securities from the delivering participant to JSCC and from JSCC to the receiving participant is completed on the same day. As such, the period that JSCC holds the securities is extremely short and the risk of theft/destruction is limited. Securities received are locked in a fireproof safe to reduce the risk of theft and destruction.

[29] Listed Products Clearing Business Rules Articles 47, 48, and 56

Forgery Risk

In order to reduce the risk of forgeries, JSCC confirms the authenticity of the certificates at the time of transfer and records the serial number of transferred certificates to enable tracking.

CSDs and Exchange-of-Value Settlement Systems

<u>Principle 11: Central Securities Depositories</u>

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risk associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilized or dematerialized form for their transfer by book entry.

Because JSCC is not a central securities depository, this principle does not apply.

Principle 12: Exchange-of-Value Settlement Systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transaction), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key Consideration 1:
An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

Use of DVP Settlement

JSCC uses a DVP settlement framework which links the delivery of securities with payment for the settlement of listed cash securities (excluding Investment Securities issued by the BOJ), listed JGBs, and OTC JGBs, between JSCC and Clearing Participants. This framework eliminates principal risk associated with the settlement of cash securities.

(1) DVP Settlement of Listed Cash Securities (Net-Net)

JSCC uses Net-Net DVP settlement for listed cash securities (Model 3 in CPSS's "Delivery Versus Payment in Securities Settlement System"). Under this scheme, the value of securities JSCC delivers to a Clearing Participant is limited to the value of funds and securities received by JSCC from such Clearing Participant. This prevents JSCC from fulfilling obligations to the Clearing Participant in excess of that which the Clearing Participant fulfills toward JSCC, thereby eliminating the principal risk of a Clearing Participant default.

Transfer of funds and securities according to this scheme is conducted between the accounts of a Clearing Participant and JSCC, with such transfers being final at the point they are executed. (Please see Principle 8 (Settlement Finality).) Additionally, when delivery of securities to a Clearing Participant is withheld, such securities are held within JSCC's account until delivery in order to protect them from third-party claims, such as the creditors of the Clearing Participant.

(2) DVP Settlement of JGBs (Gross-Gross)

For settlement of listed JGBs and OTC JGBs, JSCC uses the Gross-Gross (Model 1 in CPSS's "Delivery Versus Payment in Securities Settlement System" (1992)) DVP settlement (RTGS (Real-Time Gross Settlement)) provided by BOJ, in its role as the CSD for JGBs, as a BOJ participant. Under this scheme, settlement of cash and securities between a Clearing Participant and JSCC is fulfilled simultaneously on a gross basis and is final at the time of transfer. (Please see Principle 8 (Settlement Finality).)

Default Procedures

Principle 13: Participant-Default Rules and Procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key Consideration 1:
An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following default.

Clearing Participant Default

JSCC's rules set out the details of the default management procedures, including the events constituting a default, the sequencing of the process and obligations of parties involved. JSCC will declare that a Clearing Participant is in default if such participant is, or is likely to be, unable to perform its obligations, according to the determination of JSCC's senior management. If a default is declared, JSCC can take actions to contain losses by halting clearing of new transactions from the defaulter and liquidating the defaulter's positions.

JSCC's methods for disposing of positions vary according to the nature of the product for each Clearing Business. Specifically, offsetting transactions are conducted in the market for listed products, and an auction involving non-defaulting Clearing Participants is used for CDS, IRS, and OTC JGBs. In such cases, for CDS and IRS transactions, hedge transactions are to be promptly executed for the defaulter's positions based on the advice of the related Clearing Business's advisory committee (CDS Default Management Committee, IRS Default Management Committee), in order to prevent the increase of losses before the auction.

When disposing of positions, customer positions and collateral related to listed derivatives, CDS, and IRS transactions are able to be transferred to non-defaulting Clearing Participants. JSCC does not receive deposits of customer collateral for listed cash products and OTC JGBs. JSCC uses its loss compensation financial resources according to its rules to cover losses arising in the default process.

Even when a Clearing Participant default occurs, JSCC will fulfill settlement according to the regular schedule. In order to fulfill settlement in this manner, JSCC maintains Liquidity Supply Facilities for procuring necessary liquidity. Additionally, JSCC has established a framework for liquidity via JGB repo transactions with Clearing Participants for OTC JGBs. See Principle 7 (Liquidity Risk) for further details.

Composition of Loss Compensation Financial Resources

JSCC has established a loss compensation framework for each Clearing Business. This prevents losses from a single Clearing Business impacting the others.

Below is an overview of the loss compensation financial resources for each Clearing Business.

(1) Listed Products Loss Compensation

For the Listed Product Clearing Business, losses resulting from a Clearing Participant default will be covered in the following order:

1) The defaulting Clearing Participant's margin, Clearing Fund, and other collateral (including collateral deposited for other Clearing Businesses, if any remains)
   *See Principle 6 (Margin) for margin and Principle 4 (Credit Risk) for Clearing Fund.
2) Contribution from the relevant market operator
   · The market operators of the listed products which JSCC clears (exchange/PTS) contributes funds to cover losses arising from such products according to an agreement with JSCC.
3) Contribution from JSCC
4) Clearing Fund contributions from non-defaulting Clearing Participants (only for listed derivatives Clearing Participants)
   · Non-defaulting Clearing Participants Clearing Fund contributions are consumed on a pro rata basis according to the risk amount of each participant.
   · If a loss consumes all or part of the Clearing Fund contributions from a non-defaulting Clearing Participant, such contribution shall be replenished by the business day following such consumption.
5) Additional contribution from non-defaulting Clearing Participants
   · If the loss resulting from a Clearing Participant default exceeds the sum of all the preceding financial resources, the non-defaulting Clearing Participants are required to cover any remaining losses by an additional contribution called a "Special Clearing Charge." The Special Clearing Charge is calculated separately for Securities Clearing Qualification, JGB Futures Clearing Qualification, and Index Futures Clearing Qualification, and the total amount is distributed on a pro rata basis among Clearing Participants holding such qualifications according to risk amount.

(2) CDS/IRS Loss Compensation

For the CDS and IRS Clearing Businesses, losses resulting from a Clearing Participant default in each Clearing Business will be covered in the following order:

1) The defaulting Clearing Participant's margin, and Clearing Fund (including collateral deposited for other Clearing Businesses, if any remains)
   *See Principle 6 (Margin) for margin and Principle 4 (Credit Risk) for Clearing Fund.
2) Contribution from JSCC
   · JSCC contributes funds in the second and third tiers.
3) Clearing Fund contributions from non-defaulting Clearing Participants and an additional contribution from JSCC
   · Clearing Fund contributions from non-defaulting Clearing Participants and JSCC's additional contribution are consumed on a pro rata basis.
   · Clearing Fund contributions from non-defaulting Clearing Participants are consumed according to the risk amount of each participant.
   · The Clearing Fund contributions from non-defaulting Clearing Participants are capped at a certain level. For further defaults occurring during the 30-day period after a default, such contributions are capped at the required Clearing Fund amount immediately preceding the initial default. (If a subsequent default occurs during this period, it will be extended to 30 days from such default, and so on for any subsequent defaults. This is referred to as the "Capped Period.")
   · The amount of Clearing Fund contribution from non-defaulting Clearing Participants consumed is determined according to the quality of participation in the auction for disposing of the defaulter's positions. The Clearing Fund contributions of Clearing Participants with a lower level of auction participation will be consumed first.
   · If a loss consumes all or part of the Clearing Fund contributions from the non-defaulting Clearing Participants, then contributions shall be replenished following the end of the Capped Period.
4) Additional contribution from non-defaulting Clearing Participants

- If the loss resulting from a Clearing Participant default exceeds the sum of all the preceding financial resources, an additional contribution called a "Special Clearing Charge" is required from the non-defaulting Clearing Participants. The Special Clearing Charge for defaults occurring during a Capped Period is capped at the required amount of Clearing Fund immediately preceding the first default.
- The Special Clearing Charge shall be applied according to quality of participation the auction for disposing of the defaulter's positions. The charge will be first applied to Clearing Participants with lower level of auction participation.

5) Variation Margin Haircutting

- If the loss resulting from a Clearing Participant default exceeds the sum of all the preceding financial resources, all non-defaulting Clearing Participants with positive variation margin (variation margin receiver) from the default date are required to compensate the loss through Variation Margin Haircutting, to a maximum of the relevant variation margin amount.

(3) OTC JGB Loss Compensation

For the OTC JGB Clearing Business, losses resulting from a Clearing Participant default will be covered by loss compensation financial resources in the following order:

1) The defaulting Clearing Participant's margin, and Clearing Fund (including collateral deposited for other Clearing Businesses, if any remains)
   *See Principle 6 (Margin) for margin and Principle 4 (Credit Risk) for Clearing Fund.
2) Contribution from JSCC
   - JSCC contributes funds in the second, third and fifth tiers.
3) Clearing Fund contributions from non-defaulting Clearing Participants and an additional contribution from JSCC
   - The losses allocated to non-defaulting Clearing Participants and JSCC will be pro-rated based on their proportion of the total level of combined resources in this tier.
   - The Clearing Fund contributions of non-defaulting Clearing Participants will be allocated according to losses ("Trust Losses") based on transactions ("Trust Transactions") pertaining to trusts where the Clearing Participant is the trust bank, and other losses ("Non-Trust Losses"). The allotment of Trust Losses will be made based on the ratio of the defaulter's positions made up by Trust Transactions on an underlying transaction basis. The remaining losses after the allocation of Trust Losses shall be the Non-Trust Losses. The Trust Losses and Non-Trust Losses will be allocated to non-defaulting Clearing Participants according to the following method:
     - ► Trust Losses shall be allocated to each relevant non-defaulting Clearing Participant pro-rata, based on their ratio of underlying transactions with the defaulting Clearing Participant.
     - ► Non-Trust Losses shall be allocated to each relevant non-defaulting Clearing Participant pro-rata, based on their Clearing Fund contribution.
   - The amount of loss borne by non-defaulting Clearing Participants' Clearing Fund contributions is capped. Specifically, for defaults during the Capped Period, the cap shall be the required amount of Clearing Fund immediately preceding the first default.
   - The amount of Clearing Fund contribution from non-defaulting Clearing Participants consumed is determined according to the quality of participation in the auction for disposing of the defaulter's positions. The Clearing Fund contributions of Clearing Participants with a lower level of auction participation will be consumed first.
   - If a loss consumes all or part of the Clearing Fund contributions from the non-defaulting Clearing Participants, then contributions shall be replenished following the end of the Capped Period.
4) Additional contribution from non-defaulting Clearing Participants
   - In cases where the losses allocated as Trust Losses and Non-Trust Losses exceed the compensation resources of non-defaulting Clearing Participants in the third tier, JSCC will charge an additional contribution called a "Special Clearing Charge" to the relevant non-

defaulting Clearing Participants, to cover any remaining losses. The "Special Clearing Charge" will be allocated pro-rata to each non-defaulting Clearing Participant, according to the following method:

► The "Special Clearing Charge" for Trust Losses shall be allocated to each relevant non-defaulting Clearing Participant based on their ratio of underlying transactions with the defaulting Clearing Participant.

► The "Special Clearing Charge" for non-Trust Losses shall be allocated to each relevant non-defaulting Clearing Participant based on their required amount of Clearing Fund. In such case, the "Special Clearing Charge" for defaults which occur during the Capped Period shall be capped at the required amount of Clearing Fund immediately preceding the first default.

5) Clearing Fund contributions from non-defaulting Clearing Participants with Trust Transactions and an additional contribution from JSCC

· The losses borne by the Clearing Fund contribution of non-defaulting Clearing Participants with Trust Transactions and the contribution of JSCC will be pro-rated based on their proportion of the total level of combined resources in this tier.

· The losses borne by the Clearing Fund contribution of non-defaulting Clearing Participants with Trust Transactions shall be allocated pro-rata, based on the ratio of each Clearing Participant's remaining Clearing Fund contribution.

· The losses borne by the Clearing Fund contribution of non-defaulting Clearing Participants with Trust Transactions is capped. For defaults during the Capped Period, the cap shall be the required amount of Clearing Fund immediately preceding the first default.

· The amount of Clearing Fund contribution from non-defaulting Clearing Participants with Trust Transactions consumed is determined according to the quality of participation in the auction for disposing of the defaulter's positions. The Clearing Fund contributions of Clearing Participants with a lower level of auction participation will be consumed first.

6) Additional contribution from non-defaulting Clearing Participants with Trust Transactions

· In cases where the losses resulting from the Clearing Participants default exceed the compensation resources up to the fifth tier, JSCC will charge an additional contribution called a "Special Clearing Charge" to non-defaulting Clearing Participants with Trust Transactions.

· The "Special Clearing Charge" shall be allocated to non-defaulting Clearing Participants with Trust Transactions pro-rata, based on their ratio of remaining "Special Clearing Charge." In such cases, the "Special Clearing Charge" for defaults which occur during the Capped Period shall be capped at the required amount of Clearing Fund immediately preceding the first default.

7) Variation Margin Haircutting

· If the loss resulting from a Clearing Participant default exceeds the sum of all the preceding financial resources, all non-defaulting Clearing Participants with positive variation margin (variation margin receiver) from the default date are required to compensate the loss through Variation Margin Haircutting, to a maximum of the relevant variation margin amount.

Key Consideration 2:
An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

JSCC provides for default procedures in its rules and manuals. These rules and manuals specify procedures including determination of default, liquidation of the defaulting Clearing Participant's positions, loss compensation resources, and measures for such procedures.

These procedures also provide for information sharing related to the default, including communications with regulators, notices to Clearing Participants, and public announcement of information. The procedures also specify the role and responsibility of each of JSCC's divisions and involvement of officers.

Additionally for the CDS, IRS, and OTC JGB Clearing Businesses, JSCC has established a framework requiring the participation of non-defaulting Clearing Participants in the liquidation of the defaulting Clearing Participant's positions. Roles and responsibilities of non-defaulting Clearing Participants in default procedures are set out in JSCC's rules.

In order to ensure the effectiveness of default procedures, JSCC conducts fire-drills at least once a year. Based on the results, JSCC will revise rules and manuals as necessary. Some of JSCC's Clearing Businesses require Clearing Participant involvement in default procedures, including fire drills, where JSCC provides the results as feedback.

Key Consideration 3:
An FMI should publicly disclose key aspects of its default rules and procedures.

JSCC's default procedures are provided for in the rules for each of JSCC's Clearing Businesses. These rules are available on JSCC's website.

When a Clearing Participant defaults, JSCC discloses important information pertaining to the default procedures including the halt of clearing for the defaulting Clearing Participant, position liquidation method, handling of customer positions, and results of allocation of any losses arising from the Clearing Participant's default.

Key Consideration 4:
An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

In order to ensure the effectiveness of default procedures, JSCC conducts fire-drills for each Clearing Business at least once a year. All related parties, including Clearing Participants, participate in these fire-drills. Based on the results, JSCC will revise rules and manuals as necessary.

Additionally, JSCC will revise rules and manuals related to default when there have been significant revisions to business operations. The results of fire-drills are reported to the Risk Oversight Committee and the Board of Directors.

Principle 14: Segregation and Portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Key Consideration 1:
A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.

Segregated Management of Customer Positions and Margin

For each Clearing Business, JSCC has adopted differing segregation arrangements for customer protection.

For CDS and IRS transactions, Clearing Participant's proprietary and customer positions/margin are managed on a gross basis. Customer transactions/margin are segregated in individual customer accounts with JSCC at all times, regardless of whether or not the customer is an affiliate of the Clearing Participant. JSCC has established this framework to protect margin related to customer positions from the default or insolvency of a Clearing Participant.

For listed derivatives, customer positions/margin are managed on a gross basis in an omnibus account with JSCC, separate from the Clearing Participant's proprietary account, in consideration of cross-border and other diverse customer types. Individual customer positions/margin are managed by the Clearing Participant. JSCC has the authority to request information related to individual customer positions/margin from the Clearing Participant when necessary, and has a framework in place to protect such margin related to customer positions from the default or insolvency of a Clearing Participant[30]. See the following "Transfer of Positions/Margin" section for further details.

For OTC JGB Clearing Businesses, JSCC does not clear customer transactions. As such there are no customer positions for JSCC to protect.

For listed cash products, JSCC would conduct netting for all of a defaulting Clearing Participant's transactions. As such, JSCC only receives collateral deposits from Clearing Participants, making protection of customer collateral unnecessary. In such cases, the FIEA requires the segregated management of customer securities and cash by Clearing Participants, and protection of such assets is achieved under alternative schemes in Japan. Specifically, the Japan Investor Protection Fund, established according to the FIEA, provides a customer protection scheme for small-scale customers, while JASDEC DVP Clearing Corporation provides DVP Settlement Services for NETDs (non-exchange transaction deliveries) for large-scale (professional) customers. These schemes provide a means of eliminating principal risk.

Transfer of Positions/Margin

JSCC has adopted position transfer arrangements for customer protection, in accordance with the nature of the products it clears.

[30] Rules on Margins, etc. for Futures and Options Contracts Article 26

For clearing of listed derivatives, CDS, and IRS, when a Clearing Participant defaults, customers (customers are limited to affiliates of a Clearing Participant for the CDS Clearing Business) may transfer their own positions and margin to another Clearing Participant without the consent of the defaulting Clearing Participant. In such case, agreement is necessary from the Clearing Participant receiving the transfer of positions/margin.

For listed derivatives, the Clearing Participant receiving the transfer is required to express its consent to the exchange and to follow the exchange's prescribed procedures, after which JSCC conducts the transfer based on the exchange's decision[31]. For CDS and IRS, the customer applies to JSCC via the Clearing Participant receiving the transfer, after which JSCC will confirm that the required amount of margin pertaining to the transferring positions has been deposited by such Clearing Participant. After this confirmation, JSCC transfers the positions and margin of the relevant customer.

Clearing Participants may determine whether they accept a transfer of positions and margin based on an agreement with the transferring customer.

There are no customer positions for transfer in relation to the cash products and OTC JGB Clearing Businesses.

Protection from Fellow Customer Risk

JSCC has adopted arrangements to protect customers from the risk of default by another customer using the same Clearing Participant ("Fellow Customer Risk"), according to the nature of the products it clears.

For clearing of listed derivatives, customer margin is managed in a gross omnibus account, and the right of a customer to request return of its own margin is specified in JSCC's Business Rules[32]. These arrangements eliminate Fellow Customer Risk.

Japanese laws and regulations, JSCC's Business Rules, and the subordinate rules[33] require Clearing Participants to deposit customer margin with JSCC on a gross basis as an agent for their customers. This means that Clearing Participants are unable to offset the positions of each customer with those of other customers when depositing margin.

In order to facilitate the smooth transfer of customer positions/margin or return of customer margin at the time of a Clearing Participant's default, Clearing Participants are obligated by JSCC's rules to promptly provide details regarding customer positions/margin deposited with JSCC in response to JSCC's request (including in times of market stress)[34]. JSCC regularly conducts reviews to ensure Clearing Participants are able to comply with this requirement.

For CDS and IRS transactions, Clearing Participants must deposit the full amount of customer margin with JSCC, where it is individually segregated in accounts for each customer[35],

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[31] OSE Rules on Margin and Transfer of Unsettled Contracts Pertaining to Futures/Options Contract Chapter 3, Section 3
Rules on Margins, etc. for Futures and Option Contracts Articles 28 and 30

[32] Article 24 of the Rules on Margins, etc. for Futures and Option Contracts specifies that each customer has a right to claim refund of margin deposited with JSCC through a Clearing Participant, which is acting as an agent. The amount of margin which each customer has a right to claim refund for is specified as the amount of margin deposited with JSCC less the unfulfilled obligations pertaining to futures/options contracts owed by the customer to the Clearing Participant. This means that the margin each customer deposits with JSCC will not be used to compensate the losses of other customers.

[33] FIEA Article 43-2
Rules on Margins, etc. for Futures and Option Contracts Article 24

[34] Rules on Margins, etc. for Futures and Option Contracts Article 26

[35] CDS Clearing Business Rules Article 59

on a gross basis. JSCC has no rule that allows for the netting of positions recorded in different customer accounts at JSCC.

<u>Legal Basis for Customer Protection</u>

Japanese law stipulates that in the event of a Clearing Participant default, JSCC's rules shall be applied in preference to general Japanese Bankruptcy Act, for the management of outstanding positions, between the defaulting Clearing Participant and JSCC[36].

Therefore, JSCC has the legal powers to liquidate the proprietary positions of a defaulting Clearing Participant and to transfer or liquidate the customer positions of a defaulting Clearing Participant, as stipulated in JSCC's rules.

In the event of the commencement of insolvency proceedings in a foreign jurisdiction against a Clearing Participant, the effect of such insolvency proceedings extend to Japan only upon a Japanese court's order of recognition of such proceedings, based on the provisions of the "Act on Recognition of and Assistance for Foreign Insolvency Proceedings."

Such proceedings in a foreign jurisdiction shall only apply to the properties of a defaulting Clearing Participant upon the issuance of an assistance order by a Japanese court. As this order will be issued if the relevant proceedings should not be a major obstacle for the bankruptcy proceedings in Japan, such proceedings in a foreign jurisdiction are expected to be similar to those of Japan.

Key Consideration 2:
A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.

Please see Key Consideration 1 of this Principle for how customer positions/margin are segregated from those of Clearing Participants.

JSCC requires the deposit of margin based on customer positions for CDS, IRS, and listed derivatives transactions. For CDS and IRS transactions, customers are required to deposit the amount required for initial margin and variation margin. For listed derivatives, they are required to deposit the amount required for initial margin.

JSCC manages customer positions for CDS and IRS transactions in individual accounts, and those for listed derivatives in an omnibus account. Customer margin is required to be deposited via Clearing Participants acting as agents to JSCC on a gross basis.

As in Key Consideration 1 of this Principle, customer margin is protected from Fellow Customer Risk by segregated management as required by the FIEA, JSCC's Business Rules, and subordinate rules.

IRS Clearing Business Rules Article 59

[36] FIEA Article 156-11-2

15.3 Key Consideration 3:
A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.

As in the preceding Key Consideration 1, JSCC allows for the transfer of customer positions/margin. In addition to such procedures being stipulated in JSCC's rules, the process is publicly disclosed when a Clearing Participant defaults. Furthermore, the effectiveness of JSCC's transfer arrangements was demonstrated during the 2008 Lehman Brothers Crisis.

15.4 Key Consideration 4:
A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.

The details of the segregated management and position/margin transfer arrangements for each of JSCC's Clearing Businesses are specified in its Business Rules and related rules (for listed derivatives, this include the exchange's rules). These rules are publicly available on JSCC's and the exchange's websites. Customer margin is protected from the risk of a Clearing Participant default and Fellow Customer Risk (See Key Considerations 2 through 3 of this Principle).

Japanese law stipulates that in the event of a Clearing Participant default, JSCC's rules shall be applied in preference to general Japanese Bankruptcy Act, for the management of outstanding positions, between the defaulting Clearing Participant and JSCC. As such, JSCC views the risk, cost and uncertainty related to segregated management and position/margin transfer arrangements to be extremely limited.

Business Risk Management and Operation Risk Management

Principle 15: General Business Risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key Consideration 1:
An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

General business risks at JSCC are the risks and potential losses that may arise from JSCC's administration and operation and that are not related to the default of a Clearing Participant, nor are separately covered under credit or liquidity risk management framework.

These risks could result in losses from poor execution of business strategy, operational risk (including IT system risk and other operational risk), investment risk, negative cash flows, or unexpected and excessively large operating expenses.

In addition to continuously confirming the execution of business plans and financial conditions, JSCC monitors operational risk (including IT system risk and other operational risk) and investment risk on a monthly basis within the comprehensive risk management framework outlined in Principle 3 (Framework for the Comprehensive Management of Risks).

Key Consideration 2:
An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery of orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

JSCC holds sufficient liquid net assets funded by equity to continue operations and service provision even if it incurs general business losses.

JSCC considers that the above liquid net assets funded by equity must be sufficient to cover a minimum of six months of operating expenses, to cover JSCC's operational risk (including IT system risk and other operational risk) and investment risk.

JSCC monitors the sufficiency of the above liquid net assets on a monthly basis within the comprehensive risk management framework outlined in Principle 3 (Framework for the Comprehensive Management of Risks).

Key Consideration 3:
An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

As mentioned above, JSCC holds sufficient liquid net assets funded by equity to cover operating expenses for 6 months. These liquid assets are managed separately from the resources used when a Clearing Participant defaults. Therefore, even in the event of JSCC's recovery or orderly wind-down, Clearing Participants would have sufficient time to address the transition in their operations.

Furthermore, JSCC has a capital recovery plan which lists the measures to address the situation during a 6-month period in the event of losing revenues due to an unexpected event, including system failure or inappropriate operations.

With regard to recovery and resolution, JSCC will revise its recovery plan, if necessary, based on continuing discussions with regulators, Clearing Participants, and other related parties regarding the international standards for FMI recovery and resolution published by CPMI-IOSCO and the Financial Stability Board ("FSB") in October 2014.

Key Consideration 4:
Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

JSCC's liquid net assets funded by equity are held in the form of Japanese Yen cash (deposited in settlement accounts, or on term deposit), JGBs, and government guaranteed bonds. These are of high quality and highly liquid, even in stressed market conditions.

Cash is deposited in banks which meet JSCC's specific criteria for investment risk. (See Principle 16 (Custody and Investment Risks) for further details.)

Key Consideration 5:
An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

JSCC's capital recovery plan details the actions which JSCC may take if its capital decreases significantly, or if it falls below the level required to cover 6 months of operating expenses. These actions may include:

- Comprehensive review of all expenses, including salaries and compensation;
- Revision of Clearing Fee;
- Revision of JSCC's Business Plan;
- Discussions with stakeholders, such as parent company and other shareholders, regarding an injection of additional capital; and
- Reassessment and restructuring of JSCC's businesses and operations.

JSCC reviews the Capital Recovery Plan at least once a year, and conducts revisions as necessary. When conducting revisions, the details of the revisions are reported to and approved by the Board of Directors as necessary.

Principle 16: Custody and Investment Risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key Consideration 1:
An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

Custodian for JSCC's Assets

The scope of eligible investment products for JSCC's own assets is limited to deposit in settlement account, term deposit, JGBs, and government guaranteed bonds, in accordance with JSCC's "Policies for Fund Management of Own Assets."

The custodians for deposit in settlement account and term deposit are limited to Fund Settlement Banks designated based on criteria specified by JSCC. See Principle 4 (Credit Risk) for further details.

JGBs and government guaranteed bonds are held in the customer accounts of the financial institutions from which JSCC purchased them. Even in the event of the default of such financial institutions, the customer account assets are protected by the "Act on Book-Entry Transfer of Company Bonds, Shares, etc."

Custody for Clearing Participant and Customer Assets

Custody of the collateral of Clearing Participants and their customers is limited to JSCC's direct holding in the account with the CSD or the central bank, or custodians that satisfy the criteria specified in JSCC's "Policies for Designation of Custodians of Posted Collateral."

Management of Custodian Risk

Banks holding JSCC's own assets are those which satisfy the "Policies for Designation of Fund Settlement Banks." Banks holding assets of Clearing Participants and their customers posted as collateral are the CSD, the central bank, or custodians that satisfy the "Policies for Designation of Custodians of Posted Collateral."

JSCC regularly monitors each custodian's compliance with the relevant guidelines.

The relevant guidelines require custodians to be subject to regulatory supervision, have stable business processing capability, stable profitability, and a certain level of financial strength and credit.

Key Consideration 2:
An FMI should have prompt access to its assets and the assets provided by participants, when required.

Access to JSCC's Own Assets

JSCC holds its own assets in accounts under its own name, thus allowing for prompt access to such assets when necessary.

Access to Clearing Participant and Customer Deposited Assets

Collateral deposited by Clearing Participants and customers is held in accounts for the purpose of collateral custody under JSCC's name, thus allowing for JSCC's prompt access to such assets when necessary.

US Treasuries are held in JSCC's account with a custodian located in the U.S., and can be accessed promptly.

Legal Basis

Japanese law provides a sound legal basis for the rights of an account holder to access its assets.

Additionally, the FIEA states that, in the event of a Clearing Participant default, with a prescription in a CCP's Business Rules, a defaulting Clearing Participant's collateral can be applied to the fulfillment of obligations with the CCP in preference to general bankruptcy proceedings, ensuring JSCC's stable access to collateral. (See Principle 1 (Legal Basis) for the handling of cross-border collateral.)

Key Consideration 3:
An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

With a view to eliminating credit risk of custodians where collateral is deposited for Clearing Participants and their customers to the extent possible, custodians are limited to the CSD, the central bank, and custodians based on the "Policies for Designation of Custodians of Posted Collateral." In the "Policies for Designation of Custodians of Posted Collateral," JSCC requires stable profitability and a certain level of financial strength and credit in custodians.

JSCC continuously monitors that custodians satisfy the "Policies for Designation of Custodians of Posted Collateral" by regularly receiving reports on the financial conditions of custodians and confirming the smooth execution of daily settlement operations.

Additionally, JSCC has designated multiple banks as custodians of cash collateral. JSCC monitors the concentration status on a monthly basis.

Key Consideration 4:
An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

JSCC's basic investment policy is stipulated in the Risk Management Policy, which is subject to approval by the Board of Directors and Risk Oversight Committee. The scope of eligible products is restricted to ensure funds are invested only in the highly stable and liquid products. Specifics are specified in the "Policies for Fund Management of Own Assets" and "Policies for Management of Posted Collateral."

JSCC eliminates, to the extent possible, credit risk related to asset management by limiting the scope of eligible products to term deposits, JGBs, government guaranteed bonds, and secured call loans on JGBs.

The investment policy is publicly available on JSCC's website.

Principle 17: Operational Risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key Consideration 1:
An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

JSCC's Risk Management Policy establishes a framework for internal controls to identify, monitor, and manage all operational risks across JSCC's Clearing Businesses. See Principle 3 (Framework for the Comprehensive Management of Risks) for further details.

Identification and Management of Operational Risk

JSCC's Risk Management Policy identifies the following risks and prescribes processes to manage them:

- General Operation Risk: operational mistakes, insufficient human resources, outsourcing risks
- System Risk: computer system failure, system malfunctions, improper usage of computers

In addition to these risks, the Risk Management Policy provides for basic policies for business continuity and related management methods in order to restore and continue operations as soon as possible in the event of a terrorist attack or large scale natural disaster.

JSCC manages operational risk within the comprehensive risk management framework. Specifically, reports are given to the Risk Oversight Committee on a monthly basis, regarding compliance with the Risk Management Policy related to General Operational Risk, System Risk, and the business continuity framework. Additionally, JSCC reports the same information to the Board of Directors on a quarterly basis. At least once a year, JSCC reviews the Risk Management Policy, including a review of the management policy for operational risk. See Principle 3 (Framework for the Comprehensive Management of Risks).

General Operation Risk Management

JSCC's Risk Management Policy stipulates basic policies for managing General Operation Risk. These include:

- Securing sufficient capacity for operations;
- Establishing an internal control framework to prevent operational errors;
- Establishing information security measures; and
- Managing outsourcing arrangements.

Based on the basic policies, JSCC stipulates the details of these within the following rules:

- Rules on Management of Operational Process;
- Information Security Policies;

- Information Security Criteria; and
- Outsourcing Management Rules.

As part of its internal control framework to prevent operational errors, when establishing operational flows, JSCC uses ERM methods to identify potential risks and devises measures to prevent and control them in advance. Through this process, when changing rules or introducing new products, JSCC enables stable and continuous operations which do not rely on specific staff, by accumulating the knowledge among operational staff and outsourced personnel.

Additionally, each of JSCC's Clearing Businesses verify their manuals/checklists at least once a year, and conduct revisions as necessary when introducing new products and changing rules.

In the event operational errors occur for one of the Clearing Businesses, JSCC will investigate the cause and devise measures to prevent reoccurrence which are reported to the Risk Oversight Committee, depending on significance and impact. Through this process, JSCC continuously controls General Operation Risks.

<u>System Risk Management</u>

JSCC's Risk Management Policy stipulates the basic policies for managing System Risk. These include:

- Secure sufficient system processing capacity;
- Conduct system development based on an appropriate plan with sufficient testing;
- Prepare a contingency plan for the occurrence of unexpected events, such as system failures;
- Establish information security measures; and
- Manage outsourcing arrangements.

Based on the basic policies, JSCC stipulates the details of these in the:

- System Risk Management Policy;
- System Risk Management Rules;
- Information Security Policies;
- Information Security Criteria; and
- Outsourcing Management Rules.

JSCC outsources primary system processes for its Clearing Businesses. JSCC evaluates the associated risks according to the "Outsourcing Management Rules" and "Outsourcing Selection Criteria."

In the event a system failure occurs, JSCC will investigate the cause and devise measures to prevent reoccurrence which are to be reported to the Risk Management Committee, depending on significance and impact. In addition to this, JSCC reports system capacity and processing capabilities, system development status, and outsourcing management status to the Risk Oversight Committee. Through this process, JSCC continuously controls System Risk.

<u>Potential Single Points of Failure</u>

Within the system development process for its Clearing Businesses, JSCC identifies single points of failure in advance, and incorporates redundant configurations. Additionally, JSCC verifies whether failovers occur as expected in system testing. As such, JSCC does not view there to be any potential single points of failure in its IT systems operating Clearing Businesses.

Business Continuity Plan

JSCC's Risk Management Policy stipulates the basic policies and management methods related to the business continuity framework. These include:

- Preparing redundancy within IT systems;
- Securing a back-up data center and back-up office;
- Preparing a Business Continuity Plan; and
- Aiming to restore business operations within 2 hours.

Based on the basic policies, JSCC stipulates the details of these in the "BCP Basic Plan." Furthermore the two hour target for restoring business operations is in line with the business continuity target set by the Securities Market BCP Forum, which is a conference for the Japanese securities industry.

In the event a risk occurs which threatens JSCC's business continuity, JSCC will take measures based on the "BCP Basic Plan" to prevent and control factors which harm business continuity.

JSCC has equipped its systems with redundancy and established a back-up data center and back-up office, the effectiveness of which it regularly verifies. The specific verification framework includes synchronization between primary and back-up centers, regular data center switching drills, maintenance of back-up office equipment and facilities, executing operations from the back-up office, updating manuals based on the "BCP Basic Plan" and staff BCP education.

JSCC reports the progress of the above to the Risk Oversight Committee. Through this process, JSCC confirms the effectiveness of its BCP.

Framework to Secure Necessary Personnel and Personnel Compliance

JSCC continuously strives to secure human resources with the ability to execute its Clearing Businesses and perform risk management.

Specifically, to reduce the risk of losing key personnel, JSCC employs individuals with the necessary operational and risk management knowledge for each Clearing Business, and cultivates employee knowledge and capabilities via education and training.

JSCC's Risk Management Policy stipulates the basic policies for managing compliance risk. These include establishing a compliance framework based on a compliance program including a code of conduct, and keeping staff informed of the program's details. Based on these basic policies, JSCC stipulates the "JSCC Employee Code of Conduct," "Compliance Program," and "Rules of Internal Information Management," for which it continuously conducts employee education and training. JSCC reports risk management conditions related to compliance to the Risk Oversight Committee as necessary. Through this process, JSCC prevents misconduct.

Key Consideration 2:
An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

JSCC's Board of Directors has final responsibility in relation to JSCC's operational risk management. Within the comprehensive risk management framework, JSCC manages operational risk. Revisions of the Risk Management Policy, which provides for basic risk management policies, are made via resolution by the Board of Directors. JSCC validates the Risk Management Policy at least once a year. The process and the results of this validation are reported to the Board of Directors. See Principle 2 (Governance) for more details on the roles of JSCC senior management and the Board of Directors.

JSCC's Board of Directors receives reports regarding compliance with the Risk Management Policy for operational risk on a quarterly basis. JSCC provides the Operational Procedures to realize smooth clearing operations with Clearing Participants. Additionally, JSCC provides System Connection Specifications to realize stable system operations with Clearing Participants. These Operational Procedures and System Specifications clarify operational details and deadlines to avoid misunderstanding with Clearing Participants, and facilitate operational risk management. When changing operational procedures and implementing new products, these documents are revised as necessary and system testing is performed with Clearing Participants in advance, thus allowing for verification and evaluation.

Furthermore, for replacement of critical systems, or similar large development projects, JSCC will seek evaluation by external experts, when necessary.

Key Consideration 3:
An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

JSCC's Risk Management Policies clearly define their objective to "establish robust and comprehensive risk management frameworks, ensure steady provision of the Clearing Businesses, and prevent a loss of JSCC's capital."

To achieve this objective, JSCC regularly confirms that all critical systems have sufficient processing capacity for current levels of utilization and forecasted future requirements. Capacity targets and actual performance data are presented in the monthly Risk Oversight Committee, and the sufficiency of system capacity and processing capabilities is confirmed.

Key Consideration 4:
An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

JSCC has put in place the following measures to ensure its systems have sufficient processing capabilities:

- All critical systems are required to have sufficient processing capacity to handle a steep increase in processing volume; and
- A warning threshold is implemented into monitoring procedures, which triggers if utilization exceeds 50% of capacity. This is to ensure that measures can be implemented to increase the system capacity well in advance of the required time frame.

Key Consideration 5:
An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

<u>Physical Security</u>

The primary data center which houses JSCC's clearing system satisfies all the requirements of "The Center for Financial Industry Information Systems: Security Guidelines on Computer Systems for Banking and Related Financial Institutions," which is the standard for Japanese financial market safety, and has received ISMS certification.

For continuous certification, ISMS conducts ongoing review and examination for certification renewal, once a year and once each three years, respectively. Risk mitigation measures are taken if necessary as a result of such review.

In addition, JSCC has established the "Information Security Policies" and "Information Security Criteria" as internal rules, under which measures against physical vulnerability and threats have been implemented.

Information Security

JSCC's "Information Security Policies" provide basic policies and a management framework for appropriately handling information assets. In the "Information Security Criteria," which is based on the "Information Security Policies," JSCC stipulates matters to be handled from the viewpoint of information security in relation to its information and information systems. These include management of connections to external networks, anti-virus measures, and the establishment of system access procedures.

When establishing the "Information Security Policies" and "Information Security Criteria," JSCC consulted with experts on industry standards.

The Division responsible for JSCC's information security confirms compliance conditions with the "Information Security Policies" and "Information Security Criteria" on an annual basis. If it is determined that the current criteria are not appropriate, as a result of this check, due to a change in industry standards, advancement of technology, or other reasons, the criteria shall be revised and updated.

Additionally, JSCC has confirmed that the outsourcee for the clearing system has stipulated technology security objectives for JSCC's clearing system, and satisfies the certification criteria of ISO27001/ISMS.

Key Consideration 6:
An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.

Objectives of BCP Basic Plan

The purpose of JSCC's "BCP Basic Plan" is to restore and resume JSCC's business operations, following a terrorist attack or natural disaster.

Design of BCP Basic Plan

JSCC's "BCP Basic Plan" stipulates that even if an event which causes entire or partial operation interruption occurs (risk event), measures shall be taken to enable prompt recovery and resumption of material business operations, and the detailed measures thereof. These include employment of secure system redundancy, establishment of back-up data centers, and back-up offices.

JSCC's "BCP Basic Plan" is designed to enable full recovery of its business operations within 2 hours of the occurrence of a terrorist attack, natural disaster, or other risk events. It also sets forth communication flow with internal and external critical stakeholders and regulators.

Secondary Site

JSCC maintains a secondary site in addition to its primary site. Clearing systems are located at both sites and are equipped with the same level of processing capacity.

The secondary site is maintained as an active site, which allows for swift switchover from the primary site. Full-time system operations personnel are assigned to the secondary site.

JSCC's primary and secondary sites are geographically separated with different power and communications infrastructure. JSCC sees an extremely low probability of both sites simultaneously being affected by a disaster. A full detailed analysis of the risk profile was conducted at the time the secondary site was selected.

Data synchronization between JSCC's primary and secondary centers runs on a semi-real-time basis (1-minute intervals). Therefore JSCC considers that the possibility of data loss is extremely low.

In the unlikely event of data loss in the clearing system, JSCC would be able to recover lost data by employing processes such as data acquisition from, and reconciliation with, other market operators and financial institutions.

Review and Testing

In order to verify the adequacy and effectiveness of JSCC's "BCP Basic Plan," JSCC conducts BCP fire-drills at least once a year. These fire-drills include data synchronization to the back-up data center, regular data center switchover tests, back-up office maintenance, running operations from the back-up center, updating manuals based on the "BCP Basic Plan," and staff BCP education.

JSCC participates, alongside other FMIs, such as the BOJ and JASDEC, in an industry-wide BCP exercise organized by the Japan Securities Dealers Association and Japanese Bankers Association, or BCP exercise organized by another FMI, at least once per year.

These exercises assume a wide-area disaster and involve a broad scope of institutions.

Based on the results and opinions/recommendations arising from these exercises, JSCC will amend the "BCP Basic Plan" as necessary.

JSCC makes reports regarding the matters above to the Risk Oversight Committee. Through this process, JSCC continually confirms the effectiveness of its business continuity framework.

Key Consideration 7:
An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Risks to JSCC's Operations from outside entities

Within JSCC's "BCP Basic Plan" and "Guidelines for Handling upon System Failure," JSCC provides contingency plans for cases of a system failure on the side of other FMIs, market operators, or Clearing Participants with which JSCC has connection. The effectiveness of these plans is confirmed through the BCP exercise process detailed above.

JSCC identifies risks related to system development and operations on the side of outsourcees and regularly confirms the status of response measures, in addition to confirming the satisfaction of reliability and contingency criteria by regularly holding switchover drills with such outsourcees.

Risks that JSCC may pose to other FMI

Should JSCC experience an operational risk event, JSCC has formulated arrangements with other FMIs to deal with such situations in the “BCP Basic Plan.” This ensures that an operational risk event at JSCC does not have a systemic impact on other FMI.

Principle 18: Access and Participation Requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Key Consideration 1:
An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

JSCC has established criteria for the acquisition and maintenance of Clearing Qualification for each of JSCC's Clearing Businesses[37]. Each Clearing Business's criteria are rationally aligned with the risks and nature of that business, do not impose excessive restrictions on entities eligibility for participation, and ensures open access to those applying for Clearing Qualification. JSCC has established no limitations on the attributes of Clearing Participant customers and does not charge excessive participation fees.

Based on the assumption that an applicant is an entity registered with the JFSA, participation criteria broadly cover the following requirements:

- Management Structure;
- Financial Requirements; and
- Business Structure.

The participation criteria are stipulated in the Business Rules of each Clearing Business and have been approved by the JFSA. This approval is based on the FIEA's prohibition of discriminatory treatment, and affirms the open access which the criteria provide[38]. The participation criteria are publicly available.

Key Consideration 2:
An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavor to set requirements that have the least restrictive impact on access that circumstances permit.

JSCC has established participation criteria that are rationally aligned with the relevant risks, the nature of each Clearing Business, and the attributes of Clearing Participants. JSCC considers the criteria to feature minimum and sufficient requirements for maintaining the stability and efficiency of its Clearing Businesses.

Participation in the Listed Products Clearing Business or OTC JGB Clearing Business is divided into Principal and Agency. The participation criteria for Agency Clearing Participants, which are able to provide clearing access to other entities, are stricter than those for Principal Clearing Participants. When Clearing Participants for the IRS Clearing Business provide clearing services to non-affiliate customers, JSCC requires the maintenance of a structure for properly managing customer risk and preventing improper infringement of customer interests. Entities eligible to be JSCC Clearing Participants include Financial Instrument Business Operators, banks, or insurance companies. JSCC has established eligibility criteria based on

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[37] Listed Products Clearing Business Rules Chapter 2
OTC JGB Clearing Business Rules Chapter 2
CDS Clearing Business Rules Chapter 2
IRS Clearing Business Rules Chapter 2
[38] FIEA Article 156-9

indicators of financial soundness appropriate for these entities.

The participation criteria are publicly available, and can be accessed by all current and potential Clearing Participants. The participation criteria are amended as needed according to changes in the regulatory environment and general market conditions.

Key Consideration 3:
An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

Monitoring Participant Compliance

JSCC continuously monitors Clearing Participants for ongoing compliance with the participation criteria for each of JSCC's Clearing Businesses.

(1) Monitoring Compliance with Financial Criteria

JSCC receives reports on Clearing Participant finances monthly, quarterly, semi-annually, and annually to monitor the soundness of Clearing Participant finances. The reports Clearing Participants submit to JSCC are the same as those submitted to regulators. Additionally, JSCC monitors daily news for information on Clearing Participant finances, as well as credit ratings, market information (stock prices, CDS/bond spreads).

(2) Monitoring Compliance with Management/Business Structure Criteria

JSCC requires Clearing Participants to submit a report when there is a change in executive officer or major shareholder in order to monitor the soundness of their management. JSCC also monitors daily news for information on Clearing Participant management, and business structure, such as office transfers or reductions in operations. JSCC also conducts monitoring of daily clearing operations, including payments, securities deliveries, and whether collateral is deposited on time.

Measures against Clearing Participants

When JSCC determines that a Clearing Participant does not satisfy participation criteria or has violated JSCC rules, JSCC will take disciplinary measures against the Clearing Participant according to the methods prescribed in the Business Rules of each Clearing Business[39].

Before determining the measures, JSCC will consult the Disciplinary Measures Assessment Committee regarding the appropriateness of the measures. The Disciplinary Measures Assessment Committee is composed of multiple experts, including lawyers and academics, and is independent from JSCC and Clearing Participants.

These measures include issuing instructions on business structure or position improvement, the suspension of all or part of its clearing services and revocation of Clearing Qualification for the relevant Clearing Participant. Prior to these measures, JSCC may request the submission of

[39] Listed Products Clearing Business Rules Chapter 2, Section 5
CDS Clearing Business Rules Chapter 2, Section 5
OTC JGB Clearing Business Rules Chapter 2, Section 5
IRS Clearing Business Rules Chapter 2, Section 5

materials or conduct an on-site examination to gain a better understanding of the Clearing Participant’s finances, management, and business structure, if JSCC deems such a request necessary to ensure the stable operations of the Clearing Business. In order to promote improvement at the Clearing Participant, JSCC may recommend appropriate measures based on its rules.

In cases where a Clearing Participant withdraws from the Clearing Business due to revocation of qualifications, such Clearing Participant is required to dissolve its positions and fulfill its obligations before its qualifications are revoked. As such, JSCC ensures the withdrawal of a Clearing Participant is conducted in an orderly manner.

If JSCC suspends clearing for a Clearing Participant or revokes a Clearing Participant’s Clearing Qualification, it will notify all relevant stakeholders, including other Clearing Participants and market operators, and make a public announcement.

Principle 19: Tiered Participation Requirements

An FMI should be reviewed in the context of Principle 14 on segregation and portability, Principle 18 on access and participation requirements, and other principles, as appropriate.

Key Consideration 1:
An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Clearing Participants are direct participants of JSCC with access to JSCC's Clearing Businesses.

Entities that are not Clearing Participants may access JSCC's clearing services through a Clearing Participant, as a customer of such Clearing Participant, in accordance with a contract with such Clearing Participant ("Indirect Participant"). The scope of Indirect Participants may vary by Clearing Business, and includes brokers, banks, asset managers, pension funds, hedge funds, non-financial corporate entities, and individuals.

For each of JSCC's Clearing Businesses, the following Indirect Participants are accepted:

- Listed Products Clearing Business: Customers of Clearing Participants, Trading Participants of Exchanges (non-JSCC Clearing Participants) and customers of Trading Participants[40]
- CDS Clearing Business: Clearing Participant affiliates
- IRS Clearing Business: Clearing Participant affiliates and non-affiliated customers
- OTC JGB Clearing Business: No indirect participation

(1) Rules/Agreements for Gathering Indirect Participant Information

JSCC's Business Rules, subordinate rules, and Clearing Brokerage Agreements authorize it to gather information on the nature of Indirect Participants via Clearing Participants. The rules for JSCC's Listed Product Clearing Business state that, when JSCC requests, a Clearing Participant must provide information relating to the position data of Indirect Participants, allowing JSCC to maintain an understanding of each Indirect Participant's positions[41].

The Business Rules and subordinate rules for JSCC's CDS and IRS Clearing Businesses provide that separate accounts should be maintained for each Indirect Participant at JSCC. This allows JSCC to maintain an understanding of each Indirect Participant's positions[42].

(2) Risks to JSCC arising from Tiered Participation

Please see Key Consideration 3 of this Principle for the risks to JSCC arising from tiered participation arrangements and the management of such.

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[40] Customers of the Listed Products Clearing Business include both affiliates of Clearing Participants and non-affiliates.
[41] Listed Products Clearing Business Article 40
Contract for Commissioning Clearance Article 16
Rules on Margins, etc. for Futures and Options Contracts Article 26
[42] CDS Clearing Business Rules Article 59
IRS Clearing Business Rules Article 59

Key Consideration 2:
An FMI should identify material dependencies between direct and Indirect Participants that might affect the FMI.

By monitoring the position risk of Clearing Participants, JSCC is able to identify dependencies between Clearing Participants and Indirect Participants. Specifically, in order to avoid a customer's default having a significant impact on such customer's Clearing Participant, JSCC will, as necessary, request information from a Clearing Participant regarding the positions of individual Indirect Participants and their risk management, and confirm whether there are any issues in comparison to the financial strength of such Clearing Participant.

Key Consideration 3:
An FMI should identify Indirect Participants responsible for a significant proportion of transactions processed by the FMI and Indirect Participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.

Clearing Participants are responsible for their related Indirect Participants' financial obligations to JSCC, even when such Indirect Participants do not fulfill such obligations. As such, JSCC monitors whether Clearing Participants have excessive exposure to Indirect Participants in comparison to their financial strength at least once a day for all products, and more frequently for certain products.

Additionally, under the Business Rules and subordinate rules, JSCC may acquire additional information from Clearing Participants on each Indirect Participant as necessary, allowing it to maintain an understanding of detailed position information and risk management of Indirect Participants, and identify Indirect Participants which may have a significant impact on Clearing Participant risk management. Through these measures JSCC conducts its risk management.

Based on this monitoring, JSCC may take additional risk reduction measures, such as requiring additional collateral or a reduction of positions.

Key Consideration 4:
An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

When determining to take the risk reduction measures mentioned in Key Consideration 3 of this Principle, JSCC consults with the Disciplinary Measures Assessment Committee to ensure the objective propriety of such measures. The Disciplinary Measures Assessment Committee is composed of 5 members, including lawyers, academics, and other experts, and maintains independence from JSCC and Clearing Participants.

Principle 20: FMI Links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Key Consideration 1:
Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

JSCC conducts an assessment of potential risks prior to establishing a proposed link arrangement, including those related to trading and clearing. In this assessment, JSCC examines the potential risks relating to legal, credit, liquidity, regulatory, and operational areas that may have an impact on JSCC.

Currently, JSCC only has FMI links with the following entities:

- JASDEC, as custodian of securities settlement and collateral in municipal and corporate bonds, listed stocks, ETF, REIT, CB and non-exchange traded investment trusts for the Listed Product Clearing Business.
- BOJ, as a Fund Settlement Bank for money settlement and a custodian of JGB collateral.
- DTCC Data Repository (U.S.) LLC, as a trade repository of trade information under CFTC Regulations for the IRS Clearing Business.

These links are established by JSCC's participation in the systems of each FMI. Each FMI is subject to the PFMI, and therefore any potential sources of risk (such as legal, credit, liquidity, custody, and operational risk) are expected to be properly managed.

Key Consideration 2:
A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

All links currently implemented by JSCC are with Japanese FMIs, except for DTCC Data Repository (U.S.) LLC, based on Japanese law.

DTCC Data Repository (U.S.) LLC is registered as a Swap Data Repository ("SDR") under CFTC Regulations, and thus is confirmed to have a well-founded legal basis providing appropriate protection to FMIs.

Key Consideration 3:
Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.

This consideration is not applicable as JSCC is not a CSD.

Key Consideration 4:
Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

This consideration is not applicable as JSCC is not a CSD.

Key Consideration 5:
An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.

This consideration is not applicable as JSCC is not a CSD.

Key Consideration 6:
An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

This consideration is not applicable as JSCC is not a CSD.

Key Consideration 7:
Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risk of the collective link arrangement.

This consideration is not applicable as JSCC has not established a link with another CCP.

Key Consideration 8:
Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.

This consideration is not applicable as JSCC has not established a link with another CCP.

Key Consideration 9:
A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.

This consideration is not applicable as JSCC is not a TR.

Efficiency

<u>Principle 21: Efficiency and Effectiveness</u>

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Key Consideration 1:
An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products clearing, settled, order recorded; and use of technology and procedures.

JSCC has formal processes involving Clearing Participants to ensure its development of products and services is in-line with market needs. JSCC has established advisory committees for each Clearing Business for this purpose, specifically the User Committee (Listed Products), CDS Risk Management Committee, IRS Management Committee, and OTC JGB Management Committee. These committees are composed of major users, and are consulted with regarding major clearing/settlement frameworks, operational processing frameworks, and product development, before such matters are decided upon by the Board of Directors.

For the CDS, IRS, and OTC JGB Clearing Businesses, in order to accurately reflect Clearing Participant opinions, JSCC has established subordinate committees for those mentioned above. These include committees for risk management, operational, and legal areas.

Additionally, JSCC receives feedback related to rules/procedure revisions of clearing/settlement frameworks, operational processing frameworks, and product development via public comments and informal discussions with Clearing Participants and customers. These arrangements aim to ensure a broad range of opinions are considered in the process of establishing a properly functioning market between a diverse range of Clearing Participants and customers.

Key Consideration 2:
An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum services levels, risk-management expectations, and business priorities.

JSCC provides in its Corporate Philosophy:

> *"JSCC, with a solid risk-management framework, aims to enhance the competitiveness of Japanese financial and capital markets by improving the efficiency, serviceability and safety of financial market post-trade processing infrastructure."*

JSCC has defined 3 basic policies to achieve its Corporate Philosophy, namely "reinforcement of business management foundation," "further expansion of clearing services," and "enhancement of IT systems."[43]

In order to achieve its objectives, JSCC establishes a medium-term management plan to realize specific policies based on the surrounding environment, and reports the progress on a quarterly-basis to senior management and on at least an annual-basis to the Board of Directors,

[43] JSCC http://www.jscc.co.jp/en/company/philosophy.html

thereby ensuring it is measurable and attainable.

JSCC has established a comprehensive risk management framework in order to achieve the "with solid risk-management framework" in its Corporate Philosophy, under which JSCC identifies, monitors, and manages the risks it faces.

Within the comprehensive risk management, for system risk management, JSCC has set targets for system processing capacity and time required for system processing. JSCC also manages the level of financial resources it should hold.

Key Consideration 3:
An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

As above, JSCC has established a framework for confirming the progress of the medium-term management plan and a framework for comprehensive risk management. Within the regular review of these frameworks, JSCC conducts reviews of measures which have been implemented from the perspective of systems, operations, and costs.

Principle 22: Communications Procedures and Standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key Consideration 1:
An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

JSCC uses widely accepted communication procedures and standards for communications with Clearing Participants, Fund Settlement Banks, and linked FMIs. JSCC uses the following procedures and standards for external communications.

Procedures/Standards for Communication with Clearing Participants

(1) Listed Products Clearing Business
JSCC provides dedicated terminals to Clearing Participants for everyday clearing operations. Additionally, Clearing Participants are able to use an API provided by JSCC to directly access JSCC's clearing system. JSCC also provides connection specifications for the JSCC clearing system to Clearing Participants that request them.

(2) CDS/IRS Clearing Businesses
JSCC provides trade data and other services via various portal sites, FTP (File Transfer Protocol), MQ messaging, and FpML (Financial Products Markup Language) format. For CDS, JSCC processes applications for clearing from Clearing Participants via the Trade Information Warehouse provided by The Warehouse Trust Company LLC. For IRS, JSCC processes applications for clearing from Clearing Participants through MarkitWire provided by MarkitSERV.

OTC JGB Clearing Business
Communications between JSCC and Clearing Participants are conducted over TCP/IP (Transmission Control Protocol/Internet Protocol) using the Pre-Settlement Matching System provided by JASDEC, with processing based on ISO20022 messaging.

Procedures/Standards for Communication with Fund Settlement Banks

JSCC uses BOJ-NET for its JPY-settlement at the central bank.

Additionally, for the transfer of Japanese Yen collateral for the Listed Products Clearing Business through commercial banks, JSCC processes the transfer of funds through the firm banking system based on Japanese Bankers Association procedures.

Procedures/Standards for Communication with CSD

Connection with BOJ (CSD for JGBs)
For book-entry transfer/DVP settlement of JGBs at BOJ, JSCC conducts operational procedures based on system connection specifications using TCP/IP, provided by BOJ.

Connection with JASDEC (CSD for stocks)
For book-entry transfer/DVP settlement of stocks at JASDEC, JSCC conducts operational procedures via access to JASDEC's network system, using ISO20022 XML messaging as the connection specifications.

Transparency

<u>Principle 23: Disclosure of Rules, Key Procedures, and Market Data</u>

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be public disclosed.

Key Consideration 1:
An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

<u>Business Rules</u>

The Business Rules and subordinate rules for each of JSCC's Clearing Businesses are fully disclosed on JSCC's website, in Japanese and English. The Business Rules comprehensively provide details under normal conditions of the responsibilities of Clearing Participants, Clearing Participant default procedures, responses to system failures, and emergency measures during natural disasters. Additionally, JSCC has established contingency plans which specify responses, procedures, and arrangements for each product during times of emergency. All of these are disclosed on JSCC's website.

In cases where JSCC must add a revision to the Business Rules or subordinate rules, JSCC consults the advisory committee of the relevant Clearing Business regarding the details of the revision in advance, excluding insignificant revisions. See Principle 2 (Governance) for details on the advisory committees.

In cases where a revision to the Business Rules or subordinate rules would impact investors, JSCC compiles an outline of the proposed revision and submits it for public comment. This process allows Clearing Participants and investors to understand the aim of the revision and its impact.

<u>General Information</u>

JSCC's website is publicly accessible and provides the following information related to clearing and settlement:

- JSCC's background, company overview, and corporate philosophy;
- Clearing Participant criteria and list of Clearing Participants;
- Clearing business framework;
- Settlement guarantee framework;
- Details on eligible collateral;
- Margin framework and loss compensation framework;
- Mark-to-market methods;
- Statistics; and
- Clearing fees.

Key Consideration 2:
An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participant's rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

Descriptions of JSCC's Clearing Business framework, including the claims and obligations between JSCC and Clearing Participants and operational procedures, are stipulated in the Business Rules and subordinate rules for each Clearing Business. JSCC's Business Rules and subordinate rules are publicly available via its website.

The details which compose the core of JSCC's Clearing Business framework are stipulated in the Business Rules and subordinate rules. When revising these rules, as in Key Consideration 1 of this Principle, JSCC provides the details of the revisions to interested parties via consultation with Clearing Business advisory committees and a public comment process.

Additionally, the Business Rules and subordinate rules stipulate the scope of matters that JSCC is able to determine at its discretion in the course of its Clearing Business operations.

JSCC provides a wide range of information to Clearing Participants, to enable Clearing Participants to evaluate the risks and costs pertaining to participation in JSCC, including the following:

- Eligible products for clearing and details of the requirements for clearing;
- Eligible collateral and applicable haircuts;
- Management of Clearing Participant default and measures to be taken for it, including available financial resources; and
- Loss Compensation Scheme (Risk Waterfall) for each Clearing Business.

This information is included in JSCC's Business Rules and subordinate rules, which are public documents. JSCC also provides the "Operational Procedures," which stipulate details for the operations of each Clearing Business, to Clearing Participants.

Key Consideration 3:
An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

JSCC holds explanatory sessions for new Clearing Participants, to facilitate their understanding of the clearing framework and procedures before granting Clearing Qualifications. JSCC makes efforts to familiarize Clearing Participants with JSCC's rules and procedures in explanatory sessions on Clearing Businesses when required, such as when revising rules or introducing new products.

For the CDS, IRS, and OTC JGB Clearing Businesses, JSCC holds regular default management fire-drills to familiarize Clearing Participants with the Clearing Participant default management procedures, which would apply to non-defaulting Clearing Participants.

Clearing Participants' ongoing compliance with JSCC's rules and procedures demonstrates their understanding, and confirms that the rules and procedures are clear and comprehensive.

JSCC's Business Rules provide for issuing improvement orders when JSCC recognizes a deficiency in a Clearing Participant's business execution structure. Through this, JSCC is capable of issuing corrective measures to the Clearing Participant demonstrating a deficiency in understanding of JSCC's rules and procedures and the risks pertaining to participation.

Key Consideration 4:
An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.

JSCC publicly discloses the clearing fee structure on its website. Rules relating to fees, including details of fee rates for each product and the details of discounts, are set forth in the rules for each of JSCC's Clearing Businesses.

In cases of revisions to the clearing fee structure, JSCC will consult with advisory committees, such as the User Committee (Listed Products), the CDS Risk Management Committee, the IRS Management Committee, and the OTC JGB Management Committee, which are composed of major users, and conduct consultation procedures, including public disclosure of an outline of the revisions and publication of details of rule revisions on JSCC's website.

JSCC provides information on its system design, technology, and communication specifications to existing Clearing Participants and firms seeking to become Clearing Participants, thereby enabling such parties to estimate the costs related to participation.

Key Consideration 5:
An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

This document is JSCC's disclosure pursuant to the CPSS-IOSCO "Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology." JSCC will update this disclosure document if there are any significant changes, or at a minimum every two years.

JSCC discloses statistical information for each of its Clearing Businesses in English and Japanese on its website. This information includes the following:

- Cleared volume and value for Listed Products;
- Cleared value and trade counts for CDS;
- Cleared value and trade counts for IRS; and
- Cleared volume, value and trade counts for OTC JGB.

JSCC discloses a wide range of other information in English and Japanese on its website. This information includes the following:

- Eligible products for Clearing;
- Clearing Participant qualification criteria;
- Existing Clearing Participants;
- Information about JSCC's clearing and settlement operations; and
- Outline of overall risk management framework (including margin framework).

Principle 24: Disclosure of Market Data by Trade Repositories

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Because JSCC does not provide functions as a TR, this principle does not apply.

V. List of Publicly Available Information

JSCC Business Rules

http://www.jscc.co.jp/en/rule/rule.html

JSCC Annual Report

http://www.jscc.co.jp/en/company/annual.html

JSCC Management and Financial Information

http://www.jscc.co.jp/en/company/management-financial-information.html

JSCC Company Profile

http://www.jscc.co.jp/en/company/profile.html

JSCC Clearing Qualification Criteria and List of Clearing Participants

http://www.jscc.co.jp/en/participant.html

JSCC Statistics

-Listed Products

http://www.jscc.co.jp/en/listed_products

-Japanese Government Bonds

http://www.jscc.co.jp/en/jgbcc

-Credit Default Swaps

http://www.jscc.co.jp/en/credit_default_swap

-Interest Rate Swaps

http://www.jscc.co.jp/en/interest_rate_swap

JSCC Clearing Fees

http://www.jscc.co.jp/en/data/clearingfee.html

JSCC Clearing & Settlement

http://www.jscc.co.jp/en/cash.html

Japan Exchange Group (JPX)
Tokyo Stock Exchange, Inc. (TSE)
Osaka Exchange, Inc. (OSE)

http://www.jpx.co.jp/en/index.html

Financial Instruments and Exchange Act

http://www.fsa.go.jp/common/law/fie01.pdf

Cabinet Office Ordinance on Financial Instruments Clearing Organization, etc.

http://www.japaneselawtranslation.go.jp/law/detail/?id=2379&vm=04&re=02

Comprehensive Guidelines for Supervision of Financial Market Infrastructures

http://www.fsa.go.jp/en/news/2014/20140327-1/01.pdf

Companies Act

http://www.japaneselawtranslation.go.jp/law/detail/?id=2035&vm=04&re=02

Civil Code

http://www.moj.go.jp/content/000056024.pdf

Act of Recognition of and Assistance for Foreign Insolvency Proceedings

http://www.japaneselawtranslation.go.jp/law/detail/?ft=1&re=01&dn=1&x=0&y=0&co=01&ia=03&ky=%E5%A4%96%E5%9B%BD%E5%80%92%E7%94%A3%E5%87%A6%E7%90%86%E6%89%8B%E7%B6%9A%E3%81%AE%E6%89%BF%E8%AA%8D%E6%8F%B4%E5%8A%A9%E3%81%AB%E9%96%A2%E3%81%99%E3%82%8B%E6%B3%95%E5%BE%8B&page=2

Deposit Insurance Act

http://www.japaneselawtranslation.go.jp/law/detail/?id=2366&vm=&re=

Trust Act

http://www.japaneselawtranslation.go.jp/law/detail/?id=1936&vm=04&re=02

Banking Act

http://www.japaneselawtranslation.go.jp/law/detail/?ft=1&re=01&dn=1&x=0&y=0&co=01&ia=03&ky=%E4%BF%A1%E8%A8%97%E6%B3%95&page=5

Act on Book-Entry Transfer of Company Bonds, Shares, etc. (Japanese only)

http://law.e-gov.go.jp/htmldata/H13/H13HO075.html

Bank of Japan

http://www.boj.or.jp/en/index.htm/

Bank of Japan Act

http://www.japaneselawtranslation.go.jp/law/detail/?id=92&vm=02&re=01

The Bank of Japan Policy on Oversight of Financial Market Infrastructures

http://www.boj.or.jp/en/announcements/release_2013/data/rel130312a.pdf

Rules on Current Deposit Account (Japanese only)

https://www.boj.or.jp/paym/torihiki/touyo08.htm/

Japan Securities Depository Center, Inc.

https://www.jasdec.com/en/

Japan Securities Dealers Association

http://www.jsda.or.jp/en/

The Center for Financial Industry Information Systems (FISC)

https://www.fisc.or.jp/english/

Principles for Financial Market Infrastructures

http://www.iosco.org/library/pubdocs/pdf/IOSCOPD377.pdf

Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology

http://www.iosco.org/library/pubdocs/pdf/IOSCOPD396.pdf

Implementation monitoring of PFMIs: Level 2 assessment report for central counterparties and trade repositories - Japan

http://www.bis.org/cpmi/publ/d127.htm

European Market Infrastructure Regulation (EMIR)

http://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=9hKlTthNJ5HW5KnGDSpbvrKNyRWRtyFKpwkTXvKHKG3LvCSFxph3!688603561?uri=CELEX:32012R0648

Commodity Exchange Act

https://www.law.cornell.edu/uscode/text/7/chapter-1

CFTC Regulation

http://www.ecfr.gov/cgi-bin/text-idx?sid=7c421620fdc60314ab8fd9de494af74e&c=ecfr&tpl=/ecfrbrowse/Title17/17tab_02.tpl

VI. Glossary

API	Application Programming Interface
BCP	Business Continuity Plan
BOJ	Bank of Japan
CB	Convertible Bonds
CCO	Chief Compliance Officer
CCP	Central Counterparty
CDS	Credit Default Swap
CFTC	The U.S. Commodity Futures Trading Commission
CPSS	The Committee on Payment and Settlement Systems
CRO	Chief Risk Officer
CSD	Central Securities Depositary
DVP	Delivery Versus Payment
EMIR	European Market Infrastructure Regulation
ESMA	European Securities Market Authority
ETF	Exchange Traded Fund
FIEA	Financial Instruments and Exchange Act
FISC	The Center for Financial Industry Information Systems
FMI	Financial Markets Infrastructure
PFMI	Principles for Financial Market Infrastructure
FOS	Fund Only Settlement
IOSCO	The International Organization of Securities Commissions
ISMS	Information Security Management System
JFSA	Japan Financial Services Agency
JGB	Japanese Government Bond
JGBCC	Japanese Government Bond Clearing Corporation
JPX	Japan Exchange Group, Inc.
JPY	Japanese Yen
JSCC	Japan Securities Clearing Corporation
LIBOR	London Interbank Offered Rate
OSE	Osaka Exchange, Inc.
OTC	Over the Counter
POMA	Post Offset Margin Amount
PTS	Proprietary Trading System
REIT	Real Estate Investment Trust
RTGS	Real-Time Gross Settlement
SDR	Swap Data Repository
SEF	Swap Execution Facility
SSS	Securities Settlement System
STP	Straight Through Processing
TCCCP	Third Country CCP
TCP	Transmission Control Protocol
TR	Trade Repository
TSE	Tokyo Stock Exchange, Inc.

TSS	Tosho System Service Co., Ltd.
VaR	Value-at-Risk