Principles for Financial Market Infrastructures Disclosure

March 31, 2024

Japan Securities Clearing Corporation

Contents

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Responding institution: Japan Securities Clearing Corporation

Jurisdiction in which the FMI operates: Japan

Authorities regulating, supervising, or overseeing the FMI: Japan Financial Services Agency, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry (Regulation and Supervision), Bank of Japan (Oversight)

Date of Disclosure: April 1, 2024

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

Inquiries: Japan Securities Clearing Corporation, Clearing Planning Department
Contact Point: https://www.jpx.co.jp/jscc/en/form/contact.html
TEL: +81-3-3665-1234

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, Inc. ("TSE") and other exchanges/PTS in Japan ("Cash Products"), listed financial derivatives on Osaka Exchange, Inc. ("OSE"), transactions in commodity markets at OSE, Tokyo Commodity Exchange, Inc. ("TOCOM") and Osaka Dojima Exchange, Inc. ("ODEX"), credit default swaps ("CDS"), interest rate swaps ("IRS"), and OTC Japanese Government Bond ("JGB") transactions[1].

JSCC is licensed to perform Financial Instruments Obligation Assumption Services under the Financial Instruments and Exchange Act ("FIEA")[2] and to perform Business of Assuming Commodity Transaction Debts under the Commodity Derivatives Act ("CDA")[3], and directly regulated by the Japanese Financial Services Agency ("JFSA"), the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry. 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" or "CPMI-IOSCO")[4], into Japanese regulations, and, in November 2014, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry similarly released "Basic Guidelines on Supervision of Commodity Clearing Organizations". JSCC is also subject to oversight[5] by the Bank of Japan ("BOJ") of financial market infrastructures, as provided in the Bank of Japan Act[6]. JSCC is fully compliant with the PFMIs and these Guidelines[7]. 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 the end of March 2024.

Furthermore, JSCC has published quantitative information according to PFMI pursuant to the "Public quantitative disclosure standards for central counterparties" published by CPMI-IOSCO in February 2015[8].

JSCC understands the necessity of a robust and comprehensive system for risk management

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[1] On July 27, 2020, the merger of JSCC and Japan Commodity Clearing House Co., Ltd. ("JCCH") became effective, wherein JSCC becoming the surviving entity. As a result of this merger, JSCC integrated the clearing services for commodity markets which had been offered by JCCH.

[2] FIEA Article 156-2

[3] CDA Article 167

[4] 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").

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

[6] Bank of Japan Act Article 1

[7] In the "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 licensed under the Financial Instruments and Exchange Act and TRs.
Link to the report: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD476.pdf

[8] JSCC's quantitative disclosures can be found at the following link: https://www.jpx.co.jp/jscc/en/company/fmi-pdf2.html

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 robust risk management framework incorporated into its organization, including the Board of Directors and Risk Oversight Committee.

II. Summary of Changes since the Previous Update

This document is JSCC's 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.

JSCC published its first disclosure on March 31, 2015, then updated it on March 31, 2016, March 31, 2017, March 31, 2018, March 31, 2019, March 31, 2020, September 30, 2020, March 31, 2021, March 31, 2022, and March 31, 2023. Major changes in this update from the last disclosure are as follows:

- As of May 29, 2023, JSCC added 3-Month TONA Futures Contracts, Nikkei 225 micro Futures/mini Options and ESG index futures contracts traded at OSE to the Contracts Subject to Clearing.
  - See "Overview of JSCC's Background and Clearing Business" under "III. General Background of the FMI".
- As of September 29, 2023, JSCC obtained an interim order exempting JSCC from the requirement to be recognized as a Clearing Agency under the Securities Act of Ontario from the Ontario Securities Commission.
  - See "Legal and regulatory framework" under "III. General Background of the FMI".
- As of November 6, 2023, JSCC changed the Margin calculation methodology for the Listed Financial Derivatives and Listed Commodity Derivatives, from one using SPAN® (developed by the Chicago Mercantile Exchange), to a VaR methodology.
  - See Principle 3 (Framework for the Comprehensive Management of Risks), Principle 4 (Credit Risk) and Principle 6 (Margin).
- As of November 6, 2023, the product name of "TSE Mothers Index Futures" traded on OSE was changed to "TSE Growth Market 250 Index Futures".
  - See "Overview of JSCC's Background and Clearing Business" under "III. General Background of the FMI".
- As of November 23, 2023, in association with the end of the trial listing of rice on ODEX, JSCC removed rice from the Contracts Subject to Clearing.
  - See "Overview of JSCC's Background and Clearing Business" under "III. General Background of the FMI".
- As of December 18, 2023, JSCC revised the initial margin requirement calculation methodology for the OTC JGB Clearing Business.
  - See Principle 6 (Margin).
- As of February 2024, JSCC added Climate Transition Interest-bearing Government Bonds to the Contracts Subject to Clearing and to the Eligible Collateral.
  - See Principle 5 (Collateral).
- As of March 4, 2024, JSCC added criteria for judgment of the successful clearing of newly submitted trade in the IRS Clearing Business.
  - See "System and operations" under "III. General Background of the FMI" and Principle 6 (Margin).

- As of March 4, 2024, JSCC added interest rate futures contracts to the trades eligible for Cross Margining in the IRS Clearing Business.
  - See Principle 6 (Margin) and Principle 13 (Participant-Default Rules and Procedures).

- As of March 18, 2024, JSCC added JPX Prime 150 Index Futures traded on OSE and electricity futures (weekly) traded on TOCOM, to the Contracts Subject to Clearing.
  - See “Overview of JSCC’s Background and Clearing Business” under “III. General Background of the FMI”.

- From April 1, 2024, JSCC will designate DTCC Data Repository (Japan) K.K. as the trade repository for trade information mandated by the JFSA.
  - See Principle 20 (FMI Links).

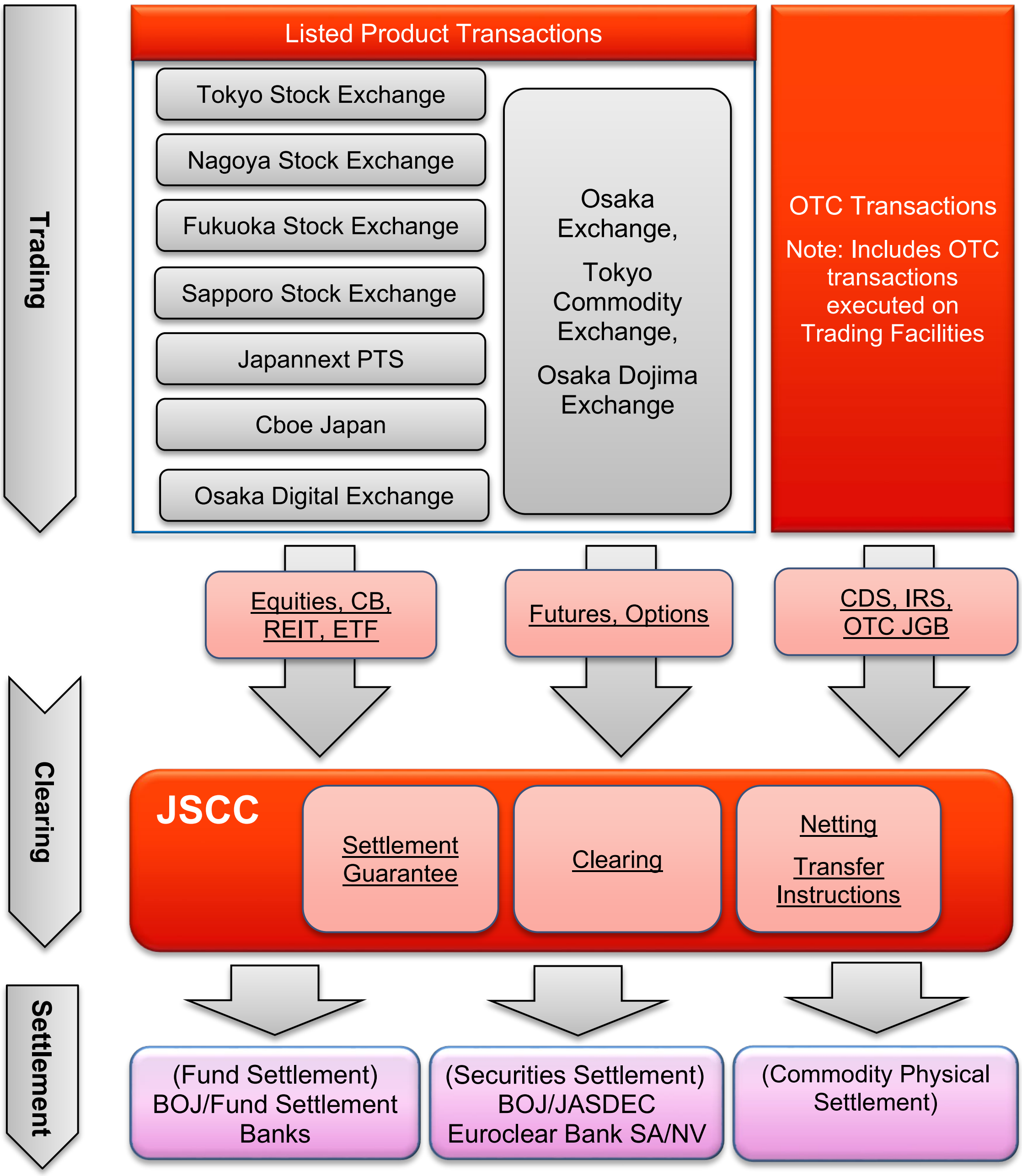
In addition to the above changes, this document contains some additions and revisions to the previous document in association with the minor revisions to the frameworks in each Clearing Business. Also, this document contains some minor additions and revisions to the previous document made for the sake of clarification.

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"). JPX's other subsidiaries include TSE, OSE, TOCOM, JPX Market Innovation and Research, Inc. ("JPX Market Innovation & Research"), 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. As of April 30, 2020, JSCC obtained a license to perform the Business of Assuming Commodity Transaction Debts.

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



JSCC provides the core clearing services for the Japanese financial and commodity markets, clearing all cash securities transactions executed on all Japanese securities exchanges and PTS including TSE ("Cash Products"), Listed Financial Derivatives, Listed Commodity Derivatives (Listed Financial Derivatives and Listed Commodity Derivatives are collectively referred to "Listed Derivatives"), as well as credit default swaps, interest rate swaps, and OTC JGB transactions. In addition, JSCC covers the settlement of listed securities and cash related to ETF creation and redemption.

General Background of the FMI III-2: Cleared Products

Category		Details
Cash Products and Listed Financial Derivatives	Cash Products (*1)	All trades executed on domestic stock exchanges and three proprietary trading systems
	Index Futures	Nikkei 225 Futures (*2) Nikkei 225 mini Nikkei 225 micro Futures TOPIX Futures (*2) mini-TOPIX Futures JPX-Nikkei Index 400 Futures (*2) JPX Prime 150 Index Futures TOPIX Core30 Futures RN Prime Index Futures[9] TSE Growth Market 250 Index Futures S&P/JPX 500 ESG Score Tilted Index Futures FTSE Net Zero Japan 500 Index Futures Nikkei 225 Climate Change 1.5°C Target Index Futures TOPIX Banks Index Futures (*2) DJIA Futures TAIEX Futures FTSE China 50 Index Futures Nikkei 225 Dividend Index Futures Nikkei 225 VI Futures TSE REIT Index Futures (*2) Nikkei 225 Total Return Index (*3)

[9] OSE suspended trading of RN Prime Index Futures on December 8, 2023.

	Index Options	Nikkei 225 Options (*2) Nikkei 225 mini Options TOPIX Options (*2) JPX-Nikkei Index 400 Options (*2) TOPIX Banks Index Options (*3) TSE REIT Index Options (*3)
	Individual Securities Options	Individual Securities Options (*2)
	Bond Futures and Options	5-year JGB Futures 10-year JGB Futures Options on 10-year JGB Futures (*4) mini 10-year JGB Futures mini 20-year JGB Futures
	Interest Rate Futures	3-Month TONA Futures
Listed Commodity Derivatives	Precious Metal Futures and Options on Precious Metal Futures (OSE Listed)	Gold Standard Futures Gold Mini Futures Gold Rolling-Spot Futures Options on Gold Futures Silver Futures Platinum Standard Futures Platinum Mini Futures Platinum Rolling-Spot Futures Palladium Futures
	Rubber Futures (OSE Listed)	Rubber (RSS3) Futures Rubber (TSR20) Futures
	Agricultural Futures (OSE Listed)	Soybean Futures Azuki (Red Bean) Futures Corn Futures
	Petroleum Futures (OSE Listed)	CME Group Petroleum Index Futures

	Energy/Chukyo Oil Futures (TOCOM Listed)	Barge Gasoline Futures Barge Kerosene Futures Barge Gasoil Futures Platts Dubai Crude Oil Futures East Area Baseload Electricity Futures (*5) West Area Baseload Electricity Futures (*5) East Area Peakload Electricity Futures (*5) West Area Peakload Electricity Futures (*5) LNG (Platts JKM) Futures Chukyo Lorry Gasoline Futures Chukyo Lorry Kerosene Futures
	Agricultural/Sugar[10] Futures (ODEX Listed)	Corn 50 Futures U.S. Soybean Futures Azuki (Red Bean) Futures
	Precious Metal Futures (ODEX Listed)	Gold Rolling-Spot Futures Silver Rolling-Spot Futures Platinum Rolling Spot Futures
Credit Default Swaps[11]		Series of Markit iTraxx Japan index Single Name CDS (59 issues)
Interest Rate Swaps[12] [13]		JPY Overnight Index Swap JPY TIBOR (1M, 3M and 6M)
OTC JGB Transaction		Outright JGB Cash-secured Bond Lending Transactions

10 ODEX suspended trading of Raw Sugar Futures on October 4, 2022.

11 See "https://www.jpx.co.jp/jscc/en/cash/cds/product.html" for details of CDS eligible for clearing.

12 Remaining term to maturity (from the date of submission for Clearing to the Termination Date) of IRS that are eligible for Clearing is as follows:
・ JPY OIS: Not less than 3 days and not more than 14,623 days
・ JPY Z TIBOR: Not less than 3 days and not more than 10,971 days
・ JPY D TIBOR: Not less than 3 days and not more than 10,971 days
Please note: Clearing of foreign currency (USD, EUR and AUD) denominated IRS has been suspended since April 1, 2020.
See "https://www.jpx.co.jp/jscc/en/cash/irs/product.html" for details of other IRS eligible for clearing.

13 To deal with the permanent discontinuation of JPY-LIBOR publication on Dec. 31, 2021, JSCC converted all IRS cleared contracts referencing JPY-LIBOR as Floating Rate Option that existed as of the close of business on Dec. 3, 2021 into those referencing TONA (OIS) as Floating Rate Option as of Dec. 6, 2021. In addition, JSCC converted the cleared contracts referencing JPY-LIBOR as Floating Rate Option that subsequently came into existence as a result of Swaption exercises and existed at the close of business on Dec. 30, 2021 into those referencing TONA (OIS) as Floating Rate Option as of Jan. 4, 2022.

From Jan. 4, 2022, when an IRS referencing JPY-LIBOR as a Floating Rate Option that comes into existence as a result of a Swaption exercise is submitted for clearing, JSCC will convert such IRS into an IRS referencing TONA (OIS) as a Floating Rate Option, and clear the resulting trade.

	Standard Repo Transactions[14] Subsequent Collateral Allocation Repo Transactions[15]

(*1) Including the settlement of listed securities and cash related to lending and borrowing and ETF creation and redemption; the same applies hereinafter.

(*2) Including Flexible Contract Month Contracts (referring to contracts whose contract terms, such as the Last Trading Day and the final settlement method are defined by the Trading Participant).

(*3) Only Flexible Contract Month.

(*4) No Flexible Contract Month.

(*5) Monthly and Weekly.

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[14] Referring to Buying/Selling of JGBs with the condition to repurchase/resell, which specifies JGBs subject to Buying/Selling by issue

[15] Referring to Buying/Selling of JGBs with the condition to repurchase/resell, for which JGBs subject to Buying/Selling are specified as a Basket

General Background of the FMI III-3: Clearing Statistics[16]

Cash Products and Listed Derivatives	
Cash Products Index Futures Index Options Individual Securities Options Bond Futures and Options Interest Rate Futures Precious Metal Futures and Options on Precious Metal Futures (OSE Listed) Rubber Futures (OSE Listed) Agricultural Futures (OSE Listed) Petroleum Futures (OSE Listed) Energy/Chukyo Oil Futures (TOCOM Listed) Agricultural/Sugar Futures (ODEX Listed)[17] Precious Metal Futures (ODEX Listed)	https://www.jpx.co.jp/jscc/en/listed_products.html

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

OTC JGB	
OTC JGB Transaction	https://www.jpx.co.jp/jscc/en/jgbcc.html

General organization of the FMI

As a vital financial market infrastructure ("FMI") and a vital commodity market infrastructure 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 two full-time directors and five part-time directors. The board is responsible for approving high-level policies and budgets, and assessing the appropriateness of directors' execution of their duties. 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 published its Governance Guidelines, containing, among other things, the roles and responsibilities of the Board of Directors[18].

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

16 In addition to Clearing Statistics, JSCC discloses quantitative information on its website (https://www.jpx.co.jp/jscc/en/company/fmi-pdf2.html) according to the "Public quantitative disclosure standards for central counterparties" published by CPMI-IOSCO.

17 ODEX suspended trading of Raw Sugar Futures on October 4, 2022.

18 Available at: "https://www.jpx.co.jp/jscc/en/risk/cimhll00000005q9-att/GG_E.pdf"

Disciplinary Measures Assessment Committee, which is composed of members that are independent from JSCC. The Disciplinary Measures Assessment Committee Rules contain the provisions to the effect that a committee member with a special interest in the deliberation at the Disciplinary Measures Assessment Committee may not participate in that deliberation. 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. 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 the end of March 2024, there were a total of 124 Clearing Participants for Cash Products[19] and Listed Derivatives, 11 CDS Clearing Participants, 26 IRS Clearing Participants, and 41 OTC JGB Clearing Participants.

JSCC secures pre-funded financial resources to be available for a Clearing Participant's default, based on the predefined risk appetite[20] for each Clearing Business. For this purpose, initial margin[21] requirements are calculated using an appropriate look-back and holding period in light of the product features of each Clearing Business, 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, and requires Clearing Participants to deposit Margin by a specific time intraday. JSCC makes intra-day margin calls daily in the IRS Clearing Business and the Listed Derivatives Clearing Business.

For the Listed Derivatives, IRS and OTC JGB Clearing Businesses, each Clearing Participant is required to deposit intraday margin according to its positions. Furthermore, following a sudden change in market conditions, JSCC can require an additional deposit of intraday margin, from each Clearing Participant.

JSCC can apply margin add-ons on an event driven basis, if it deems necessary. See Principle 6 (Margin) for further details on margins. In addition, JSCC has implemented an additional margin framework based on each Clearing Participant's counterparty credit risk.

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19 Including ETF Special Clearing Participants (Clearing Participants that are asset management companies under the clearing service related to the settlement of ETF creation and redemption) and Registered ETF Trust Banks (trust banks which are principal bodies to perform settlement operations under the clearing service related to the settlement of ETF creation and redemption).

20 Risk Appetite Statement is available at: "https://www.jpx.co.jp/jscc/en/risk/appetite.html"

21 Under the Business Rules for the securities and similar contracts clearing business and the Business Rules on Business of Assuming Commodity Transaction Debts, initial margin for Listed Derivatives is referred to as "Margin."

For CDS and IRS clearing, JSCC has introduced a Compression framework, in an effort to reduce and compress positions by simultaneously unwinding multiple cleared trades. For IRS, JSCC offers Compression services that allow for the simultaneous participation of multiple Clearing Participants over pre-defined processing cycles (Vendor-Initiated Compression, JSCC-Initiated Compression and Member-Initiated Compression, which Clearing Participants may jointly or independently utilize) and Compression services that can be performed daily upon the request of individual Clearing Participants (Per Trade Compression and Blended Rates Compression). In addition, JSCC accommodates Netting Synchronization, which is the automatic updating of Compression results to MarkitWire, for IRS.

In the event of a Clearing Participant default, JSCC would suspend the delivery of settlement funds, securities and commodities and the posted collateral between the defaulting Clearing 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 maintain no credit risk against their original trade counterparty, as JSCC will guarantee settlements for non-defaulting Clearing participants[22]. In addition, JSCC has secured liquidity supply from Fund Settlement Banks and its parent company, JPX, ("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) under FIEA and a license for "business of assuming commodity transaction debts" under CDA to conduct clearing business as a CCP, and JSCC's business is governed by the FIEA, CDA 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 or the Minister of Agriculture, Forestry and Fisheries and the Minister of Economy, Trade and Industry. JSCC is obligated by the FIEA and CDA[23] 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, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry, and oversight in accordance with objectives prescribed in the Bank of Japan Act from the BOJ.

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22 For the defaulter's position, where the settlement by delivery of commodities has been fixed (Default Delivery Position), Clearing Participants that may perform the delivery and receipt of the commodities are solicited through an auction. If this auction is unsuccessful, the position shall be liquidated by cash and the delivery obligations would cease to exist. Upon a default of an ETF Special Clearing Participant, the defaulter's unperformed obligations related to ETF creation/redemption at JSCC shall become invalid retroactively upon the time of the application for clearing.

23 FIEA Article 156-7 and CDA Article 175

<u>General Background of the FMI III-4: Domestic Laws and Regulatory Framework</u>

<table>
<tr><th>Product</th><th>Market</th><th>Law</th><th>Supervisory Authority</th></tr>
<tr><td>Cash Products</td><td>Japanese Securities Exchanges,
PTS</td><td rowspan="3">FIEA</td><td rowspan="3">JFSA</td></tr>
<tr><td>Listed Financial Derivatives</td><td rowspan="2">OSE</td></tr>
<tr><td rowspan="3">Listed Commodity Derivatives</td></tr>
<tr><td>TOCOM</td><td rowspan="2">CDA</td><td>Ministry of Economy, Trade and Industry</td></tr>
<tr><td>ODEX</td><td>Ministry of Agriculture, Forestry and Fisheries
Ministry of Economy, Trade and Industry</td></tr>
<tr><td>CDS</td><td rowspan="3">OTC</td><td rowspan="3">FIEA</td><td rowspan="3">JFSA</td></tr>
<tr><td>IRS</td></tr>
<tr><td>OTC JGB</td></tr>
</table>

Some of JSCC's Clearing Participants are domiciled in European Union ("EU") countries. Because of this, JSCC has obtained recognition as a Third Country CCP under European Market Infrastructure Regulation ("EMIR") from the EU's European Securities and Markets Authority ("ESMA") to provide services to Clearing Participants and trading venues established in EU countries[24].

In Australia, JSCC has received designation as a Prescribed Facility under Corporations Amendment (Central Clearing and Single-Sided Reporting) Regulation 2015 (Select Legislative Instrument No.157, 2015) [25, 26].

Some Affiliates (referring to a person in the same Corporate Group as the Clearing Participant; the same applies hereinafter) of Clearing Participants that clear CDS or IRS in JSCC are categorized as U.S. Persons, under the guidelines of the U.S. Commodity Futures Trading Commission ("CFTC")[27]. To allow these trading entities to access JSCC's Clearing Service for a swap, JSCC has obtained an order of exemption from registration as a Derivatives Clearing

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24 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000055k-att/JSCC-press-release_TC-CCP_en1.pdf" for details.

25 Currently, Corporations Regulations 2001(Statutory Rules No. 193, 2001).

26 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000054c-att/JSCC-press-release_Prescribed-CCP_en1.pdf" for details.

27 U.S. Person defined in the "Interpretive Guidance and Policy Statement regarding Compliance with Certain Swap Regulations (78 Fed.Reg.45292 (July 26,2013)) IV.A.4." published by CFTC.
See CFTC guidelines on "https://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2013-17958a.pdf" for details.

Organization under the Commodity Exchange Act from the CFTC[28].

Some of the Clearing Participants that clear IRS in JSCC are incorporated in Hong Kong. Therefore, JSCC has obtained authorization from the Hong Kong Securities and Futures Commission ("SFC"), to provide Automated Trading Services, and the designation as a central counterparty, that can be used for the observance of mandatory clearing obligations, under the Securities and Futures Ordinance ("SFO")[29].

Some of the Clearing Participants that clear IRS in JSCC are incorporated in Switzerland. Therefore, JSCC has been recognized as Foreign Central Counterparty under the Financial Market Infrastructure Act from the Swiss Financial Market Supervisory Authority ("FINMA") to offer IRS Clearing Services to those trading entities[30].

Some of JSCC's Clearing Participants are incorporated in the U.K. So, JSCC made a submission to the Bank of England with respect to recognition as a Third Country CCP under the Central Counterparties (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2018, in order to provide services to Clearing Participants and trading facilities established in the U.K. Subsequently, JSCC has obtained temporary recognition for the provision of services in the U.K. as a Third Country CCP[31].

In Canada, JSCC received from the Ontario Securities Commission (OSC) an interim order exempting JSCC from the requirement to be recognized as Clearing Agency under the Securities Act of Ontario. JSCC also received an interim exemptive relief from OSC and the Autorité des Marchés Financiers (AMF), the financial regulatory authority of Quebec, with respect to the substituted compliance with the National Instrument setting forth OTC derivatives' customer clearing and customer protection by JSCC's compliance with the relevant Japanese regulations[32].

Consequently, each trading entity may satisfy their obligations in relation to the central clearing requirements of OTC derivative transactions that are currently in effect, or expected to be in effect in the future, in the EU, Australia, the U.S., Hong Kong, Switzerland, the U.K., and Canada, by clearing its trades in JSCC.

In order to provide trading participants established in the U.S. with direct access to the trading systems for Listed Derivatives listed on each exchange, OSE and TOCOM received registration from the CFTC as a Foreign Board of Trade ("FBOT") under the U.S. Commodities and Exchange Act[33]. In the registration of OSE and TOCOM from the CFTC, JSCC is designated as a CCP for

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28 See JSCC's press releases on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000053q-att/JSCC-press-release_CFTC-Exemption_en1.pdf" and "https://www.jpx.co.jp/jscc/en/information/press_releases/i1h00a0000000yef-att/JSCC-press-release_CFTC-Amended_Exemption_en.pdf" for details.

29 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000051w-att/JSCC_HK_ATSCCP_e.pdf" for details.

30 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/i1h00a0000002w0d-att/JSCC-press-release_FINMA-recognized_foreign_CCP_en.pdf" for details.

31 See Bank of England website on "https://www.bankofengland.co.uk/eu-withdrawal/-/media/boe/files/financial-stability/financial-market-infrastructure-supervision/list-of-third-country-ccps.pdf" for details.

32 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/20231013.html" for details.

33 See CFTC websites below.
(CFTC Press Release: OSE's FBOT Registration)

the clearing of trades executed at OSE and TOCOM.

General Background of the FMI III-5: Authorization, Recognition, Designation, Exemption from Foreign Regulatory Authorities

Country / Region	Covered Trades	Relevant Authority	Authorization, Recognition, Designation, Exemption Obtained
EU	All Cleared Trades	ESMA	Recognition as a Third Country CCP under EMIR
Australia	IRS	Australian Securities and Investments Commission and Reserve Bank of Australia	Designation as a Prescribed Facility under Corporations Regulations 2001(Statutory Rules No.193, 2001)
US	CDS IRS	CFTC	Order of exemption from Registration as a Derivatives Clearing Organization under the Commodity Exchange Act
Hong Kong	IRS	SFC	Authorization to Provide Automated Trading Services, and Designation as a Central Counterparty, that can be Used for the Observance of Mandatory Clearing Obligations, under SFO
Switzerland	IRS	FINMA	Recognition as Foreign Central Counterparty under Financial Market Infrastructure Act
UK	All Cleared Trades	Bank of England	Temporary Recognition as a Third Country CCP under The Central Counterparties (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2018

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https://www.cftc.gov/PressRoom/PressReleases/7772-18

(CFTC Press Release: TOCOM's FBOT Registration)
https://www.cftc.gov/PressRoom/PressReleases/7105-15

(CFTC List of Registered FBOTs)
https://sirt.cftc.gov/sirt/sirt.aspx?Topic=ForeignBoardsofTrade

Canada	IRS	OSC AMF	Interim order exempting recognition of Clearing Agency under the Securities Act of Ontario and exemptive relief with respect to the substituted compliance with the National Instrument 94-102 by JSCC's compliance with the relevant Japanese regulations

System and operations

For cash product transactions, JSCC serves as the CCP for all domestic Japanese financial instruments exchanges and three Proprietary Trading Systems ("PTS"). It fulfills this role through clearing eligible products at the time the transactions are executed in the market, 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 two days basis ("T+2") via a Delivery Versus Payment ("DVP") system.

For Listed Derivatives, JSCC serves as the Financial Instruments Clearing Organization for the products listed on OSE, and as the Commodity Clearing Organization for the products listed on TOCOM and ODEX. JSCC clears the products at the time the transactions are executed in the market, whereby JSCC interposes itself between the parties, assuming their obligations, and guaranteeing the settlement.

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.

The clearing of IRS, including OTC transactions, and transactions executed through Electronic Trading Platforms provided by institutions registered with the JFSA, SEF (Swap Execution Facilities) registered with the CFTC, or MTF (Multilateral Trading Facility) or OTF (Organised Trading Facility) operating in the EU under MiFID/MiFIR, is conducted on each business day during the periods of 09:00 to 12:00, 13:00 to 16:00, and 17:30 to 19:00 (JST). Specifically, upon receipt of an application for clearing a new trade from a Clearing Participant, JSCC calculates the amount of variation margin and initial margin required to cover the entire portfolio of the relevant Clearing Participant, including both the new transaction (if a new trade is part of a Package Trade[34], then all new transactions under the relevant Package Trade) and all existing cleared transactions. If the Clearing Participant's deposited collateral is at least equal to the required amount, JSCC would clear the new trade. However, even in the case where a Clearing Participant's deposited collateral is insufficient to cover the margin required to clear a trade for the Clearing Participant or their Customer, JSCC could clear the trade if certain conditions are met[35], to prevent the rejection of a clearing request in certain cases. For example, a temporary

[34] By using "Package Trade", a Clearing Participant may apply to clear multiple eligible IRS Transactions in bulk (Article 2. (4)-2 of the Interest Rate Swap Clearing Business Rules).

[35] JSCC would clear a trade if sufficient collateral to cover the required amount has not been deposited, only under the following conditions:
- Notional Amount of the trade submitted for clearing is less than the amount prescribed by JSCC;
- Shortfall in the relevant Clearing Participant's required margin deposit is JPY1bil. or less;

difficulty in depositing collaterals by reason of funding arrangements.

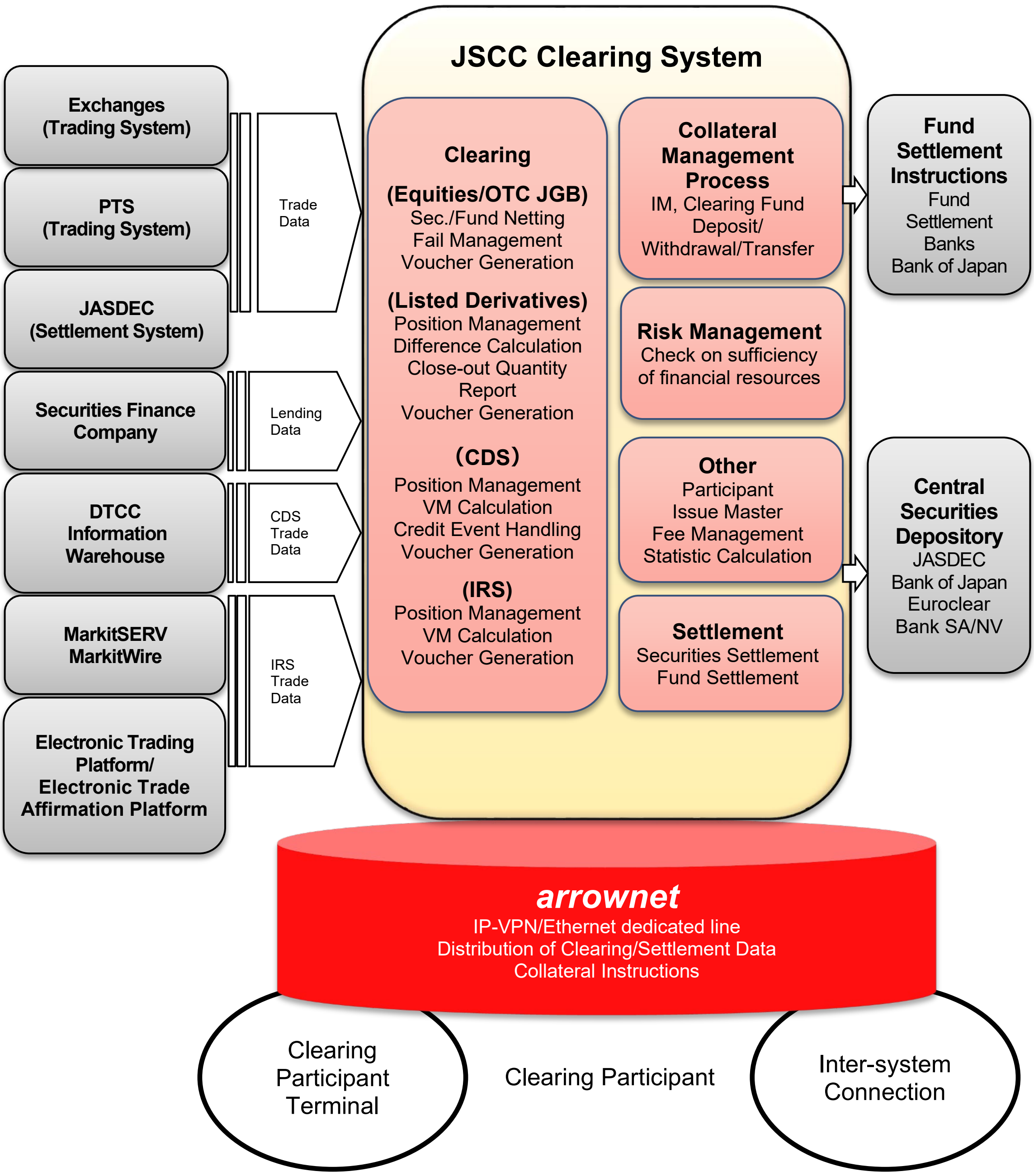
The clearing of OTC JGB transactions, other than Subsequent Issue Allocation Repo Transactions, are cleared at 18:30 (JST), with Subsequent Issue Allocation Repo Transactions being cleared at 7:00, 11:00, and 14:00 (JST) every business day. DVP settlement of OTC JGB transactions is conducted through 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 Clearing Businesses are outsourced to TSE[36]. TSE is a JPX subsidiary, and therefore affiliated with JSCC.

- Intraday Margin call or Initial Margin call based on Cleared Contracts as of 19:00 has been resolved; and
- The relevant Clearing Participant is not in breach of the criteria concerning raising required Initial Margin amount under the "GUIDELINES CONCERNING CREDIT STANDING OF CLEARING PARTICIPANTS, ETC. IN IRS CLEARING BUSINESS".

[36] A part of system processing for the clearing of ODEX-listed Commodity Derivatives is outsourced to ODEX.

General Background of the FMI III-6: 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

Legal Basis for each Material Aspect and Relevant Jurisdiction

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

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, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry in accordance with the "Comprehensive Guidelines for Supervision of Financial Market Infrastructures" established by JFSA and the "Basic Guidelines on Supervision of Commodity Clearing Organizations" established by the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry, which covers all aspects of an FMI's business and operations.

JSCC's Business Rules are approved by the Prime Minister of Japan and the Minister of Agriculture, Forestry and Fisheries and the Minister of Economy, Trade and Industry, in accordance with the FIEA [37] and CDA [38]. 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

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37 FIEA Articles 156-3 and 156-12

38 CDA Articles 168 and 182

and each Clearing Participant.

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 and the "Business of Assuming Commodity Transaction Debts" for which JSCC holds a license under the CDA. JSCC's clearing services are conducted in accordance with the FIEA and the CDA.

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[39] and the CDA[40] prescribes that JSCC's close-out netting process shall prevail over general bankruptcy proceedings.

Provisions relating to Settlement Finality

The provisions dealing with settlement finality are to be prescribed in JSCC's rules and operational procedures (documents prescribing handling of clearing operations in accordance with the rules) and the point at which the settlements between JSCC and its Clearing Participants are final is detailed in the relevant rules and operational procedures. This provides certainty to all of JSCC's Clearing Participants as to the finality related to the performance of their obligations to JSCC. 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[41]. DVP settlement for JGBs[42] 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 Trade Repositories. See Principle 20 (FMI Links) for further details.

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39 FIEA Article 156-11-2

40 CDA Article 181

41 Business Rules for the securities and similar contracts clearing business Chapter 5

42 Japanese Government Bond Over-the-Counter Transaction Clearing Business Rules Chapter 5

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 and the CDA[43]. JSCC may, however, use collateral to satisfy obligations owed to it following the default of a Clearing Participant, where the conditions of the FIEA, the CDA 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 or Article 179 of the CDA for the Listed Products (Derivatives) Clearing Business, and "Clearing Deposit" as defined in Article 156-11 of the FIEA or Article 180 of the CDA for other collateral. The FIEA and the CDA give JSCC the right to receive payment from "Clearing Margin" and "Clearing Deposit" before other creditors.

Provisions relating to Default Management Arrangements

The FIEA and the CDA[44] 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 and approval from Clearing Participants, lawyers, the JFSA, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry 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

[43] FIEA Article 119, Paragraph 4 and Cabinet Office Ordinance on Financial Instruments Exchanges, etc. Article 67, and CDA Article 179, Paragraph 5 and Ordinance for Enforcement of the Commodity Derivatives Act Article 74

[44] FIEA Article 156-11-2 and CDA Article 181

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 and the CDA[45] stipulates 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, 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 Clearing Participant incorporated outside of Japan.

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 and the CDA[46]. 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, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry.

Some of JSCC's Clearing Participants are established in EU countries. Due to this, JSCC has obtained the recognition as Third Country CCP under EMIR from ESMA, enabling JSCC to

45 FIEA Article 156-11-2 and CDA Article 181

46 FIEA Articles 156-3 and 156-12 and CDA Articles 168 and 182

provide services to Clearing Participants and trading venues established in the EU[47].

In Australia, JSCC received designation as a Prescribed Facility under Corporations Amendment (Central Clearing and Single-Sided Reporting) Regulation 2015 (Select Legislative Instrument No.157, 2015)[48, 49].

Some Affiliates of Clearing Participants that clear their CDS or IRS trades in JSCC are categorized as U.S. Persons under the CFTC guidelines[50]. Therefore, to allow these trading entities to access JSCC's swap Clearing Services, JSCC has obtained an order of exemption from registration as a Derivatives Clearing Organization under the Commodity Exchange Act, from the CFTC.[51]

Some of the Clearing Participants that clear IRS through JSCC are incorporated in Hong Kong. Therefore, JSCC has obtained authorization from the SFC of Hong Kong, to provide Automated Trading Services, and the designation as central counterparty that can be used for the observance of mandatory clearing obligations, under the SFO[52].

Some of the Clearing Participants that clear IRS in JSCC are incorporated in Switzerland. Therefore, JSCC has been recognized as Foreign Central Counterparty under the Financial Market Infrastructure Act from FINMA to offer IRS Clearing Services to those trading entities[53].

Some of JSCC's Clearing Participants are incorporated in the U.K. Due to this, JSCC made a submission to the Bank of England with respect to the recognition as a Third Country CCP under the Central Counterparties (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2018, in order to provide services to Clearing Participants and trading facilities established in the U.K. Subsequently, JSCC has obtained temporary recognition for the provision of services in the U.K. as a Third Country CCP[54].

In Canada, JSCC received from OSC an interim order exempting JSCC from the requirement to be recognized as a Clearing Agency under the Securities Act of Ontario. JSCC also received an interim exemptive relief from OSC and AMF with respect to the substituted compliance with the National Instrument setting forth OTC derivatives' customer clearing and customer protection

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47 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000055k-att/JSCC-press-release_TC-CCP_en1.pdf" for details.

48 Corporations Regulations 2001(Statutory Rules No.193, 2001).

49 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000054c-att/JSCC-press-release_Prescribed-CCP_en1.pdf" for details.

50 U.S. Person defined in the "Interpretive Guidance and Policy Statement regarding Compliance with Certain Swap Regulations (78 Fed.Reg.45292 (July 26, 2013)) IV. A.4." published by the CFTC. See CFTC Guidelines on "http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2013-17958a.pdf" for details.

51 See JSCC's press releases on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000053q-att/JSCC-press-release_CFTC-Exemption_en1.pdf" and "https://www.jpx.co.jp/jscc/en/information/press_releases/i1h00a0000000yef-att/JSCC-press-release_CFTC-Amended_Exemption_en.pdf" for details.

52 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/n5ks8e000000051w-att/JSCC_HK_ATSCCP_e.pdf" for details.

53 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/i1h00a0000002w0d-att/JSCC-press-release_FINMA-recognized_foreign_CCP_en.pdf" for details.

54 See Bank of England Website on "https://www.bankofengland.co.uk/eu-withdrawal/-/media/boe/files/financial-stability/financial-market-infrastructure-supervision/list-of-third-country-ccps.pdf" for details.

by JSCC's compliance with the relevant Japanese regulations[55].

In order to provide trading participants established in the U.S. with direct access to trading systems for Listed Derivatives, OSE and TOCOM received registration from the CFTC as an FBOT under the U.S. Commodities and Exchange Act[56]. In the registration of OSE and TOCOM with the CFTC, JSCC is designated as a CCP for the clearing of trades executed at OSE and TOCOM.

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55 See JSCC's press release on "https://www.jpx.co.jp/jscc/en/information/press_releases/20231013.html" for details.

56 See CFTC websites below:

(CFTC Press Release: OSE's FBOT Registration)
https://www.cftc.gov/PressRoom/PressReleases/7772-18

(CFTC Press Release: TOCOM's FBOT Registration)
https://www.cftc.gov/PressRoom/PressReleases/7105-15

(CFTC List of Registered FBOT)
https://sirt.cftc.gov/sirt/sirt.aspx?Topic=ForeignBoardsofTrade

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-" and CDA and the "Basic Guidelines on Supervision of Commodity Clearing Organizations", a CCP is required to contribute to the stability of the financial system and market 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, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry. Toward that purpose, JSCC, in its role as an FMI, provides the following as its Corporate Philosophy:

"JSCC, with a solid risk-management framework, aims to contribute to sustainable development of the markets by improving the efficiency, serviceability and safety of the markets as post-trade processing infrastructure."[57]

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. JSCC's Board of Directors reviews the achievement of the business plans semi-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, the holding company of TSE, OSE, TOCOM, JPX Market Innovation & Research and Japan Exchange Regulation, as shown below.

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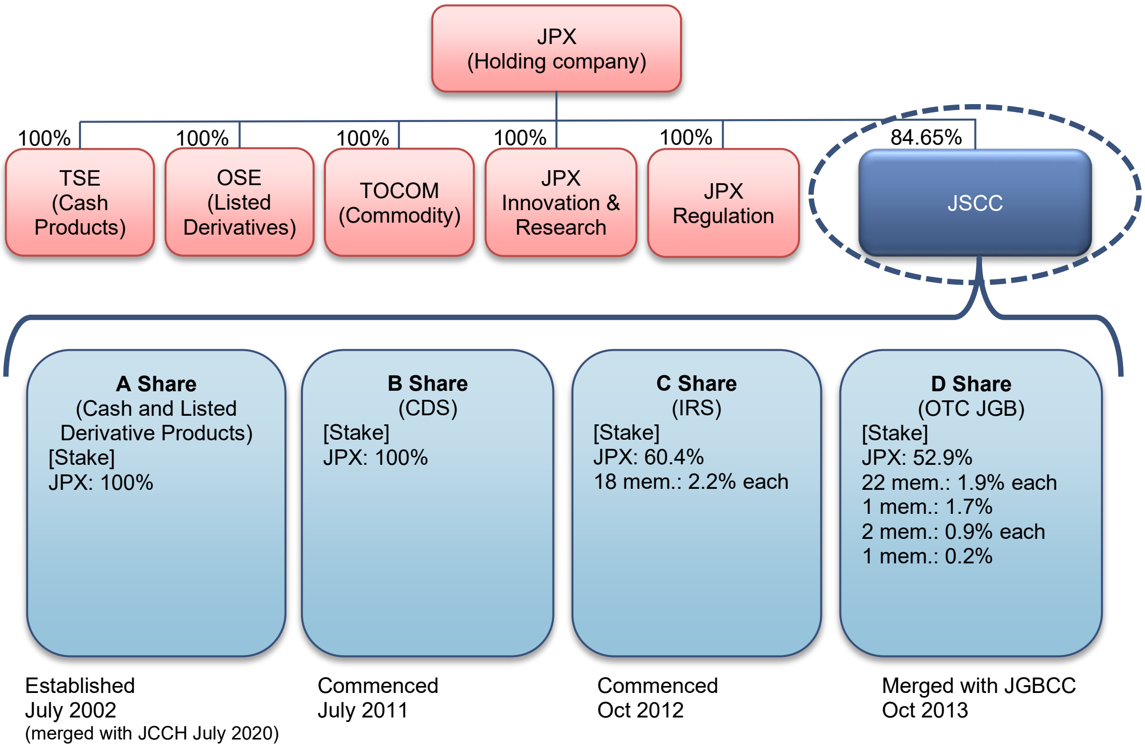
[57] https://www.jpx.co.jp/jscc/en/company/philosophy.html

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



The corporate governance of JPX, which is JSCC's controlling shareholder, is detailed below. Its fundamental approach seeks to fulfill JPX's social mission, as core infrastructure of Japanese markets. This is consistent with JSCC's governance that realizes the aim of an FMI, as detailed in its Corporate Philosophy.

JPX's Basic View to Corporate Governance

<Corporate philosophy and social mission>

JPX group operates markets that are a public asset and fulfills its social mission by pursuing the sustainable development of its markets.

<Market operations>

JPX group operates the markets with the view that garnering support for and fostering confidence in the markets it establishes is in the common interest of all investors and market users, and maintaining and enhancing the support and confidence will build the foundations for sustainable development of its markets.

<Enhanced corporate value>

In order for JPX to pursue sustainable development of its markets, it must continue to accommodate the diverse needs of shareholders and other stakeholders, thereby enhancing corporate value over the medium to long term.

<Effective corporate governance>

JPX strives to constantly improve its corporate governance system to further facilitate *effective and proper systems, so as to support the sustainable development of its markets.*[58]

JSCC is subject to the supervision of the JFSA and the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry in accordance with the FIEA and CDA. JSCC's Articles of Incorporation, which provide for its fundamental governance arrangements, satisfy the detailed governance requirements for a CCP as provided in the FIEA, CDA, the "Cabinet Office Ordinance on Financial Instruments Clearing Organization, etc.," the "Ordinance for Enforcement of the Commodity Derivatives Act," the "Comprehensive Guidelines for Supervision of Financial Market Infrastructures," the "Basic Guidelines on Supervision of Commodity Clearing Organization," and other laws and regulations.

Governance Arrangements

All of JSCC's clearing activities take place within four Clearing Business units: (1) Cash Products and Listed Derivatives, (2) CDS, (3) IRS, and (4) 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 two full-time directors (the President and CEO and one director) as well as five part-time directors. The Board of Directors makes decisions on JSCC's 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 Clearing Participants are nominated to the Board of Directors. The Articles of Incorporation include provisions to the effect that it will respect the opinions of advisory committees in order to establish proper governance.

Through a resolution of the Board of Directors, the executive officers (officers in charge of JSCC's business execution) are appointed, and the Board of Executive Officers, the purpose of which is to discuss the matters to be submitted to the Board of Directors, is formed by all of the executive officers.

JSCC has a Chief Risk Officer ("CRO") who is independent from each clearing business unit, and is the officer in charge of risk management. The CRO reports, and provides recommendations, to the Board of Directors, and the Risk Oversight Committee. The Risk Oversight Committee is an internal forum for the discussion and information-sharing of risk management issues, and the status of implementation of the risk management system, as well as the Risk Appetite Statement, the identification of material risks, and any required countermeasures. The Risk Oversight Committee is composed of the President & CEO, executive officers supervising each business unit, division heads, CRO and other Risk Management Office staff, and auditors.

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

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

Risk Committee

In cases where JSCC intends to make decisions on any matter considered necessary in

[58] JPX's basic concept for corporate governance can be found at the below link:
https://www.jpx.co.jp/english/corporate/about-jpx/co-governance/index.html

the performance of its responsibilities related to risks of the Clearing Businesses, JSCC shall seek advice from the Risk Committee. The committee is composed of members that are external directors of JSCC, Clearing Participants, their customers and other persons with excellent knowledge and experience in the matter of consultation.

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.

Listed Products Management Committee

This committee serves to provide an understanding of Clearing Participants' demands related to the Cash Products and Listed Derivatives 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 from Clearing Participants, taking into consideration member diversification including the type and scale of their business.

CDS Management Committee
IRS Management Committee
OTC JGB Management Committee

These committees deliberate on matters for consultation concerning the operation of each Clearing Business set forth in the Business Rules and subordinate rules for their respective Clearing Businesses, in response to inquiries from the Board of Directors. The committees are composed of Clearing Participants (IRS Management Committee and JGB OTC Management Committee also include 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 executive officer or CRO. The names and roles of each division are as follows:

Risk Management Department

The Risk Management Department, supervised by the CRO, is responsible for the comprehensive risk management operation under the Risk Appetite Framework Management Policy, and the planning and drafting of Clearing Participant rules, as well as matters related to clearing/settlement rules and the examination/monitoring of Clearing Participants.

General Administration

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.

Clearing Planning Department

Strategic Planning is responsible for formulating management and business plans and managing their execution, in addition to general management matters and the planning, strategy, and supervision of IT-related matters, and the 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 (CDS and IRS).

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.

Internal Audit Office

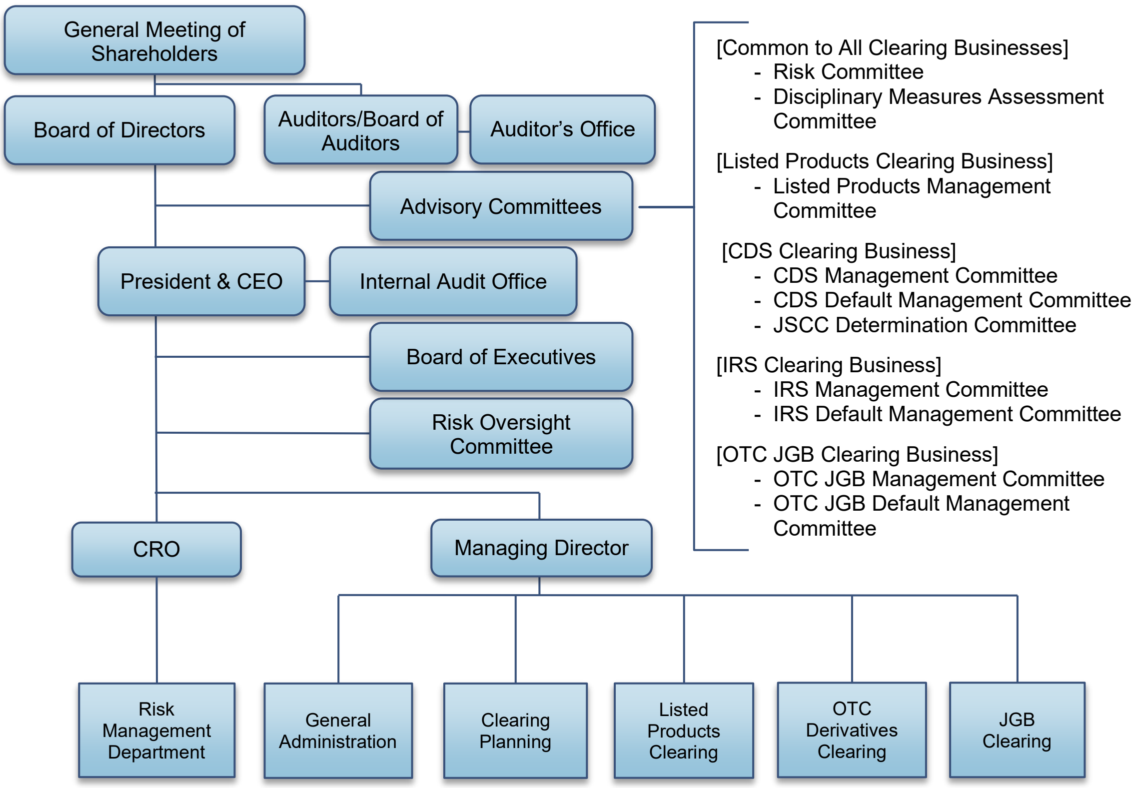
The Internal Audit Office is responsible for conducting audits to confirm the proper execution of business and reports its audit results to the President & CEO and the Board of Statutory Auditors.

Auditor's Office

The Auditor's Office supports the duties of the Statutory Auditors. It is independent from the Directors, and works to facilitate a smooth execution of the audit by the Statutory Auditors.

In addition, in preparation for a scenario where JSCC's facilities in Tokyo are unavailable due to a wide-area natural disaster, JSCC also has personnel located in Osaka, to build the necessary structures for BCP.

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



Disclosure

JSCC published its Governance Guidelines, containing, among other things, the roles and responsibilities of the Board of Directors[59]. Moreover, JSCC publishes the composition of JSCC's shareholders, its Board of Directors and Auditors, and an overview of its advisory committees on its corporate website.

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, JSCC's Articles of Incorporation and Rules

[59] Available at: "https://www.jpx.co.jp/jscc/en/risk/cimhll00000005q9-att/GG_E.pdf"

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; and
- Appointment and dismissal of the President & CEO.

Managing Conflicts of Interest

The Companies Act[60] 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[61] 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[62] 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[63], which serves the same function as an audit committee. The duties of the Board of Statutory Auditors are defined in the Companies Act, and include duties such as preparing audit reports, appointing and removing full-time statutory auditors, deciding audit policy, deciding the method to investigate the status of business and assets of the company, and other matters related to the execution of the auditor's duties[64].

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

60 Companies Act Articles 356 and 365

61 Companies Act Article 381, Paragraph 1 and Article 384

62 Companies Act Article 369, Paragraph 2

63 Companies Act Article 2, Item 10

64 Companies Act Article 390, Paragraph 2

meetings and other meetings, including remarks in such meetings, are used as reference during future nomination processes.

JSCC provides the Board of Directors with an opportunity, once per year, to discuss how they themselves can function more effectively, and the Board of Directors also performs an appraisal of the performance of the Board of Directors and each individual director.

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 and CDA[65] requires that a Financial Instruments Clearing Organizations' and Commodity Clearing Organizations' 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.

Pursuant to the specific nominating criteria established by the Board of Directors, 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

Board member compensation has been set with suitable standards to retain and motivate individuals with appropriate abilities and incentives, to secure long-term interests.

Additionally, the compensation of each director is determined annually by the Compensation Committee, based on the performance of each individual, within the total aggregate amount of board member compensation decided on in the general shareholders meeting.

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 comprised of the President & CEO and 3 executive officers. In accordance with resolutions of the Board of Directors, the senior management executes JSCC's business plans and oversees 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;

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65 FIEA Article 156-4, Paragraph 1 and CDA Article 169, Paragraph 1

- Managing JSCC expenses and investments;
- Executing and managing JSCC's business within the framework of the board-approved Medium-Term business plan; and
- 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's 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 and CDA. JSCC's senior management have diverse experience across exchange operation, 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 has established the Risk Appetite Framework Management Policy as part of its risk management framework, to articulate JSCC's risk appetite (risk tolerance). JSCC has published, on its website, its Risk Appetite Statement, as part of the Risk Appetite Framework Management Policy and is developed in light of requests from, and the expectations of, Clearing Participants, their customers, regulatory authorities, the officers and employees of JSCC, and other stakeholders[66]. JSCC has a Risk Management Policy which details JSCC's approach to handling the risks identified under the Risk Appetite Framework Management Policy. JSCC receives regular reports on the state of compliance with the Risk Management Policy 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 a review of the risk appetite, and can take appropriate measures in response, as necessary.

In addition, the Board of Directors will also receive a report following a serious risk event, such as a Clearing Participant default or critical system failure, to take action as necessary.

Within JSCC, the comprehensive risk management division is responsible for confirming each

[66] Available at: "https://www.jpx.co.jp/jscc/en/risk/appetite.html"

division's compliance with the Risk Management Policy, while the Internal Audit Office is responsible for conducting audits to confirm the proper execution of business by each department, including the Risk Management Division. The auditing of each Clearing Business division is conducted properly with cooperation between both the Risk Management Division 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 Listed Products Management Committee, CDS Management Committee, IRS Management Committee, and JGB OTC Management Committee all include Clearing Participants (IRS Management Committee and JGB OTC Management Committee also include shareholders) as members. The Board of Directors makes inquiries to these advisory committees when deciding upon significant changes to operations or the Business Rules (including clearing fee structure)[67]. Opinions are also collected from a wide range by soliciting public comments on new rules and significant rule changes in advance.

JSCC also consults the relevant Default Management Committees, which are composed of Clearing Participants, on hedging measures and default auctions in the event of a Clearing Participant default in the CDS, IRS, or OTC JGB Clearing Businesses.

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.

67 To consider fee reduction of cash products clearing, JSCC consulted with Cash Product Clearing Participants at the Listed Products Management Committee meeting and revised the fee structure from Oct. 1, 2021.

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 general operational risk, IT system risk and business continuity risk), settlement risk, custody risk, investment risk, concentration risk, legal risk, business risk, risk concerning anti-social forces, and other risks (including risks concerning business management and compliance).

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 contribute to sustainable development of the markets by improving the efficiency, serviceability and safety of the markets as post-trade processing infrastructure."[68]

Under its Corporate Philosophy, JSCC's management policy is (i) expand the scope of trades eligible for Clearing to cover wider market, (ii) offer top global level Clearing Service, and (iii) offer related post-trade services.

Under its Corporate Philosophy and management policy, JSCC has established its Risk Appetite Framework Management Policy as a framework for the business management to systematically manage various risks, under which JSCC stipulates a Risk Appetite Statement concerning each risk, to clarify its attitude towards the risk management, and has defined the Risk Management Policy to deal with them. JSCC has published the Risk Appetite Statement on its website[69].

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, liquidity risk management, default management, and business continuity plan.

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 a risk management system, including Clearing Participant rules, margin rules, a Clearing Fund and Loss Compensation Scheme, and default management procedures in its Business Rules and subordinate rules;

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68 https://www.jpx.co.jp/jscc/en/company/philosophy.html

69 Available at: "https://www.jpx.co.jp/jscc/en/risk/appetite.html"

- In order to handle operational risk, JSCC has defined a "Business Continuity Basic Plan (BCP Basic Plan)" and its related documents ((hereinafter collectively referred to as "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 Basic Policies" and "Information Security Countermeasure Standards" providing for access control and information protection, (b) "Rules for Management of Outsourcing" which provide for vendor selection processes and continuous monitoring and control of outsourced activities, and (c) 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 Japanese Yen Fund Settlement Banks," "Policies for Designation of Foreign Currency Fund Settlement Banks" and "Policies for Designation of Custodians of Posted Collateral," which provide for criteria and procedures for designating banks as Fund Settlement Banks and/or collateral custodians; and
- In order to handle investment risk, JSCC has defined the "Fund Management Handling Rules" and "Policies for Management of Posted Collateral,"[70] 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, Management Policy, and Risk Appetite Framework Management Policy and, for the business operations covered by the Risk Appetite Framework, defines and executes the comprehensive risk management operation comprised of the establishment of a Risk Appetite, the validation of suitability and the management based on the Risk Appetite, as follows.

- Management under the Risk Appetite is comprised of the verification of compliance with the Risk Management Policy, the validation of various risk management frameworks, such as margin frameworks, and the preventive management related to material risks.
- For the management of status of compliance with the Risk Management Policy, the Risk Management Policy has been established to details the relevant policies to respond to various risks, and each division responsible for the relevant risk will act according to the Risk Management Policy and report the status of compliance to the Risk Management Division.
- The Risk Management Division will compile and evaluate the reports received from divisions responsible for the management of each risk. The CRO 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 Committee, comprised of external members with risk management knowledge, is consulted on the comprehensive risk management operation.

Regular Revision of the Risk Appetite, Risk Management Policy and Risk Management System

JSCC's Board of Directors will perform an overall review of the Risk Appetite, Risk Management Policy and Risk Management System at least once a year, and conduct the

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[70] https://www.jpx.co.jp/jscc/en/company/fundmanagementpolicy.html

appropriate revisions in consideration of the risks to which JSCC is exposed. During this review, the Board of Directors will consider new clearing services, the market environment, positions of Clearing Participants, changes in the Japanese and overseas regulatory environment, and other factors. The Board of Directors' review and revision process will be overseen by the Risk Management Division.

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 transaction is executed, the exchange disseminates the execution information, or a drop-copy, in real-time to Trading Participants and Clearing Participants;
- For Listed Derivatives, JSCC adopted a VaR methodology (HS-VaR (Historical Simulation (Expected Shortfall)))[71], and for Cash Products, JSCC has adopted a historical simulation (VaR) margin methodology. The calculation method is specified in JSCC's rules and made public, the required margin amounts are disseminated to Clearing Participants and margin simulation tools are made available for use by 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 provides margin simulation tools as well; 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.
- From viewpoint of appropriate disclosure to Clearing Participants, JSCC distributes a monthly "Risk Profile Report" for each Clearing Business, which contains key information related to risk management, including the status of collateral deposited by Clearing Participants and the status of the adequacy of loss compensation financial resources.

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

[71] Alternative Simulation Method (AS-VaR) for Nikkei 225 Dividend Index Futures and Listed Commodity Derivatives (other than Electricity Futures and LNG Futures)

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, custodians, banks and JPX providing Liquidity Supply Facilities to JSCC, 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 banks, custodians and CSD to assess their credit risk and appropriately manages business processes with each. JSCC has also defined measures in the BCP Basic Plan 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.

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 as a going concern. 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 and CDA[72]. For risks posed by a Clearing Participant's default, JSCC has prepared a Loss Compensation Scheme that makes it possible to comprehensively 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.

JSCC has implemented a "Recovery Plan under the PFMI" setting forth information and procedures necessary for recovery so that it may continuously provide its critical services as a core market infrastructure for the Japanese markets, even if JSCC and the wider financial markets are under extreme stress.

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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[72] FIEA Article 156-10 and CDA Article 178

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 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 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, JSCC also bears credit risk of Fund Settlement Banks and custodians. JSCC has established a robust risk management framework to handle these credit risks as described below[73].

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 that possess a sound management structure and financial basis and an appropriate business execution structure, and are under supervision of the competent authorities or are considered appropriate in light of the operation of JSCC's commodity clearing services. 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.
- In principle, 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. JSCC also has a structure in place allowing JSCC to suspend

[73] In the settlement of ETF creation and redemption, upon a default of an ETF Special Clearing Participant, the assumption of obligations shall become invalid retroactively upon the time of the application for clearing, and JSCC provides no settlement guarantee. Therefore, JSCC accepts neither collateral nor clearing funds from ETF Clearing Participants, and JSCC bears no credit risk from ETF Special Clearing Participants.

clearing for a Clearing Participant holding excessive positions under the Listed Derivatives, CDS, IRS, and OTC JGB clearing businesses. See Principle 6 (Margin), Key Consideration 4 for a structure that allows JSCC to suspend clearing of Listed Derivatives.

- 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 a certain amount of its stockholder's equity to the financial resources for default loss, 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 model (referring to the risk management system and risk evaluation method) by conducting an overall review at least once a year. During this review, JSCC takes into account new clearing services, the market environment, Clearing Participant positions, Japanese 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 volatility index derived from actual option premiums in the market, at least once a day for all clearing services. 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/event driven 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 Custodians

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.

JSCC designates the Bank of Japan ("BOJ") (Japan's Central Bank), as well as banks that satisfy its "Policies for Designation of Japanese Yen Fund Settlement Banks" and "Policies for Designation of Foreign Currency Fund Settlement Banks", as Fund Settlement Banks. Also, JSCC designates CSDs subject to PFMI, as well as the BOJ and custodians that satisfies its "Policies for Designation of Custodians of Posted Collateral", as custodians for collateral. JSCC monitors the Fund Settlement Banks' and custodians' compliance with these guidelines on a regular basis. Moreover, Japanese yen settlement funds in Fund Settlement Bank accounts and Japanese yen cash collateral, including Clearing Participant margin and Clearing Fund deposits held in custodian accounts, are maintained within the BOJ accounts or banking accounts 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. The trust assets are legally protected from the risk of the trustee's default under Japanese law. However, JSCC is allowed to invest cash collateral held in trust through the ordinary account of the trust bank, in accordance with JSCC's Investment Policy. Only the banks satisfying the predetermined criteria can be JSCC's counterparty to the said investment of cash collateral, so that credit risks associated with investments can be minimized as much as possible. See Principle 16 (Custody and Investment Risks), Key Consideration 4 for details of JSCC's fund investment policies.

In order to diversify its exposures as much as possible, JSCC uses multiple 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.

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[74] [75], 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[76] is exchanged with Clearing Participants in Japanese yen, with variation margin for foreign currency denominated IRS being exchanged in the respective currency[77]. This process ensures that current exposure is covered in a timely manner. For Cash Product transactions, 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 clearing services.

- For Cash Product transactions, current exposure and potential future exposure are both covered by initial margin. Initial margin for Cash Product transactions is calculated using the loss equivalent arising in association with the mark-to-market of the open positions,

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74 Current exposure is covered by initial margin for options contracts.

75 For Listed Derivatives contracts executed on non-business days on which OSE and/or TOCOM are open for trading ("Holiday Trading"), JSCC charges a Margin requirement add-on before the holiday, to avoid an accumulation of exposures by the Clearing Participants who filed notifications of their participation in the Holiday Trading to JSCC ("Holiday Clearing Participants"). See Principle 6 (Margin) for further details on margin related to Holiday Trading.

76 The term of "variation margin" includes Mark-To-Market Margin to be paid or received according to daily mark-to-market for listed derivatives.
In the IRS Clearing Business, a Clearing Participant, Affiliate or non-Affiliated customer can select payment and receipt of mark-to-market difference according to daily fund settlement in lieu of payment and receipt of variation margin (Variation-Margin-as-Settlement). The term of "variation margin" includes this mark-to-market difference.

77 JSCC has suspended the clearing of foreign currency denominated IRS since April 1, 2020.

obtained by using the most recent price, and expected loss from open positions obtained by using historical simulation (VaR) method.

- The initial margin for Listed Derivatives is calculated using VaR method (HS-VaR or AS-VaR).
- 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.

JSCC has additional margin rules to respond to liquidity risk, 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 cash, or in the form of highly liquid securities (securities in lieu of cash), such as JGBs, or warehouse receipts. Non-Japanese yen cash, securities deposited in lieu of cash and warehouse receipts are marked-to-market on a daily basis, and subject to conservative 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 at least 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.

For Cash Products, Listed Financial Derivatives, CDS, IRS, and OTC JGB, default expectations are set to the 2 largest Clearing Participants (including any other Clearing Participant that is a Related Company[78] of the Clearing Participant), while default expectations are set to the 1 largest Clearing Participant and 5 Clearing Participants with the lowest net worth (including any other Clearing Participant that is a Related Company of the Clearing Participant) for Listed Commodity Derivatives[79].

The required amount for the Clearing Fund of each Clearing Business is revised on a monthly basis for Cash Products transactions, and a daily basis for Listed Derivatives, CDS, IRS, and OTC JGB, in accordance with the risk amount of the relevant business.

For Listed Derivatives, CDS, IRS and OTC JGB, it has been observed that when risk is trending higher, fluctuations in the required amount for Clearing Fund are reduced if the required amount of Clearing Fund is revised on a daily basis, when compared to revisions at longer

[78] Same scope as "Affiliate" defined in PFMI (Note 39), which includes parent (*oya-gaisha*), subsidiaries (*ko-gaisha*) and associates (*kanren-gaisha*) of a Clearing Participant, as well as any subsidiaries (*ko-gaisha*) and associates (*kanren-gaisha*) of a Clearing Participant's parent (*oya-gaisha*).

[79] For Petroleum Futures Contracts, default expectations are set to the 2 largest Clearing Participants (including any other Clearing Participant that is a Related Company of the Clearing Participant).

intervals. Moreover, for Cash Products, Listed Derivatives, CDS and OTC JGB, wide fluctuations of the required amount for Clearing Fund are reduced by calculating the required amount, based on a risk amount over a certain lookback period.

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 testing and backtesting for Clearing Participant positions for each of its Clearing Businesses, in order to confirm the sufficiency of the pre-funded loss compensation financial resources, and the total loss compensation resources comprised of the prefunded resources plus additional contributions from Clearing Participants. 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 subordinate rules, of each Clearing Business. To ensure sufficiency of the loss compensation 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 loss compensation 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 pre-funded loss compensation financial resources, including margin, clearing fund, and JSCC's contribution, are sufficient to cover potential losses, as well as whether the total loss compensation resources comprised of the aforementioned pre-funded resources plus additional contributions from Clearing Participants are sufficient to cover potential losses, for each of its Clearing Businesses.

JSCC's stress testing framework considers the largest historical movements in a range of stress events 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 full-time 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 monthly to Clearing Participants in the "Risk Profile Report" and annually to the advisory committees, whose members include Clearing Participants of each Clearing Business. If a problem with the sufficiency of the loss compensation resources is identified during stress testing, JSCC would maintain the sufficiency of the pre-funded loss compensation resources by recalculating the size of Clearing Funds, or by making an additional Initial Margin Call. JSCC would also consider taking other appropriate actions, including reviewing and/or revising the necessary financial resources.

Review and Validation

In accordance with the Risk Management Policy, 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 clearing service and parameters are revised based on prevailing market conditions. JSCC also conducts daily reverse stress testing to identify excessively extreme scenarios where the loss compensation financial resources would become insufficient.

In accordance with the Risk Management Policy, JSCC's Risk Management Division validates the overall risk management model at least annually, making recommendations regarding revisions to the relevant Clearing Business division, as necessary. The reporting line of the Risk Management Division is independent from the Clearing Business divisions, reporting directly to the CRO. Thus, ensuring the validation process conducted by the Risk Management Division is independent from the Clearing Business divisions. The validation process verifies the effectiveness of the margin/Clearing Fund model and specifications according to the prevailing market environment, and makes recommendations regarding revisions, as necessary. The results of the 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 conservative scenarios that are extreme, but plausible. These scenarios are suitably set in accordance with the nature of each product, taking into account relevant historical market data.

For stress scenarios used in stress testing, to confirm sufficiency of loss compensation financial resources, JSCC uses both historical scenarios and hypothetical scenarios.

JSCC uses a range of historical scenarios taking into account the stress events that caused the largest historical fluctuations in each market relevant to the eligible products for clearing, over the previous 30-year period, such as Black Monday (1987), the Asian Financial Crisis (1997-1998), the bankruptcy of LTCM (1998), the September 11 attacks in the U.S. (2001), the Financial Crisis (the Lehman collapse) (2008), the Great East Japan Earthquake (2011), the Swiss Franc Shock (2015), and the COVID-19 pandemic (2020).

In addition, JSCC employs hypothetical (forward-looking) scenarios that are generated by models, based on the relationship between price movements and volatility fluctuations, the "fat-tail" feature of price movement distributions, the autocorrelation of volatility fluctuations, the simultaneous distribution of price fluctuations of many products, and principal component analysis related to interest rate term structure changes, according to the features of each product eligible for clearing.

Holding periods are defined for each clearing service in the Business Rules and subordinate rules, as the period required for position liquidation under stressed market conditions.

For the default assumptions, defaults of the largest 2 Clearing Participants (including any other Clearing Participant that is a Related Company of the defaulter) has been adopted for Cash Products, Listed Financial Derivatives, CDS, IRS and OTC JGB clearing, and the largest Clearing Participant, plus the 5 Clearing Participants with the lowest net worth (including any other Clearing Participant that is a Related Company of the defaulter), has been adopted for Listed Commodity Derivatives[80].

The Listed Derivatives, CDS, IRS, and OTC JGB Clearing Businesses have a tear-up framework of Clearing Participant positions, should losses exceed the loss compensation resources. In consideration of the large potential impact of implementing the tear-up framework, the assumption for these Clearing Businesses (except for the "Listed Commodity Derivatives other than Petroleum Futures" Clearing Business), incorporates a greater number of defaults than that used in the Clearing Fund calculation, for the evaluation of the sufficiency of the total loss compensation financial resources (including additional contribution from Clearing Participants).

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.

[80] For Petroleum Futures Contracts, default expectations are set to the 2 largest Clearing Participants (including any other Clearing Participant that is a Related Company of the Clearing Participant).

Replenishment of Financial Resources

In cases where the Clearing Fund of non-defaulting Clearing Participants is used for Cash Products and Listed Derivatives, JSCC requires that the non-defaulting Clearing Participants replenish the original amount on the following business day.

In the case of Listed Derivatives, CDS, IRS, and OTC JGB, JSCC requires that the non-defaulting Clearing Participants replenish the recalculated Clearing Fund amount on the business day following the 30th day after the default. In cases where another default occurs during this period, this would be extended to, for Listed Derivatives, the time when JSCC acknowledges the completion of the default settlement, and for CDS, IRS and OTC JGB, the 30th day after the second default, and so forth for successive defaults ("Capped Period"). By this arrangement, the procyclical impact on the non-defaulting Clearing Participants, due to the replenishment of the required amount of Clearing Fund, is reduced.

To cover credit risk during the Capped Period, JSCC calculates the required Clearing Fund for each non-defaulting Clearing Participant on a daily basis. If the required Clearing Fund exceeds the required Clearing Fund for the day immediately preceding the first default, JSCC would call for deposit of the amount equal to such excess from the non-defaulting Clearing Participant ("Default Contingent Margin"). The Default Contingent Margin is a defaulter-pay type collateral to be used as financial resources to cover losses arising from the potential default of the Clearing Participant that deposited the Default Contingent Margin.

JSCC contributes a certain amount as loss compensation financial resources to each Clearing Business. In the unlikely event that some of these contributions are consumed, they would be subject to replenishment.

The measures required for the replenishment of these financial resources are stipulated in the rules for each Clearing Business and the Recovery Plan.

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)	✔	✔	✔	✔	✔
Cash (USD)	✔	✔	—	—	—
Japanese Government Bonds (*1)	✔	✔	✔	✔	✔
Bonds guaranteed by the Japanese Government (referring to Japanese yen denominated bonds stipulated in Article 2-11 of the Enforcement Ordinance of the FIEA) (*2)	✔	✔	—	—	—
Foreign Government Bonds (U.S. Treasury Bonds/Notes/Bills)	✔	✔	✔	✔	—
Foreign Government Bonds (UK, Germany, France)	✔	✔	—	—	—
Stocks (*3)	✔	✔	—	—	—
Municipal Bonds (*2)	✔	✔	—	—	—
Special Bonds (excluding bonds guaranteed by the Japanese Government) (*2, 4)	✔	✔	—	—	—
Corporate Bonds (excluding bonds with stock acquisition rights and Exchangeable Corporate Bonds) (*2, 4)	✔	✔	—	—	—
Yen-denominated bonds issued by foreign juridical persons (excluding Yen-denominated bonds stipulated in Article 2-11 of the	✔	✔	—	—	—

Enforcement Ordinance of the FIEA, Convertible Bonds, and Exchangeable Corporate Bonds) (SAMURAI bonds) (*2, 4)					
Beneficiary securities of public and corporate bond investment trusts	—	✔(*6)	—	—	—
Convertible Bonds (*5)	—	✔(*6)	—	—	—
Exchangeable Corporate Bonds (*5)	—	✔(*6)	—	—	—
Beneficiary securities of investment trust (excluding beneficiary securities of public and corporate bond investment trusts) listed on a financial instruments exchange	✔	✔	—	—	—
Beneficiary securities of investment trust (excluding beneficiary securities of public and corporate bond investment trusts) not listed on a financial instruments exchange	—	✔(*6)	—	—	—
Investment securities	✔	✔	—	—	—
Warehouse Receipts (those certifying the storage of goods deliverable for the JSCC's settlement by delivery)	—	✔(*7)	—	—	—

(*1) *Including Climate Transition Interest-bearing Government Bonds. Inflation-Indexed JGBs are eligible collateral for the Cash Products and Listed Derivatives Clearing Business, as well as for the OTC JGB Clearing Business.*

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

(*3) *Including stocks, preferred equity securities, foreign stock depository receipt, beneficiary securities of foreign investment trusts, foreign investment securities, beneficiary securities of beneficiary securities issuing trusts and beneficiary securities of foreign beneficiary securities issuing trusts, and limited to those listed on a financial instrument exchange in Japan.*

(*4) *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.)*

(*5) *Limited to those listed on a financial instruments exchange in Japan.*

(*6) *Limited to Initial Margin for customers (excluding Affiliates) of a Clearing Participant.*

(*7) *Limited to Initial Margin for customers (excluding Affiliates) of a Clearing Participant. However, for the Initial Margin for OSE Listed Derivatives, warehouse receipts related to Precious Metals may be deposited as Clearing Participant's Proprietary Initial Margin and Affiliate's Initial Margin*

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.

For Listed Commodity Derivatives traded on TOCOM and ODEX, Clearing Participants may be permitted a temporary deferral of deposit of customer Margin (other than Affiliate's Margin) through a notification of LG Contract.

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.[81]

Collateral Haircuts

For bonds, conservative haircuts are adopted by ensuring that haircuts are sufficient to cover 99% of price movements under stressed market conditions, derived from the largest historical 4-day price movement over the past 10 years. In addition, for foreign government bonds, 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 to ensure it covers 99% of the largest historical 4-day price movements over the past 10 years.

For cash (USD), JSCC applies a collateral haircut that is sufficient to cover 99% of the 4-day movements in the foreign exchange rate over the past 10 years.

For warehouse receipts, collateral is valued at 70% in accordance with the application of the haircut. The suitability of this haircut is verified to ensure it covers 99% of the largest historical 4-day price movements over the past 10 years.

JSCC conducts daily backtesting to validate the appropriateness of the collateral haircuts. JSCC updates collateral haircuts quarterly to reflect the latest market environment. JSCC is able to change haircuts applicable to securities deposited in lieu of cash and warehouse receipts on an ad-hoc basis.

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

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[81] Business Rules for the securities and similar contracts clearing business Article 15-2, Paragraph 5, Article 52, Paragraph 4, and Article 70, Paragraph 6
Business Rules on Business of Assuming Commodity Transaction Debts Article 68, Paragraph 6
CDS Clearing Business Rules Article 7
IRS Clearing Business Rules Article 7
OTC JGB Clearing Business Rules Article 70-8, Paragraph 2

Key Consideration 2 of this Principle for details on the establishment and calibration of haircuts.

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 (for Cash Products and Listed Derivatives Clearing) is capped at 5%[82] of the issued and outstanding shares of the issuer, for each Clearing Participant. In addition, restrictions are imposed on each Clearing Participant to ensure that no more than 20% of the sum total of the required amounts of Clearing Fund and Initial Margin for Cash Products and house and affiliate Initial Margin for Listed Derivatives is covered by certain bond collateral[83] other than JGBs, and warehouse receipt collateral.

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 dollar cash, US Treasuries, and the government bonds of UK, Germany and France, which have high market demand, high liquidity, and can be easily converted into Japanese yen.

For the Listed Derivatives Clearing Business, US Treasuries and the government bonds of UK, Germany and France are held at an overseas CSD (Euroclear Bank SA / NV) in JSCC's name. Smoother collateral transfer between JSCC and Clearing Participants would become possible by executing tri-party agreement among JSCC, the relevant Clearing Participant and CSD, if the Clearing Participant so desires. For both accounts, JSCC is recognized as the holder of such collateral. As such, JSCC is able to issue instructions regarding the liquidation of deposited foreign government bonds as necessary. US dollar cash is deposited with the Fund Settlement Bank satisfying the "Foreign Fund Settlement Banks Designation Guidelines" prescribed by JSCC at the proprietary account in the name of JSCC, and an instruction can be given, and liquidation can be processed, as necessary.

Additionally, US Treasuries deposited for the IRS and CDS Clearing Businesses are put into trust and held at a Japanese trust bank, with JSCC holding the authority under the Business Rules to issue instructions for the liquidation of them, if required.

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

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82 Equity collateral posted for the purposes listed below is capped at 2% of the issued and outstanding shares:
- clearing fund;
- Initial Margin for Cash Products;
- Initial Margin for Listed Derivatives on proprietary and Affiliate's book.

83 Municipal bonds, special bonds, corporate bonds, and JPY-denominated foreign bonds.

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, the Japan Securities Dealers Association ("JSDA") for JGB OTC trades, and key information vendors[84]) 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.

[84] 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 variation margin and initial margin to be deposited by all Clearing Participants, according to the nature of the products in each Clearing Business. For derivatives transactions, JSCC also requires the deposit of variation margin and initial margin from customers. Variation margin and initial margin, which cover current exposure and potential future exposure under regular market conditions, 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, and JSCC has implemented a counterparty credit risk margin add-on, or additional deposit framework, with the methodology varying for each clearing business:

- For Cash Products, the margin add-on is based on each Clearing Participant's net worth (or net assets);
- For Listed Derivatives, JSCC timely requires the deposit of additional initial margin from Clearing Participants that hold excessive positions; and
- For CDS, IRS, and OTC JGB, JSCC has in place a margin add-on framework that is based on each Clearing Participant's regulatory capital ratio, net worth (or net assets), rating, etc., as well as a margin add-on framework for Clearing Participants holding excessive positions.

Details of the margin calculation methodologies are set forth in JSCC's Business Rules and their subordinate rules for each Clearing Business. See Principle 6, Key Considerations 3 and 4.

Provision of Information to Clearing Participants

For Cash Products, Listed Derivatives, CDS, IRS, and OTC JGB, JSCC prescribes in its rules, and publishes, the margin requirement calculation methodology, distributes margin requirement information, and provides a margin simulation system.

For Listed Derivatives, JSCC prescribes in its rules that the margin requirement is calculated using a VaR method. Clearing Participants can output the VaR margin calculation result, by importing the parameter files for the VaR margin calculation provided by JSCC and the position file prepared by the user, into the VaR Margin Calculation Software provided by JSCC. In addition, JSCC has made available a simulation environment enabling users to check the VaR margin simulation result on a web browser for any selected position for the latest business day.

Clearing Participants may perform "what-if" margin simulations for their entire cleared portfolio, plus additional theoretical trades.

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.

Clearing Participants are required to deposit margin twice a day for Listed Derivatives and IRS, and three times a day for OTC JGB. Moreover, for all Clearing Businesses, Clearing Participants are required to deposit additional margin on an event driven basis, in the event of a large price fluctuation. 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 posting of collateral that would be required to cover the entire portfolio, including both the new transaction (if a new transaction is a part of a Package Trade[85], then all new transactions under the relevant Package Trade) and cleared transactions, before clearing the new transaction. New trades which fail to fulfill this requirement are rejected. However, even in the case where a Clearing Participant's deposited collateral is insufficient to cover the margin required to clear a trade for the Clearing Participant or their Customer, JSCC could clear the trade if certain conditions[86] are met, to prevent the rejection of a clearing request in certain cases. For example, if a temporary difficulty in depositing collateral by reason of funding arrangement. To reduce the chance of JSCC rejecting a clearing request, due to a customer's collateral shortfall, Clearing Participants are allowed to pre-fund collateral (Customer Buffer) that can be used to resolve customers' collateral shortfalls.

When customers' deposit of initial margin with a Clearing Participant is operationally difficult, for instance when transactions by customers in a different time zone are expected, and there is prior agreement between the Clearing Participant and the customer, 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.[87]

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

[85] JSCC's "Package Trade" functionality allows Clearing Participants to apply for clearing multiple Eligible IRS Transactions in bulk (Article 2. (4)-2 of Handling Procedures of Interest Rate Swap Business Rules).

[86] JSCC could clear a trade even if the required amount of collateral has not been deposited, only if all of the following conditions are met:
- Notional Amount of the trade submitted for clearing is less than the amount prescribed by JSCC;
- Shortfall in the relevant Clearing Participant's margin required to clear is JPY1bil or less;
- Intraday Margin call or Initial Margin call based on Cleared Contracts as of 19:00 has been resolved; and
- The relevant Clearing Participant is not in breach of the criteria concerning raising required Initial Margin amount under "GUIDELINES CONCERNING CREDIT STANDING OF CLEARING PARTICIPANTS, ETC. IN IRS CLEARING BUSINESS".

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

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: JSCC generates yield curves based on the quotes obtained from broker/dealer screens, JSCC's actual cleared trades, and information vendor's composite data. The combined dataset is then cleaned and used for margin calculations.
- 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.

Should it not be possible to acquire the latest market prices, the latest available price will be used for margin calculations. Overall validation of the margin model is conducted at least once a year by the Risk Management Division, independent from each Clearing Business. See Principle 6, Key Consideration 7 for details of model validation.

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 at least 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. The relevant holding period for each product, as prescribed in the Business Rules and their subordinate rules, is the period required to complete the liquidation of a defaulter's positions.

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

JSCC has implemented a framework to prevent procyclical changes in required initial 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. However, when amending a margin model, JSCC ensures that a framework that mitigates procyclicality is applied.

Principle 6 (Margin) Key Consideration 3 IV-4: Overview of Initial Margin Calculation Method

	Model Type	Calculation Method	Reference Period	Holding Period	Confidence Level	Parameter / Scenario Update Frequency
Cash Products	VaR	Historical Simulation	250 Days	1 Day	99%	Daily
Listed Derivatives	Expected Shortfall (*1)	Historical Simulation	1,250 Days + Stress Periods (*2)	2 Days (*3)	99%	Daily (*5)
CDS	Expected Shortfall	Historical Simulation	750 Days + Stress Periods	5 Days	99.5%	Daily
IRS	Expected Shortfall	Historical Simulation	1,250 Days + Stress Periods	5 Days (*4)	99.5%	Daily
OTC JGB	POMA	Delta Method	1,250 Days + Stress Periods	3 Days	99%	Daily

(*1) VaR for Nikkei 225 Dividend Index Futures and Listed Commodity Derivatives (other than Platts Dubai Crude Oil Futures, CME Group Petroleum Index Futures, Electricity Futures and LNG Futures).

(*2) For Listed Commodity Derivatives other than Platts Dubai Crude Oil Futures, CME Group Petroleum Index Futures, Electricity Futures and LNG Futures, just 250 business days (Stress Periods are not taken into account).

(*3) 1 business day for Listed Commodity Derivatives other than Electricity Futures and LNG Futures.

(*4) 7 business days for Clients.

(*5) Weekly for Nikkei 225 Dividend Index Futures and Listed Commodity Derivatives (other than Electricity Futures and LNG Futures).

Margin Calculation Method

(1) Listed Products: Cash Products

JSCC calculates the required initial margin amount for Cash Products by using the methodology outlined in 1) below, and when the aggregate risk amount of a Clearing Participant is considered excessive, JSCC will increase the required initial margin amount using the methodology outlined in 2) below.

1) Required Initial Margin

JSCC calculates the daily required initial margin amount for Cash Products based on the following:

- Mark-to-market value of each open position evaluated using the latest price; Separate payment/deposit of variation margin is not conducted for Cash Products, with an equivalent amount included in the initial margin calculations.

- Expected losses from open positions obtained by using a historical simulation (VaR) methodology based on the price fluctuation of unsettled open positions; Under the historical simulation (VaR) methodology JSCC employs for calibrating expected losses from open positions, the daily price movement is obtained, for each issue, by using scenarios generated during a predetermined period in the past, and the expected loss is set as the value to cover a certain confidence level. The parameters used for the calculation are a 250-days reference period, 99% confidence level, and a 1-day holding period.

2) Initial Margin Requirement Add-ons

JSCC has a rule in place to increase the required initial margin amount for Clearing Participants in accordance with risks associated with each Clearing Participant's open positions. If the expected loss upon a Clearing Participant's default under stressed market conditions exceeds the pre-funded financial resources deposited by a Clearing Participant, then JSCC will increase the required initial margin amount for the Clearing Participant to cover such un-covered loss in advance.

(2) Listed Products: Listed Derivatives

JSCC calculates the required initial margin amount for Listed Derivatives by using the methodology outlined in 1) below, and when the aggregate risk amount of a Clearing Participant is considered excessive, JSCC will increase the required initial margin amount according to the methodology outlined in 2) below.

1) Initial Margin Requirement

The required amount of initial margin is obtained using a VaR methodology to calculate the amount of collateral required to cover the risk of expected loss.

For Listed Financial Derivatives (other than Nikkei 225 Dividend Index Futures), and Electricity Futures and LNG Futures, an HS-VaR method has been adopted, wherein the expected profit and loss is obtained by using a scenario of historical daily risk factors (the settlement prices for futures, and the underlying asset price and implied volatility for options). The amount required to cover a certain level of the expected profit and loss is the required amount of initial margin. Parameters used in the calculation include a reference period of 1,250 days, a confidence level of the average of the worst 2.5% exceeding 97.5% (Expected Shortfall, coverage ratio similar to 99% VaR), and a holding period of 2 days. Additionally, JSCC has methodologies in place (Volatility Scaling methodology based in Exponentially Weighted Moving Average method) to revise the historical scenarios, based on the latest volatility environment. In addition to the data from the reference period, data from the significant historical stress scenarios (since 2008) are also used. This is to prevent sudden changes in required initial margin when stress events are added to, or removed from, the reference period. Groups are created within a portfolio subject to HS-VaR, as necessary, to prevent the required amount of initial margin becoming too small, by imposing offset restrictions between groups.

For Nikkei 225 Dividend Index Futures and Listed Commodity Derivatives (other than Electricity Futures and LNG Futures), an AS-VaR methodology has been adopted, where 30 scenarios (holding period of 1day) comprised of a combination of "fluctuation range" (generated from historical data and set as a parameter) and "direction of fluctuation" are used to obtain the profit and loss. From the profit and losses generated, the largest loss is adopted as the expected loss amount. Between the instruments with risk correlations, the risk offsets effect on the entire portfolio is reflected in the risk amount per contract by applying a certain risk amount credit for the overlapping short/long.

2) Initial Margin Requirement Add-ons

Upon default of a Clearing Participant holding extremely large positions relative to other

Clearing Participants, more time would be required for liquidation. In this scenario, the normal initial margin requirement may not be sufficient to cover any resulting losses. Therefore, JSCC charges an initial margin requirement add-on to any Clearing Participant, or client, holding large positions. Specifically, JSCC analyzes the house and client positions held by each Clearing Participant to decide if the add-on needs to be charged, according to liquidity and concentration criteria. When it is judged that the add-on is required, then the larger of the excess loss amounts calculated according to these criteria, is applied as the add-on charge.

Additionally, for JGB Futures contracts, in order to cover credit risk from the final positions of a Clearing Participant in the settlement by physical delivery and payment, JSCC separately requires a deposit of initial margin from Clearing Participants during the period from the last trading day of each contract month, to the day before the date of the settlement by physical delivery and payment. JSCC calculates this required initial margin amount as the sum total of the expected loss for each issue, based on the price movement of each JGB issue subject to the physical delivery and payment (120-day reference period, 99% confidence level). Upon a settlement by delivery in the commodity market, JSCC will increase the house and/or customer margin requirements for Clearing Participants according to the price fluctuation risk associated with the physical delivery. The rate used for the calculation of such margin amount is revised periodically based on certain factors, such as the historical cash products price fluctuation ratio.

3) Preliminary Margin Add-on related to Holiday Trading

JSCC clears Listed Derivatives contracts executed on non-business days on which OSE and/or TOCOM are open for trading for the Holiday Clearing Participant. While trades executed through Holiday Trading are treated as the trades as of the next business day at OSE and TOCOM, and cleared by JSCC, JSCC charges Margin requirement add-on before the holiday, to avoid an accumulation of exposures by Holiday Clearing Participants due to Holiday Trading.

(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. Specifically, JSCC calculates net positions for each reference entity and obtains the Short Charge by multiplying the notional amount of the largest net short position by 0.48.

The Bid/Ask Charge is calculated to cover liquidity risk arising when liquidating positions following a Clearing Participant default. Specifically, JSCC calculates net positions for each issue and obtains the Bid/Ask Charge by multiplying the sensitivity of the net position by the bid/ask spread which JSCC sets based on the prevailing market condition.

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. Specifically, JSCC calculates the net short positions of trades referencing such reference entity, and obtains Credit Event Margin by multiplying the net positions 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 Single Name CDS separating from the reference entity of an Index CDS due to a restructuring credit event. Specifically, JSCC calculates net positions of transactions referencing such reference entity. For net short positions, JSCC obtains the Single Name Margin 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, JSCC obtains the Single Name Margin 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 adding the amount determined in consideration of the liquidity risk 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 client 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 interest rate fluctuations during the reference period.

Additionally, JSCC has methodologies in place (Volatility Scaling methodology based in Exponentially Weighted Moving Average method) to revise the historical interest rate fluctuation scenarios, based on the latest interest rate environment in order to reflect current interest rate environment promptly.

JSCC provides a cross margining service, enabling the risk offset between JPY-denominated IRS, JGB Futures, and interest rate futures, to Clearing Participants, Affiliates and non-Affiliated customers of the IRS Clearing Business, for whom the Notification of Using Cross Margining has been submitted to JSCC (“Cross Margining User”). JSCC calculates the required initial margin for them by using the same historical simulation (expected shortfall) methodology as the IRS Clearing Business.

Assuming prior agreement with its client, a Clearing Participant may use a framework that allows it to increase the relevant client’s initial margin requirement at a fixed rate (Client

Additional Margin). JSCC will increase the relevant client's initial margin requirement upon request of the Clearing Participant[88].

2) Liquidity Charge

Liquidity Charge is calculated to cover market liquidity risk arising from the liquidation of a defaulting Clearing Participant's positions. The Liquidity Charge is calculated by multiplying a position sensitivity (PV01) by a bid/ask spread derived from a market survey of Clearing Participants, and then reflecting a correlation coefficient based on past interest rate fluctuations between tenor buckets.

3) Holiday Margin

The settlement of variation margin and other cash settlements for foreign currency denominated IRS is difficult on a non-business day in the home jurisdiction of the relevant currency. However, the latest market movements in the relevant currency need to be properly captured in JSCC's risk management framework. Therefore, JSCC adjusts the Clearing Participant's required initial margin by an amount equivalent to the variation margin and other cash settlements, in the relevant currency[89].

When a market in the home jurisdiction of the relevant currency is open on a JSCC non-business day, JSCC increases the required initial margin for the relevant Clearing Participant on the day immediately preceding JSCC's non-business day, in order to cover expected interest rate and foreign exchange market risk.

(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. For OTC JGB, JSCC calculates the required initial margin amount three times a day (7:00, 11:00 and 14:00 (JST))

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 251, 501, or 1,251[90] 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,

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[88] By using the Client Additional Margin framework, a Clearing Participant's initial margin related to the client will be increased. When the total risk amount exceeding collateral for the top 2 Clearing Participants decreases due to the Clearing Participant's utilization of the Client Additional Margin framework, the relevant Clearing Participant's clearing fund requirement would be reduced.

[89] JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

[90] The highest result from one of the reference periods (i.e. 250 continuous days plus one day in the stress period, 500 continuous days plus one day, or 1,250 continuous days plus one day) is used.

Adjusted POMA, and the minimum amount is used to determine the initial margin required to cover actual market price fluctuations for the first calculation, the greatest of the Adjusted POMA and the minimum amount is used for the second calculation, and the greatest of the Adjusted POMA, Average POMA, and the minimum amount is used for the third calculation.

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 variation margin, due to the default of a Clearing Participant. For OTC JGB Transactions, other than Subsequent Collateral Allocation Repo Transactions, it is calculated by averaging a certain ratio of the top settlement amounts during a certain historical period. For Subsequent Collateral Allocation Repo Transactions, it is the amount equivalent to the fund settlement amounts at each clearing time of 7:00, 11:00 and 14:00 (JST).

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. While the risk amount is determined after offsetting the delivery/receipt of positions, a certain percentage of the risk amount before offsetting is used as a floor to avoid excessive offsets. As with the initial margin calculation, the greatest of the risk amount and the minimum amount are used for the first calculation, the greatest of the risk amount and the minimum amount is used for the second calculation, and 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 is used for the third calculation.

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. 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. For the Holiday Trading of Listed Derivatives, JSCC charges a Margin requirement add-on before the holiday, to avoid an accumulation of exposures by Holiday Clearing Participants. Furthermore, JSCC also has a framework in place under which, in case of consecutive holidays, JSCC calculates the risk amounts from the expected Margin requirement and Variation Margin based on the latest market price, and could suspend clearing during the consecutive holidays for a Holiday Clearing Participant holding risk amounts exceeding its posted collateral. By these measures, accumulation of current exposure is prevented with respect to Holiday Clearing Participants even on a Holiday Trading day. See Principle 6, Key Consideration 3 for the preliminary Margin add-on related to Holiday Trading.

For Listed Derivatives, JSCC recalculates margin requirements during the morning by using the most recent market prices, and may issue intraday margin calls if required, to cover any intraday shortfall on the same day. Additionally, a framework is in place to handle large price fluctuations, where additional intraday (afternoon) calculations are made using the most recent market prices, and JSCC may issue intraday margin calls, if required, to cover any intraday shortfall on the same day. For more proactive action against any Clearing Participant holding excessive positions, JSCC recalculates margin requirements using the latest market prices on a real-time basis, and can call for the same-day deposit of any shortfall from any Clearing Participant that exceeds the criteria JSCC sets for each Clearing Participant between 9:00 and 13:00 (JST)[91].

For IRS, JSCC recalculates the margin requirements at noon based on the most recent positions of each Clearing Participant, and may issue intraday margin calls, if required, to cover any intraday shortfall on the same day. Moreover, a framework is also in place to handle large price fluctuations, under which additional margin calculations are made, and JSCC may issue additional intraday margin calls, if required.

For Cash Products, OTC JGB and CDS, a framework is in place to handle large price fluctuations, where additional intraday margin calculations are made using the most recent market prices, and JSCC may issue intraday margin calls, if required, to cover any intraday shortfall on the same day. For intraday margin calculations, the most recent market prices during the day are used for Cash Products and CDS, but for OTC JGB, as intraday market prices are difficult to acquire, JSCC applies a predetermined ratio to the required margin calculation based on positions at the previous day's close of business.

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.

For Cash Products, JSCC calculates initial margin by applying a historical simulation (VaR) methodology, to take account of correlations between the price movements of different issues.

For Listed Derivatives (futures/options), under the VaR method, JSCC calculates initial margin in light of historical price fluctuation correlations between instruments under HS-VaR, and calculates initial margin by applying risk amount credits by identifying the product groups with the large risk correlation under AS-VaR.

For CDS transactions, JSCC calculates initial 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 initial margin by applying a historical simulation (expected shortfall) methodology, to take account of interest rate fluctuation correlation for

[91] If a Clearing Participant's risk amount is considered excessive, JSCC could suspend some or all of the Clearing Participant's Listed Derivatives clearing.

positions in different rate types and tenors. JSCC has introduced a cross margining mechanism for initial margin, which enables risk offset between JPY-denominated IRS, and JGB Futures and interest rate futures. For a Cross Margining User, the required initial margin is calculated, for both JPY-denominated IRS, and JGB Futures and interest rate futures, by using the same historical simulation (expected shortfall) methodology as the IRS Clearing Business.

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.

Among eligible products for JSCC's clearing, JSCC conducts cross margining across multiple types of products. As both products exhibit similar risk characteristics (i.e., interest rate risk), JSCC provides an optional cross margining service to Clearing Participants and their customers that enables the offsetting of initial margin between JPY-denominated IRS, and JGB Futures and interest rate futures.

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 Cash Product transactions, CDS and IRS transactions using a historical simulation 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 backtesting, comparing the margin requirement for each account and the actual losses arising from positions in the account (i.e., the losses based on actual market fluctuations on and after the base date) on a daily basis, to confirm that the target confidence level prescribed in the Risk Management Policy is achieved. Additionally, JSCC performs backtesting, comparing the margin requirement for each account and the hypothetical loss which may arise from positions in the account (loss amount on an assumption that the position on the base date existed on or before the base date), and using statistical analysis.

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.

The Risk Management Division, which is independent from Clearing Business divisions, 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. JSCC adds or revises margin models, as necessary, when launching a new clearing service. The addition or revision of any margin models is subject to validation by the Risk Management Division.

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, in addition to its proprietary assets and yen-denominated Liquidity Supply Facilities from its parent company, JPX, JSCC has secured yen-denominated and foreign currency denominated Liquidity Supply Facilities from multiple commercial banks that have been designated as Fund Settlement Banks.

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 settlement amount associated with the settlement of notional amount, JSCC has established a framework to procure liquidity via JGB repo transactions with Clearing Participants and other financial institutions.

Furthermore, for Cash Products and Listed Derivatives, JSCC has a framework in place that allows for the temporary use of the Japanese yen cash[92] portion of the clearing fund deposited by non-defaulting Clearing Participants, following settlement failure by a Clearing Participant.

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[93].

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[92] Limited to the amount of the clearing fund of which deposit in Japanese yen cash is required.

[93] In the OTC JGB Clearing Business, JSCC receives JGBs from the delivering Clearing Participant in exchange for the payment of the settlement funds, and then delivers JGBs to the receiving Clearing Participant in exchange for the payment of the settlement funds, via DVP settlement at the Bank of Japan. When receiving JGBs from a delivering Clearing Participant, JSCC applies the funds secured by JGBs to be received to the settlement funds, via BOJ's JGB settlement using simultaneous processing of DVP and collateralization.

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, for Japanese yen and each applicable currency other than Japanese yen designated as the settlement currency for foreign currency denominated IRS, and from its parent, JPX, for Japanese yen, to ensure fund settlement [94].

For Listed Products (Cash Products and Listed Derivatives), JSCC has a framework in place that allows for the temporary use of the Japanese yen cash [95] portion of the clearing fund deposited by a non-defaulting Clearing Participants, following settlement failure by a Clearing Participant.

JSCC conducts daily stress tests for liquidity resources in the settlement currency (JPY) to confirm the sufficiency of its liquidity resources.

JSCC has established a framework for procuring liquidity via repo transactions with Clearing Participants or non-Participant financial institutions 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.

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94 JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

95 Limited to the amount of the clearing fund of which deposit in Japanese yen cash is required.

In respect of the above-mentioned liquid resources, JSCC conducts cross-product liquidity stress testing across all Clearing Businesses, except OTC JGB, and conducts stand-alone liquidity stress testing for the OTC JGB Clearing Business. See Key Consideration 9 of this Principle for liquidity stress testing for OTC JGBs.

For the cross-product stress testing (excluding OTC JGB), for each stress scenario JSCC calculates the highest aggregate (cross-product) daily liquidity requirement, from the date of the assume default, up to the completion of the position liquidation. The stressed liquidity requirement is calculated based on extreme but plausible price fluctuations, such as the largest observed historical price fluctuations and the historical changes in price correlations during stressed market periods. JSCC performs multilateral analysis, not only based on historical data, but also through the stress risk amount calculation, based on hypothetical forward-looking scenarios, and reverse stress testing.

The number of simultaneous defaults used in the calculation of stressed liquidity requirement is 2 Clearing Participants (including any other Clearing Participant that is an Affiliate of a defaulting Clearing Participant) for all Clearing Businesses.

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;
- Liquidity Supply Facilities;
- JSCC's proprietary assets; and
- Japanese yen cash deposited by non-defaulting Clearing Participants for Cash Products and Listed Derivatives.

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 and JSCC's parent company, JPX. Pursuant to agreements with each Fund Settlement Bank and JPX, funds should be made available on the date of application, if the application is made prior to a pre-agreed cut-off time. For the OTC JGB Clearing Business, repo transactions of JGB securities, which is a highly liquid market, are utilized to access same-day funding.

Outlines of these qualifying liquid resources and use priority are specified in the Recovery Plan.

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, in accordance with the Recovery Plan.

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 supplementarily use liquid resources secured by JSCC besides its own assets set aside as qualifying 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 major qualifying liquid resources are composed of cash deposited as margin or Clearing Fund by a defaulting Clearing Participant, Liquidity Supply Facilities and JSCC's proprietary assets. Additionally, JSCC has established a liquidity framework via JGB repo transactions with Clearing Participants and other financial institutions for OTC JGBs. Furthermore, for Cash Products and Listed Derivatives, JSCC has a framework in place that allows for the temporary use of the Japanese yen cash[96] portion of the clearing fund deposited by non-defaulting Clearing Participants, following settlement failure by a Clearing Participant.

Reliability of Liquidity Providers

JSCC diversifies its liquidity sources by receiving Liquidity Supply Facilities from 6 Fund Settlement Banks for Japanese yen. The concentration status of liquidity provider resources is monitored on a monthly basis. Moreover, to further diversify its liquidity suppliers, JSCC has obtained a yen-denominated Liquidity Supply Facilities from its parent company, JPX.

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

All of the Japanese yen Fund Settlement Banks operate under the supervision of the JFSA

[96] Limited to the amount of the clearing fund of which deposit in Japanese yen cash is required.

and are currently eligible counterparties in a BOJ's fund provision operation. All of the Fund Settlement Banks which are the liquidity supply providers for other currencies operate under the supervision of the JFSA or financial regulators in the countries of their establishment. Moreover, JPX, which is JPY-denominated liquidity supplier, is subject to financial requirements under the FIEA as a Financial Instruments Exchange Holding Company, and operates under the supervision of the JFSA. 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.

For Cash Products and Listed Derivatives, if it is difficult to facilitate the settlement by utilising funding from the Liquidity Supply Facilities and JSCC's own funds, JSCC may temporarily use the Japanese yen cash portion of the clearing fund deposited by non-defaulting Clearing Participants. To ensure effectiveness of this framework, JSCC requires that Clearing Participants deposit a predetermined portion of the clearing fund requirement in Japanese yen cash.

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 Japanese Yen fund settlements for the CDS, IRS, and OTC JGB Clearing Businesses are conducted through a BOJ account.

For the IRS Clearing Business, funds to be settled in other currencies, in relation to foreign currency denominated IRS, are settled through accounts of commercial banks[97].

For the Cash Products and Listed Derivatives 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.

[97] JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

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 for liquidity resources in Japanese Yen that is a settlement currency for all Clearing Businesses, as well as other settlement currencies related to foreign currency denominated IRS[98], at least once a day, to verify that Liquidity Supply Facilities and JSCC's proprietary assets 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, under stressed market conditions, even in the case where all Clearing Participants select repo transactions with haircuts applied. Additionally, JSCC confirms, on a daily basis, that the amount of initial margin is sufficient to cover the potential increase in liquidity requirement resulting from market fluctuations, due to the Clearing Participant's default, under the stressed market conditions.

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

Stress Scenarios

JSCC conducts stress tests according to various extreme but plausible scenarios. The

[98] JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

scenarios are conservative, and reference related historical market data.

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

JSCC uses a range of historical scenarios taking into account the stress events that caused the largest fluctuations in each market relevant to the eligible products for clearing, over the previous 30-year period, such as Black Monday (1987), the Asian Financial Crisis (1997-1998), the bankruptcy of LTCM (1998), the September 11 attacks in the U.S. (2001), the Financial Crisis (the Lehman collapse) (2008), the Great East Japan Earthquake (2011), the Swiss Franc Shock (2015), and the COVID-19 pandemic (2020).

In addition, JSCC employs forward-looking cross-product scenarios by taking into account correlations between products under stress conditions, according to the features of each product eligible for clearing.

Moreover, in the stress testing to confirm sufficiency of the liquidity resources, JSCC uses cross-product scenarios where forward-looking hypothetical stress scenarios are defined in light of the correlations between products.

JSCC assumes the default of the largest 2 Clearing Participants (including any other Clearing Participant that is a Related Company of the defaulting Clearing Participant) for each of its Clearing Businesses.

Review and Validation of Stress Scenarios

In accordance with the Risk Management Policy, 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. Moreover, JSCC undertakes daily reverse stress testing to identify extreme scenarios where the liquidity resources would be insufficient.

In accordance with the Risk Management Policy, JSCC's Risk Management division validates the overall risk management model, including Liquidity Supply Facilities, on at least an annual basis, and makes recommendations regarding revisions to be considered. The results of these validations are reported to the Board of Directors, pursuant to the Risk Management Policy.

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

99 Business Rules for the securities and similar contracts clearing business Article 80
Business Rules on Business of Assuming Commodity Transaction Debts Article 84
CDS Clearing Business Rules Article 113
IRS Clearing Business Rules Article 113
OTC JGB Clearing Business Rules Article 91

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.

Point of Settlement Finality

JSCC conducts settlement via securities settlement and fund settlement, as well as settlement by delivery under the physical-settlement commodity futures.

For securities settlement and fund settlement, 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. For fund settlement in a currency other than Japanese yen, the point of settlement finality is when either the intrabank transfer has been made from the Clearing Participant's account at the Fund Settlement Bank, or the credit to JSCC's account is made in the settlement process between different Fund Settlement Banks.

For the settlement by delivery under the physical-settlement commodity futures, the settlement is considered to be completed between JSCC and the Clearing Participant upon delivery by the delivering Clearing Participant or receipt by the receiving Clearing Participant, of the good delivery material, and is considered final; provided, that when the market operator approves the settlement by delivery via ADP (Alternative Delivery Procedure), the settlement shall be deemed to have competed upon such approval.

Fulfillment of Obligations pertaining to Settlement

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.

Legal Certainty of Finality

JSCC specifies the method and timing of JSCC's settlements in its Operational Procedures. The Operational Procedures prescribe procedures to be observed by Clearing Participants based on JSCC's Business Rules, which 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, or when the delivery by the delivering Clearing Participant or the receipt by the receiving Clearing Participant of the qualified delivery goods is performed. 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.

For Cash Products and Listed Derivatives, CDS and OTC JGB Clearing Businesses, JSCC only uses Japanese Yen for settlement. For IRS Clearing Business, in addition to Japanese yen, JSCC uses currencies for the settlement of foreign currency denominated IRS[100].

For each of its Clearing Businesses, JSCC uses an account with the BOJ, the central bank, whenever possible. Specifically, all JPY settlements for the CDS, IRS, and OTC JGB Clearing Businesses are conducted through a BOJ account.

For the IRS Clearing Business, fund settlement in non-JPY currencies are performed through an account of a commercial bank. JSCC designated two commercial banks as Fund Settlement Banks for fund settlements in foreign currencies, and Clearing Participants may select to perform fund settlement through an account at either of those Fund Settlement Banks.

For the Cash Products and Listed Derivatives 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 for fund settlement in Japanese yen, based on the choice of each Clearing Participant.

For Japanese yen fund settlement, 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.

For settlement in currencies other than Japanese yen, JSCC holds a settlement account in the two above-mentioned Fund Settlement Banks, and fund settlement between a Clearing Participant and JSCC is conducted via account transfer between the Clearing Participant's account and JSCC's account, at the bank selected by the Clearing Participant.

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.

JSCC only designates commercial banks which satisfy its "Policies for Designation of Japanese Yen Fund Settlement Banks" and "Policies for Designation of Foreign Currency 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, or supervision

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[100] JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

by financial regulators at the countries of their establishment.

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 Japanese Yen Fund Settlement Banks" and "Policies for Designation of Foreign Currency 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 Japanese Yen Fund Settlement Banks" and "Policies for Designation of Foreign Currency 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 Japanese Yen Fund Settlement Banks" and "Policies for Designation of Foreign Currency Fund Settlement Banks."

Furthermore, by designating the BOJ and six Fund Settlement Banks for Japanese yen and two Fund Settlement Banks for currencies other than Japanese yen, 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 accounts held by JSCC 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.

<u>Central Bank Money Settlement</u>

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 for Japanese yen fund settlement. For fund settlement in foreign currencies, Clearing Participants are required to send fund transfer instructions to the Fund Settlement Bank in time so the transfer instructions will arrive by the remittance instruction receipt cutoff time designated by JSCC.

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. Physical deliveries between JSCC and Clearing Participants are performed for the cash trading of Investment Securities issued by the BOJ and the physical-settlement of certain Listed Commodity futures contracts.

JSCC's Business Rules for the securities and similar contracts clearing business[101] 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.[102]

For the physical delivery and receipt of commodities between Clearing Participants and JSCC, the delivery methods and the settlement cutoff times are prescribed in JSCC's Business Rules for the securities and similar contracts clearing business and the Business Rules on Business of Assuming Commodity Transaction Debts and subordinate rules.[103]

JSCC's Business Rules and subordinate 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" and the "Operational Procedures for Settlement by Delivery related to Commodity Futures Contracts", 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 and warehouse receipts). Measures for these risks are outlined below.

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[101] Clearing business for cash products, and listed derivatives listed on OSE.

[102] Business Rules for the securities and similar contracts clearing business Articles 47, 48, and 56

[103] Business Rules for the securities and similar contracts clearing business Chapter 5, Section 7-2, Subsection 3 and Business Rules on Business of Assuming Commodity Transaction Debts Article 60

Measures for Principal Risk

The aforementioned “Operational Procedures for Non-DVP Settlement” and the “Operational Procedures for Settlement by Delivery related to Commodity Futures Contracts” 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

JSCC delivers the securities certificates received from the delivering participant to the receiving participant on the same day, or the next day for some commodities. In the case of a delivery on the next day, such securities certificates are held by a custodian, such as a bank. As such, the period that JSCC holds the securities certificates is extremely short and the risk of theft/destruction is limited. When holding such securities certificates, JSCC stores them in a locked fireproof safe located on JSCC’s premises to reduce the risk of theft and destruction.

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.

For settlement related to the physical delivery of commodities (not related to the delivery of securities certificates), the settlement between JSCC and Clearing Participants shall be deemed to have been completed upon the delivery and receipt between the receiving Clearing Participant and the delivering Clearing Participant. If the Clearing Participant that has become a party to the delivery fails to perform the delivery or receipt by the deadline, the settlement shall be completed through a payment of cash by the relevant Clearing Participant to JSCC, and JSCC’s payment of such cash to the counterparty to the relevant delivery.

To secure the performance of the settlement by delivery, JSCC will increase the Margin requirement for house and customer of a Clearing Participant according to the price fluctuation risk associated with the delivery.

CSDs and Exchange-of-Value Settlement Systems

Principle 11: Central Securities Depositories

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 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 Securities (Net-Net)

JSCC uses Net-Net DVP settlement for 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 in the market and an auction involving non-defaulting Clearing Participants (when necessary) is used for Listed Products, and an auction involving non-defaulting Clearing Participants is used for CDS, IRS, and OTC JGBs, for which JSCC prescribes specific methods in its rules and operational procedures[104]. In addition, for Listed Products, CDS and IRS, hedge transactions can be promptly executed for the defaulter's portfolio to minimise the risk of losses prior to the disposal of the defaulter's positions. Hedge transactions for CDS and IRS are executed based on the advice of the related Clearing Business's advisory committee (CDS Default Management Committee, IRS Default Management Committee). If a defaulting Clearing Participant holds positions in foreign currency denominated IRS, the default management process, including hedge transactions, will be conducted for each currency[105].

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. Moreover, for OTC JGBs, currently no Clearing Participant has a non-Affiliated customer. 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. For Cash Products and Listed Derivatives, JSCC has a framework in place that allows for the temporary use of the Japanese yen cash portion of the

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104 Upon a default of an ETF Special Clearing Participant, unperformed obligations related to ETF creation/redemption shall become invalid retroactively upon the time of the application for clearing. JSCC will return the listed securities and/or cash received from the Clearing Participants that are the original counterparties to the defaulter.

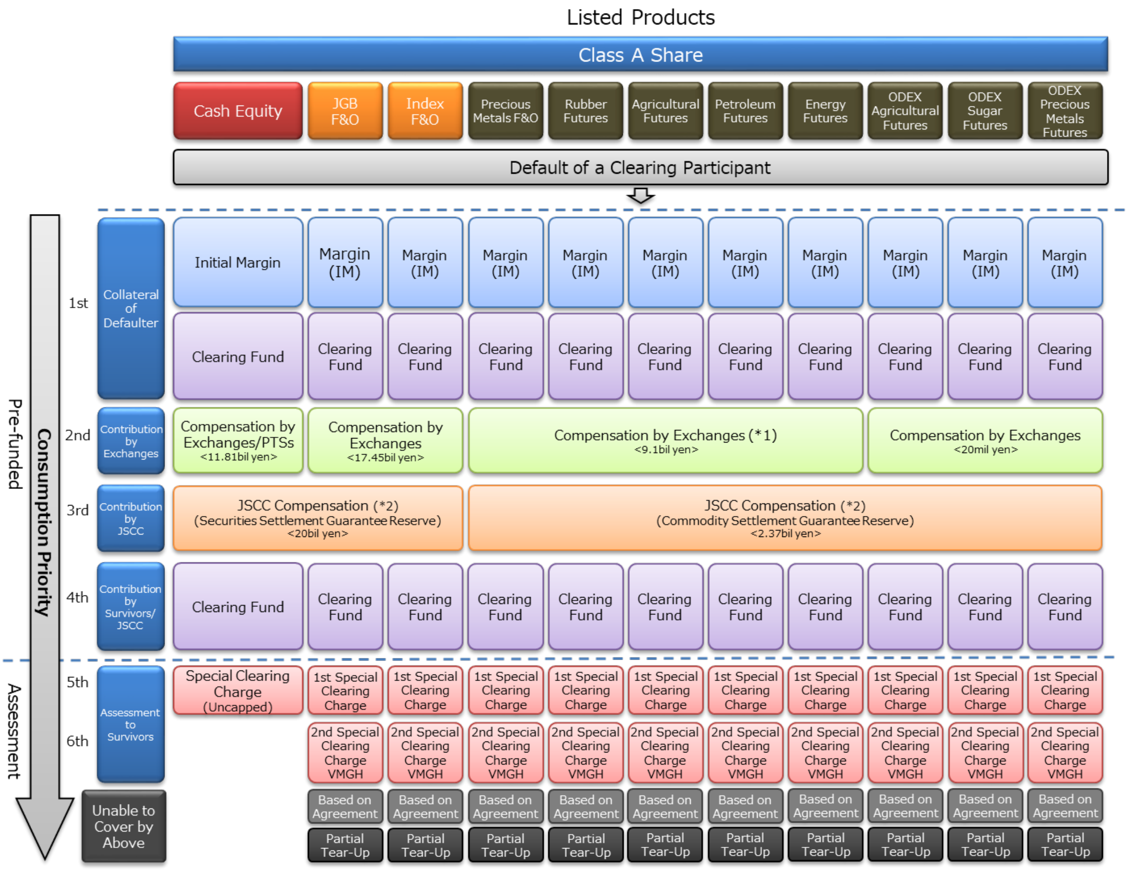
105 JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

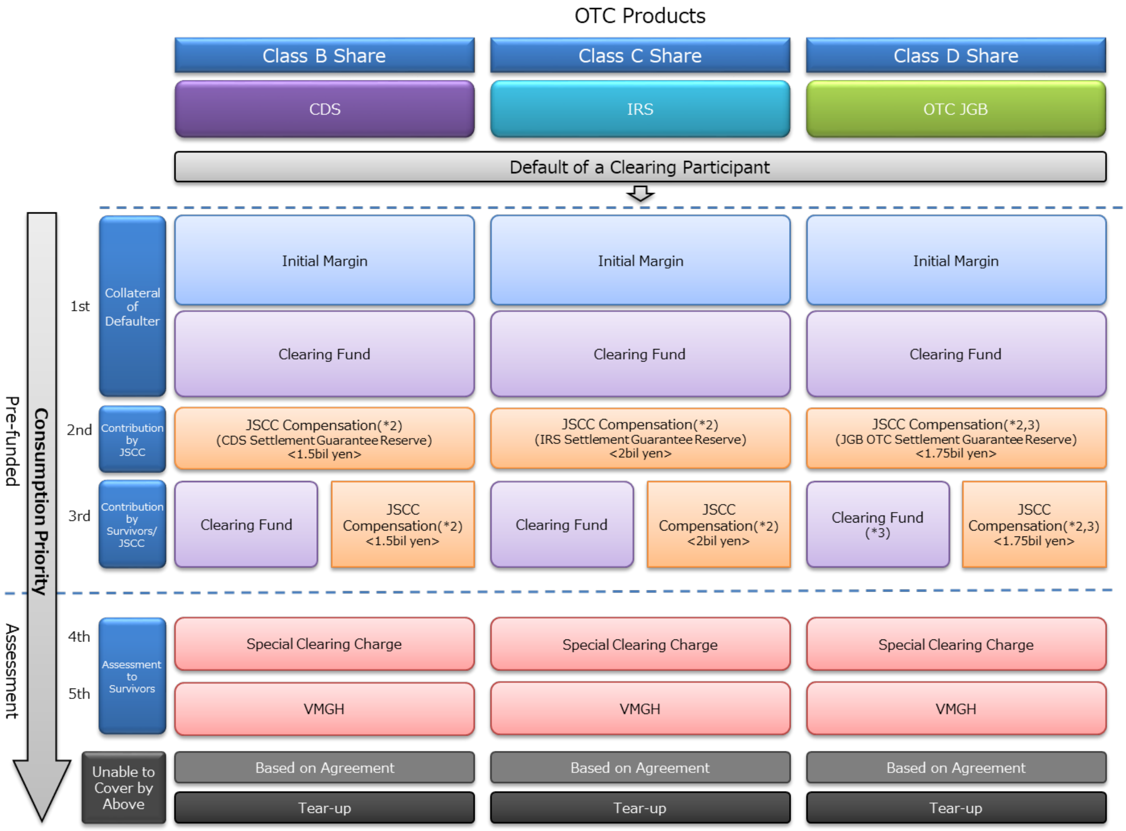
clearing fund deposited by non-defaulting Clearing Participants, to facilitate fund settlement. Additionally, JSCC has established a framework for liquidity via JGB repo transactions with Clearing Participants for OTC JGBs. See Principle 7 (Liquidity Risk) for further details.

<u>Composition of Loss Compensation Financial Resources</u>

JSCC has established a loss compensation framework for each Clearing Business, as outlined in below chart. This prevents losses from a single Clearing Business impacting the others.

<u>Principle 13 Key Consideration 1 IV-5: Loss Compensation by Financial Resources</u>





(*1) JPY 7 billion of the total JPY 9.1 billion is funded by OSE to compensate for losses excluding Energy Futures (for a limited period since June 2023).

(*2) The amount of the Settlement Guarantee Reserve to be borne by JSCC and the replenishment of any amount used is stipulated in the rules for each Clearing Business.

(*3) For OTC JGB, Contributions to compensate for losses from the Clearing Fund and Special Clearing Charge of non-defaulting Clearing Participants are allocated separately according to the classification of either trust bank Clearing Participants' trades for trust or non-trust trades. Allocation of contribution to trades for trust will be determined based on the ratio of underlying transactions for trust to the entire position of the defaulting Clearing Participant. See (3) OTC JGB Loss Compensation for details.

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

(1) Listed Products Loss Compensation

For the Cash Products and Listed Derivatives 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 deposited for its proprietary book (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[106].

3) Contribution from JSCC

- JSCC contributes a certain amount of its stockholder's equity as financial resources for loss compensation. Upon consumption of JSCC's contribution, it would be subject to replenishment. Required actions for replenishment are specified in the Recovery Plan.
- Should the replenishment of capital be difficult, JSCC has an arrangement in place for required financing with JPX, its parent company.

4) Clearing Fund contributions from non-defaulting Clearing Participants

- Non-defaulting Clearing Participants Clearing Fund contributions are consumed on a pro rata basis according to the risk amount of each participant.
- When an auction is held to dispose of a defaulting Clearing Participant's positions, the clearing fund of the Clearing Participant that wins the default auction would be used after the clearing fund of other Clearing Participants.
- 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 for Cash Products Clearing Business, and after the Capped Period ends, for the Listed Derivatives Clearing Business. To address credit risk during the Capped Period, JSCC calculates the required clearing fund amount for each non-defaulting Clearing Participant every day, and if the required Clearing Fund amount for any day exceeds the required Clearing Fund amount immediately before the first default, JSCC will request a deposit of the default contingent margin in the amount equal to such excess from the non-defaulting Clearing Participant. The default contingent margin is a "defaulter pay" type collateral to be used as loss compensation financial resources upon default of the Clearing Participant that deposited it during the Capped Period.

5) Additional contribution from non-defaulting Clearing Participants

- In the Cash Products Clearing Business, 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 borne by each Clearing Participant holding the Cash Products Clearing Qualification on a pro rata basis, based on their relevant clearing fund requirements.
- In the Listed Derivatives Clearing Business, if the loss resulting from a Clearing Participant default exceeds the sum of all the loss compensation financial resources described above, the non-defaulting Clearing Participants are required to cover any remaining losses by an additional contribution called a "First Special Clearing Charge." The required amount of the First Special Clearing Charge is calculated separately for each Clearing Qualification, and contributed by the Clearing Participants holding such qualification on a pro rata basis, based on the required Clearing Fund amount immediately before the first default in the Capped Period. The First Special Clearing

[106] When JSCC deems that a Holiday Clearing Participant caused a settlement failure with respect to its Holiday Trading, the "Holiday Trading Reserve" (a contribution of the operator of the Holiday Trading market at which such Holiday Clearing Participant participated in the trading), would be used to cover the loss arising from that settlement failure before this reserve.

Charge is capped at three times of the required Clearing Fund amount immediately before the first default during the Capped Period.

6) Variation Margin Gains Haircutting

- In the Listed Derivatives Clearing Business, if the loss resulting from a Clearing Participant default exceeds the sum of all other loss compensation financial resources, the non-defaulting Clearing Participants are required to cover any remaining losses by an additional contribution, called a "Second Special Clearing Charge". The required amount of the Second Special Clearing Charge is calculated separately for each Clearing Qualification, and contributed by the non-defaulting Clearing Participants holding such qualification, whose total Variation Margin are in the money from the default date (VM receiver), according to the accumulated gains of their Variation Margin equivalent (receivables). The Second Special Clearing Charge is capped at the amount of such gains.

In the Listed Derivatives Clearing Service, if there is a possibility that the loss compensation financial resources up to the Second Special Clearing Charge are insufficient to cover the loss, Clearing Participants, JSCC and the market operators involved shall have a consultation on the countermeasures for the settlement of the loss.

When an agreement cannot be reached through consultation, JSCC shall decide that necessary portion of the default auction was unsuccessful, and effect early termination (Partial Tear-up) of the defaulted contracts that remain un-liquidated.

(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 house 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

- For each of the IRS and CDS Clearing Businesses, JSCC contributes a certain amount of its stockholder's equity as financial resources for loss compensation. JSCC contributes funds in this second tier, and the third tier (below). Upon consumption of JSCC's contribution, it would be subject to replenishment. Required actions for replenishment are specified in the Recovery Plan.
- Should the replenishment of its capital for the IRS or CDS Clearing Businesses be difficult, JSCC has an arrangement in place for required financing with JPX, its parent company.

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 Capped Period, such contributions are capped at the required Clearing Fund amount immediately preceding the initial 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, and the Clearing Fund contributions of the bid winning Clearing Participant will be consumed after the entire Clearing Fund contribution from all other Clearing Participants are consumed.
- 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. To cover credit risk during the Capped Period, JSCC calculates the required Clearing Fund for each non-defaulting Clearing Participant on a daily basis. If the required Clearing Fund exceeds the required Clearing Fund for the day immediately preceding the first default, JSCC will call for the additional amount as Default Contingent Margin. The Default Contingent Margin is a defaulter-pay type collateral to be used as financial resources to cover losses arising from the potential default of the Clearing Participant that deposited the Default Contingent Margin.

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. Therefore, the procyclical impact on Clearing Participants resulting from the additional contribution would be reduced.
- 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.

If there is a possibility that the loss compensation financial resources up to the Variation Margin Haircutting are insufficient to cover the loss, Clearing Participants and JSCC shall have a consultation on the countermeasures for the settlement of the loss.

When an agreement cannot be reached through consultation, all Cleared Contracts shall terminate involuntarily (Tear-Up).

If a defaulting Clearing Participant holds positions in foreign currency denominated IRS, the loss compensation financial resources are allocated for each currency[107]. The allocated loss compensation financial resources are applied in the order mentioned above, for each currency. If there is any surplus in the loss compensation financial resources allocated to each currency, the surplus will be re-allocated to other currencies.

If a defaulting Clearing Participant is using cross margining, the gain/loss from cross margined

[107] JSCC has suspended clearing of foreign currency denominated IRS since April 1, 2020.

JGB Futures and interest rate futures are covered by the loss compensation financial resources under the IRS Clearing Business. However, if a loss remains after the application of the loss compensation financial resources up to Tier 4, any remaining loss shall be allocated to IRS and JGB Futures according to the final loss from the position in JPY-denominated IRS and the position in cross margined JGB Futures and interest rate futures. After such allocation, any loss related to JPY-denominated IRS will be covered by Tier 5, with losses related to the position in JGB Futures and interest rate futures being covered according to the Listed Products Loss Compensation, described in (1) above.

(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 a certain amount of its stockholder's equity as financial resources for loss compensation. JSCC contributes funds in this second tier, and the third and fifth tiers (below). Upon consumption of JSCC's contribution, it would be subject to the replenishment. Required actions for replenishment are specified in the Recovery Plan.
- Should the replenishment of its capital for the OTC JGB Clearing Business be difficult, JSCC has an arrangement in place for required financing with JPX, its parent company.

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 under this third tier is capped. Specifically, for defaults during the Capped Period, the cap shall be the required amount of Clearing Fund immediately preceding the first default. However, the amount of loss allocated to the Clearing Fund contributions related to Trust Losses under the third tier is capped at the amount allocated to each Trust Bank according to the underlying transactions. If any Clearing Fund contribution in respect of Trust Losses under this third tier remains unused, non-defaulting Clearing Participants holding Trust Transactions are required to contribute the unused amount in the fifth tier (below).

- 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, and the Clearing Fund contributions of the bid winning Clearing Participant will be consumed after the entire Clearing Fund contribution from all other Clearing Participants are consumed.
- 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. To cover credit risk during the Capped Period, JSCC calculates the required Clearing Fund for each non-defaulting Clearing Participant on a daily basis. If the required Clearing Fund exceeds the required Clearing Fund for the day immediately preceding the first default, JSCC will call for the additional amount as Default Contingent Margin. The Default Contingent Margin is a defaulter-pay type collateral to be used as financial resources to cover losses arising from the default of the Clearing Participant that deposited that Default Contingent Margin.

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 (above), 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 to cover any remaining losses after consumption of the third tier financial resources (above):
    - ➢ 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. Contributions from each non-defaulting Clearing Participant will be capped at their clearing fund requirement immediately preceding the first default during the Capped Period. Therefore, the procyclical impact on Clearing Participants resulting from the additional contribution would be reduced.
- If, in respect of Trust Losses, the "Special Clearing Charge" contribution under this fourth tier is less than the required Clearing Fund, further contributions of "Special Clearing Charge" up to the difference of the required Clearing Fund and the amount used in this fourth tier will be required in the sixth tier (below).

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 after use in the third tier (above).
- The sum total of the losses borne by the Clearing Fund contribution of non-defaulting Clearing Participants with Trust Transactions under the third tier (above) and this fifth tier 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, and the Clearing Fund contributions of the bid winning Clearing Participant will be consumed after the entire Clearing Fund contribution from all other Clearing Participants are consumed.

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 (above), 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 "Special Clearing Charge" remaining after use under the fourth tier (above). In such cases, the sum total of the "Special Clearing Charge" under the fourth tier (above) and this sixth tier allocated to each non-defaulting Clearing Participant shall be capped at the required amount of Clearing Fund immediately preceding the first default during the Capped Period. Therefore, the procyclical impact on Clearing Participants resulting from the additional contribution would be reduced.

7) Additional Loss Recovery

- 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 additionally compensate the loss, to a maximum of the relevant positive variation margin amount.

If there is a possibility that the loss compensation financial resources up to the "Additional Loss Recovery" are insufficient to cover the loss, Clearing Participants and JSCC shall have a consultation on the countermeasures for the settlement of the loss.

When an agreement cannot be reached through consultation, there will be a close-out netting of all unsettled positions (Tear-Up).

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, JSCC segregates Clearing Participant's proprietary positions/margin and the positions/margin of each Customer. Specifically, the positions/margin of each customer is 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 the positions of each customer from the default or insolvency of a Clearing Participant.

For Listed Derivatives, JSCC manages Clearing Participants' proprietary position/margin and customer positions/margin separately. JSCC manages customer's position/margin either on a gross basis in an omnibus account, or separately in individual customer accounts, as elected by each Clearing Participant.

When a Clearing Participant elects management in an omnibus client account, the positions/margin of multiple customers are managed under the relevant omnibus account at the JSCC, but the positions/margin of each customer are separately managed by the Clearing Participant. In such cases, the Clearing Participant reports the position details of each customer to JSCC, on a daily basis, and JSCC calculates the margin requirement for each customer based on this information. When a Clearing Participant elects for management in an individual client account, the positions/margin for each individual client is managed separately in each individual client account at JSCC.

For both omnibus client accounts and individual client accounts, a Clearing Participant may elect the management method at JSCC for each customer of a customer ("Indirect Customer"). If the customers of a Clearing Participant include an Affiliate of the Clearing Participant, then the Clearing Participant is required to segregate at JSCC, the positions/margin of the Affiliate from the positions/margin of non-Affiliated customers.

In addition, for Listed Derivatives, JSCC has the authority to request that Clearing Participants submit the positions/margin information of individual customers if required[108]. Through these frameworks, JSCC protects customer positions and related margin from the default or insolvency of a Clearing Participant. See the following "Transfer of Positions/Margin" section for further

[108] Rules on Margins, etc. for Futures and Option Contracts Article 26
Rules on Margins for Business of Assuming Commodity Transaction Debts Article 34

details.

For the OTC JGB Clearing Business, Clearing Participant's proprietary positions/margin, and the positions/margin of each customer, are managed on a gross basis. The positions/margin of each customer are segregated in individual customer accounts at JSCC, at all times, regardless of whether or not the customer is an Affiliate of the Clearing Participant. In terms of customer protection arrangements, the FIEA requires each Clearing Participant to conduct the segregated management of customer securities and cash.

For Cash Products, JSCC would conduct netting for all of a defaulting Clearing Participant's transactions. JSCC only receives collateral deposits from Clearing Participants, but not from customers. In such cases, the FIEA requires each Clearing Participant to conduct the segregated management of customer securities and cash. Also, the protection of a customers' securities and cash related to open positions 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 of the Financial Instruments Business Operators (*kinnyushohin-torihiki-gyosha*). In addition, 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.

For clearing of Listed Derivatives, CDS, and IRS, when a Clearing Participant defaults, customers 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[109]. 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[110].

For Listed Derivatives, CDS, and IRS clearing businesses, the transferee Clearing Participants may determine whether they accept a transfer of positions and margin based on an agreement with the transferring customer. When customer positions are not transferred to another Clearing Participant upon a Clearing Participant's default, the customer may claim against JSCC for the return of its initial margin remaining after any deduction of the amount of outstanding obligations related to the cleared contracts that the customer owes to the Clearing Participant.

For IRS, Customers (Affiliates and Clients) have the right to claim payment from JSCC as to

[109] 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
TOCOM Market Rules Article 90
Rules on Margin for Business of Assuming Commodity Transaction Debts Articles 41 and 43

[110] In addition to the position transfer framework upon Clearing Participant default, for CDS and IRS, a customer is allowed to transfer its positions to a Clearing Participant, or another customer. As part of the transfer, the relevant customer positions at the transferring Clearing Participant will be cancelled.

the “profit equivalent” which they should have received on and after the default determination date, when they choose not to transfer their positions to another Clearing Participant following a Clearing Participant default.

There are no customer positions/margins for transfer in relation to the Cash Products.

For OTC JGBs, currently no Clearing Participant has a non-Affiliated customer.

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 Listed Derivatives, when a Clearing Participant elects to manage customer margin through an individual client account, each customer’s margin is managed in separate accounts opened at JSCC[111]. Where a Clearing Participant further elects to manage individual client accounts for Indirect Customers, the margin for each Indirect Customer is managed in separate accounts opened at JSCC. However, if a Clearing Participant elects to manage customer margin through an omnibus account, the margin for multiple customers is managed on a gross basis. In each case, the right of a customer to request return of its own margin is specified in JSCC’s Business Rules[112]. These arrangements eliminate Fellow Customer Risk.

Japanese laws and regulations, JSCC’s Business Rules, and the subordinate rules[113] 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)[114]. JSCC regularly conducts reviews to ensure Clearing Participants are able to comply with this requirement.

For the CDS, IRS, and OTC JGB Clearing Businesses, customer margin is individually segregated in accounts for each customer[115] at JSCC, on a gross basis. Clearing Participants

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[111] Business Rules for the securities and similar contracts clearing business Articles 46-3 and 46-4
Business Rules on Business of Assuming Commodity Transaction Debts Articles 53 and 54

[112] Article 24 of the Rules on Margins, etc. for Futures and Option Contracts and Article 31 of the Rules on Margins for Business of Assuming Commodity Transaction Debts specify that each customer has a right to claim refund of initial margin (referred to as “Margin” in the Business Rules concerning listed derivatives) deposited with JSCC through a Clearing Participant, which is acting as an agent. The amount of initial margin which each customer has a right to claim refund for is specified as the amount of initial margin deposited with JSCC less the unfulfilled obligations pertaining to the cleared 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.

[113] FIEA Article 43-2
Rules on Margins, etc. for Futures and Option Contracts Article 24
CDA Article 210
Rules on Margins for Business of Assuming Commodity Transaction Debts Article 31

[114] Rules on Margins, etc. for Futures and Option Contracts Article 26
Rules on Margins for Business of Assuming Commodity Transaction Debts Article 34

[115] CDS Clearing Business Rules Article 59
IRS Clearing Business Rules Article 59
OTC JGB Clearing Business Rules Article 39

must deposit the full amount of customer margin with JSCC. JSCC has no rule that allows for the netting of positions recorded in a customer account, with those in the account of another customer using the same Clearing Participant, upon default of a customer.

Legal Basis for Customer Protection

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[116].

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 OTC JGBs, CDS, and IRS transactions in individual accounts, and those for Listed Derivatives in an omnibus account, or an individual client account, as elected by the Clearing Participant. 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, CDA, JSCC's Business Rules, and subordinate rules.

[116] FIEA Article 156-11-2 and CDA Article 181

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 Business Rules and their subordinate 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.

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, their subordinate rules and related rules (for Listed Derivatives, including 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 investment risk on a monthly basis within the comprehensive risk management operation 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 investment risk.

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

JSCC's Settlement Guarantee Reserve will never be used for any loss recovery other than those arising from Participant default, including any loss arising from business risks. [See Principle 13 (Participant-Default Rules and Procedures), Key Consideration 1 for loss compensation financial resources for Participant default settlement]

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.

For continuous provision of its critical services, as a core market infrastructure, even under an extreme stress risk event arising, JSCC has in place a Recovery Plan that sets out information and procedures required to realize recovery.

To realize the recovery according to the Recovery Plan, 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. In the Recovery Plan, JSCC details the measures that would be taken to address a situation, during a 6-month period, of losing revenues due to an unexpected event, including system failure or inappropriate operations. For example, where recovery of its own capital is difficult, JSCC has an arrangement in place for the required financing with JPX, its parent company.

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 (petty cash and bank deposits), JGBs, municipal bonds and government guaranteed bonds (all short-term), and other investments recognized as safe and liquid. These are of high quality and highly liquid, even in stressed market conditions. For bank deposits, the settlement accounts held by JSCC are entirely covered by the Japanese Deposit Insurance System, and are held at banks designated based on criteria specified by JSCC. (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 prescribes the means for securing liquid net assets funded by equity, in an amount equivalent to 6 months of operating expenses ("Minimum Secured Amount").

If JSCC were to experience a significant decline in liquid assets to the Minimum Secured Amount, or in another event that requires caution, JSCC has a range of options available, including:

- Negotiation with vendors to which JSCC outsources operation and services, for the postponement of payments and/or the discounting of outsourcing fees;
- Fundamental revision of expenses, including personnel expenses;
- Revision of Clearing Fees; and
- Revision of JSCC's Business Plan.

If it is, or is likely to be, extremely difficult for JSCC to secure liquid assets in an amount equal to meet the Minimum Secured Amount, or another event that triggers activation of its capital raising plan occurs, JSCC has the following options available:

- Execution of pre-arranged financing with the parent company;
- Discussions with stakeholders, such as the parent company and other shareholders, regarding a capital increase; and
- Reassessment and restructuring of JSCC’s businesses and operations.

JSCC reviews the Capital Recovery Plan at least once a year, conducting revisions as necessary. When conducting revisions, any significant revisions must be approved by the Board of Directors.

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 bank deposit, JGBs, municipal bonds and government guaranteed bonds, and other instruments recognized as having sufficient safety and liquidity, in accordance with JSCC's "Fund Management Handling Rules."

Bank deposits are held at banks designated based on criteria specified by JSCC. See Principle 4 (Credit Risk) for further details.

JGBs, municipal bonds 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 CSDs that are subject to the PFMI, and the central bank, as well as custodians that satisfy the criteria specified in JSCC's "Policies for Designation of Custodians of Posted Collateral."

Management of Custodian Risk

Commercial banks holding JSCC's own assets are limited to those which satisfy JSCC's criteria. Banks holding assets of Clearing Participants and their customers posted as collateral are limited to CSDs, subject to the PFMI, and the central bank, as well as custodians that satisfy the "Policies for Designation of Custodians of Posted Collateral."

The relevant criteria and guidelines require custodians, other than CSDs and the central bank, to be subject to regulatory supervision, have stable business processing capability, stable profitability, and a certain level of financial strength and credit.

JSCC regularly monitors all custodians from an operational risk perspective, and all custodians other than the central bank from a financial standing perspective.

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 or custodial facility for the purpose of collateral custody under JSCC's name, thus allowing for JSCC's prompt access to such assets when necessary.

US Treasuries, deposited for the IRS Clearing Business and the CDS Clearing Business, are held in JSCC's account with a custodian located in the U.S., and foreign government bonds (US Treasuries and government bonds of UK, Germany, and France), deposited for the Listed Derivatives Clearing Business, are held in JSCC's account with an overseas CSD (Euroclear Bank SA/NV), 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.

The legal basis for access to the overseas CSD (Euroclear Bank SA/NV) that is the custodian for US Treasuries and the government bonds of the UK, Germany, and France, has been confirmed in the course of the due diligence conducted on these entities as a part of the contract execution process.

The FIEA and CDA state 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, as described in Key Consideration 1 of this Principle, custodians are limited to CSDs that are subject to the PFMI, the central bank, and commercial banks satisfying the criteria set forth in the "Policies for Designation of Custodians of Posted Collateral." In the "Policies for Designation of Custodians of Posted Collateral," JSCC requires custodians to have stable profitability, a certain level of financial strength and credit, and stable operational processing capabilities.

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 custody 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. 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 "Fund Management Handling Rules" and "Policies for Management of Posted Collateral."

In accordance with these policies, JSCC limits the scope of eligible products for investment of collateral to ordinary deposits, lending to bank accounts of Trust Banks, and secured call loans on JGBs, and limits the scope of eligible products for investment of its own assets to bank deposits, JGBs, municipal bonds and government guaranteed bonds, and other instruments recognized as having sufficient safety and liquidity. Only banks satisfying certain criteria are used as banks accepting ordinary deposit, term deposit, or lending to bank accounts of Trust Banks. Thereby credit risk related to asset management is mitigated, to the extent possible[117].

These policies are publicly available on JSCC's website[118].

For the CDS and IRS Clearing Businesses, JSCC has a framework in place wherein JSCC invests collateral posted by Clearing Participants and Customers, and allocates any investment profits or losses to each Clearing Participant/Customer according to the amount of their invested collateral.[119]

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[117] There are no JSCC rules expressly setting forth any allocation of losses arising from any cause other than a Clearing Participant default, such as an investment loss, to the loss compensation financial resources related to Clearing Participant default for each Clearing Business. See Principle 13, Key Consideration 1 IV-5 Loss Compensation by Financial Resources for the loss compensation financial resources for Participant's default settlement.

[118] See JSCC's Fund Management Policy in "https://www.jpx.co.jp/jscc/en/company/fundmanagementpolicy.html" for details.

[119] There are no other JSCC rules expressly setting forth any allocation of losses to Clearing Participants/Customers arising from causes other than a Participant default.

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 operation. 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:

- Information Security Basic Policies;
- Information Security Countermeasure Standards; and

- Outsourcing Management Rules.

As part of its internal control framework to prevent operational errors, when establishing operational flows, JSCC uses Enterprise Risk Management (ERM) methods to identify potential risks and devises measures to prevent and control them in advance. The risks arising from each business are identified via the ERM framework on a regular and company-wide basis, and appropriate measures are planned to prevent their occurrence, based on frequency and severity. Through this process, when changing rules or launching a new clearing service, 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 launching a new clearing service 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 system failures and cyber security incidents;
- 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 Basic Policies;
- Information Security Countermeasures Standards;
- Outsourcing Management Rules; and
- Manual for Handling Incidents Suspected of Cyberterrorism.

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

Should an unexpected event occur, such as a system failure, 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.

Potential Single Points of Failure

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 "Business Continuity Basic Plan (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 Code of Conduct setting forth common standards for officers and employees, the arrangement concerning management of internal information and the Compliance Program, 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. Through the comprehensive risk management operation, JSCC manages operational risk. The Risk Management Policy, which provides for basic risk management policies, is validated 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 certain threshold set according to the features of each system. 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.

Physical Security

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 conduct ongoing reviews 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 Basic Policies" and "Information Security Countermeasure Standards" as internal rules, under which measures against physical vulnerability and threats have been implemented.

Information Security

JSCC's "Information Security Basic Policies" provides basic policies and a management framework for appropriately handling information assets. In the "Information Security Countermeasure Standards," which is based on the "Information Security Basic 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 Basic Policies" and "Information Security Countermeasure Standards," JSCC consulted with experts on industry standards.

The Division responsible for JSCC's information security confirms compliance conditions with the "Information Security Basic Policies" and "Information Security Countermeasure Standards" 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.[120]

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 "Business Continuity Plan (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 JSDA 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

[120] JSCC maintains a full clearing system at a backup data center located in the Kansai area to prepare for risks of a natural disaster affecting a wide area.

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 "Business Continuity Plan (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[121]. 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 fees that operate to overly limit participation.

Participation criteria broadly cover the following requirements:

- Management Structure;
- Financial Requirements[122]; and
- Business Structure.

The participation criteria are stipulated in the Business Rules of each Clearing Business and have been approved by the JFSA or the Ministry of Agriculture, Forestry and Fisheries / the Ministry of Economy, Trade and Industry. This approval is based on the FIEA's and CDA's prohibition of discriminatory treatment, and affirms the open access which the criteria provide[123]. 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

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[121] Business Rules for the securities and similar contracts clearing business Chapter 2
Business Rules on Business of Assuming Commodity Transaction Debts Chapter 2
CDS Clearing Business Rules Chapter 2
IRS Clearing Business Rules Chapter 2
OTC JGB Clearing Business Rules Chapter 2

[122] There is no financial requirement for the ETF Special Clearing Qualification (i.e., the Clearing Qualification to make an asset management company a Clearing Participant under the clearing service related to the settlement of ETF creation and redemption). When an ETF Special Clearing Participant is unable to perform an ETF creation/redemption, the unperformed obligations related to such creation/redemption shall become invalid retroactively upon the time of the application for clearing. So, JSCC bears no credit risk from ETF Special Clearing Participants.

[123] FIEA Article 156-9
CDA Article 177

the criteria to feature minimum and sufficient requirements for maintaining the stability and efficiency of its Clearing Businesses.

Participation in the Cash Products and Listed Derivatives 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, Commodity Futures Trading Firms, banks, or insurance companies. JSCC has established eligibility criteria based on 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. 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[124].

[124] Business Rules for the securities and similar contracts clearing business Chapter 2, Section 5
Business Rules on Business of Assuming Commodity Transaction Debts Chapter 2, Section 5

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. The Disciplinary Measures Assessment Committee Rules stipulates that a committee member having any special interest in an agenda item is not allowed to participate in the relevant deliberation.

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 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.

CDS Clearing Business Rules Chapter 2, Section 4
IRS Clearing Business Rules Chapter 2, Section 6
OTC JGB Clearing Business Rules Chapter 2, Section 4

Principle 19: Tiered Participation Arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

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:

- Cash Products and Listed Derivatives Clearing Business: Customers (including Indirect Customers) of Clearing Participants, Trading Participants of Exchanges (non-JSCC Clearing Participants) and customers (including Indirect Customers) of Trading Participants[125]
- CDS Clearing Business: Affiliates of Clearing Participant
- IRS Clearing Business: Customers of Clearing Participant[126]
- OTC JGB Clearing Business: Affiliates of Clearing Participant

(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 Cash Products and Listed Derivatives Clearing Business state that, when JSCC requests, a Clearing Participant must provide information relating to the position of Indirect Participants, allowing JSCC to maintain an understanding of each Indirect Participant's positions[127]. For the Listed Derivatives, the Clearing Participants are allowed, under the rules, to elect for the management of each Customer, or Indirect Customer, in individual client accounts. In this case, JSCC has full disclosure of the positions of the Customers and Indirect Customers[128].

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[125] Customers of the Cash Products and Listed Derivatives Clearing Business include both Affiliates of Clearing Participants and non-Affiliates.

[126] Customers of the IRS Clearing Business include both Affiliates of Clearing Participants and non-Affiliates.

[127] Business Rules for the securities and similar contracts clearing business Article 40
Contract for Commissioning Clearance Article 16
Rules on Margins, etc. for Futures and Options Contracts Article 26
Business Rules on Business of Assuming Commodity Transaction Debts Article 44
Contract for Commissioning Clearance Article 21
Rules on Margins for Business of Assuming Commodity Transaction Debts Article 34

[128] Business Rules for the securities and similar contract clearing business Articles 46-3 and 46-4

When a Clearing Participant elects for the management of its Customers using an omnibus client account, the Clearing Participant is required to report the position details to JSCC, for each customer or Indirect Customer, on a daily basis, according to the customer position management style. In both cases, if a client's positions are considered to be excessive, JSCC may request that the Clearing Participant report additional information relating to the position, such as the margin requirement related to the position, the margin deposit status concerning that position, and the Clearing Participant's status of management of the relevant customer or Indirect Customer. If, despite JSCC's request, the Clearing Participant fails to submit this additional information, JSCC may increase the Initial Margin requirement for the relevant Clearing Participant, or issue an instruction to reduce the position[129]. Thereby, JSCC has effective knowledge of the positions of each Indirect Participant.

The Business Rules and subordinate rules for JSCC's CDS, IRS, and OTC JGB 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[130].

(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.

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

Business Rules on Business of Assuming Commodity Transaction Debts Articles 53 and 54

[129] Business Rules for the securities and similar contracts clearing business Article 21-2.
Business Rules on Business of Assuming Commodity Transaction Debts Article 22

[130] CDS Clearing Business Rules Article 59
IRS Clearing Business Rules Article 59
OTC JGB Clearing Business Rules Article 39

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 multiple members, including lawyers, academics, and other experts, and maintains independence from JSCC.

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.
- BOJ, as a Fund Settlement Bank for money settlement and a custodian of JGB settlement and collateral.
- Euroclear Bank SA / NV as custodian for foreign government bonds (US Treasuries, government bonds of UK, Germany and France)
- DTCC Data Repository (U.S.) LLC, as a trade repository of trade information under CFTC Regulations for the IRS and CDS Clearing Businesses and a trade repository of trade information under OSC regulations and AMF regulations for the IRS Clearing Business.
- Hong Kong Trade Repository ("HKTR"), an OTC derivatives trade repository operated by the Hong Kong Monetary Authority, as an organization to which trade information shall be reported under the SFO for the IRS Clearing Business.
- DTCC Data Repository (Japan) K.K., as a trade repository of trade information under the Financial Instruments and Exchange Act for the IRS and CDS Clearing Businesses.

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 maintained by JSCC are with Japanese FMIs, except for Euroclear Bank SA / NV, DTCC Data Repository (U.S.) LLC and HKTR, and are implemented under Japanese law. Links with Euroclear Bank SA / NV are implemented under the laws of the United Kingdom and Belgium. Links with DTCC Data Repository (U.S.) LLC are implemented under the laws of the United States. Links with HKTR are implemented under the laws of Hong Kong.

Euroclear Bank SA / NV is an overseas CSD subject to the PFMI, and its legal basis for provision of appropriate protection to FMI was confirmed as part of the due diligence conducted in the course of the contract execution.

DTCC Data Repository (U.S.) LLC is registered as a Swap Data Repository ("SDR") under

CFTC Regulations and is also authorized as a trade repository service provider by the regulatory authorities of the provinces of Canada, and thus is confirmed to have a well-founded legal basis providing appropriate protection to FMIs.

HKTR is an OTC derivatives trade repository operated by the Hong Kong Monetary Authority under the Exchange Fund Ordinance, and is confirmed to have a well-founded legal basis providing appropriate protection on 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

Principle 21: Efficiency and Effectiveness

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 Listed Products Management Committee, CDS Management Committee, IRS Management Committee, and OTC JGB Management Committee. These committees are composed of the members, including those from Clearing Participants, and are consulted with regarding major clearing/settlement frameworks, operational processing frameworks, and clearing service 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 clearing service 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 contribute to sustainable development of the markets by improving the efficiency, serviceability and safety of the markets as post-trade processing infrastructure."*

JSCC has defined 2 basic policies to achieve its Corporate Philosophy, namely "Reinforcement of Basic Functions as CCP," "Offering Clearing Services Responsive to New Needs."[131]

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

[131] https://www.jpx.co.jp/jscc/en/company/philosophy.html

quarterly-basis to senior management and on at least an annual-basis to the Board of Directors, 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 business management to systematically manage various risks. 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) Clearing Business concerning Cash Products and Listed Derivatives

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 the CDS Clearing Business, JSCC processes applications for clearing from Clearing Participants via the Trade Information Warehouse provided by DTCC Deriv/SERV LLC.

For the IRS Clearing Business, JSCC processes applications for clearing from Clearing Participants through MarkitWire provided by MarkitSERV Limited, the electronic trading platform provided by Bloomberg Tradebook Japan Limited, and VCON (Voice Confirmation) provided by Bloomberg Finance L.P.

(3) OTC JGB Clearing Business

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 Clearing Business concerning Cash Products and Listed Derivatives through commercial banks, JSCC processes the transfer of funds through the firm banking system based on Japanese Bankers Association procedures.

JSCC processes payment/receipt of funds in non-JPY currencies, for the settlement under the IRS Clearing Business, through commercial banks using the SWIFT financial messaging service.

Procedures/Standards for Communication with CSD

(1) 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 ISO20022XML message, provided by BOJ.

(2) 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

Principle 23: Disclosure of Rules, Key Procedures, and Market Data

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.

Business Rules

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 eligible for clearing 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.

General Information

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

- JSCC's background, company overview, and corporate philosophy;
- Governance;
- Risk Appetite Statement;
- Clearing Participant criteria and list of Clearing Participants;
- Clearing business framework;
- Details on eligible collateral, custody and investment status;
- Margin, Clearing Fund, and loss compensation framework;
- Participant default procedures;
- Statistical Information; 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.

To promote disclosure to its Clearing Participants, JSCC distributes a "Risk Profile Report" which contains key information related to risk management, including the status of collateral deposited by Clearing Participants and the status of the adequacy of loss compensation financial resources.

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 Listed Products Management Committee, the CDS Management Committee, the IRS Management Committee, and the OTC JGB Management Committee, which are composed of the members including those from Clearing Participants, and conduct consultation procedures, including public disclosure of an outline of the revisions and publication of details of rule revisions on JSCC's website[132].

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 also publishes on its website, quantitative information pursuant to the "Public quantitative disclosure standards for central counterparties" published by CPMI-IOSCO.

Additionally, 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.

[132] To consider fee reduction of cash products clearing, JSCC consulted with Cash Product Clearing Participants at the Listed Products Management Committee meeting, and revised the fee structure from Oct. 1, 2021.

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 system (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

https://www.jpx.co.jp/jscc/en/rule.html

JSCC Management and Financial Information

https://www.jpx.co.jp/jscc/en/company/management-financial-information-2.html

JSCC Company Profile

https://www.jpx.co.jp/jscc/en/company/profile.html

JSCC Clearing Qualification Criteria and List of Clearing Participants

https://www.jpx.co.jp/jscc/en/participant.html

JSCC Statistics

- Listed Products
  https://www.jpx.co.jp/jscc/en/listed_products.html

- Japanese Government Bonds
  https://www.jpx.co.jp/jscc/en/jgbcc.html

- Credit Default Swaps
  https://www.jpx.co.jp/jscc/en/credit_default_swap.html

- Interest Rate Swaps
  https://www.jpx.co.jp/jscc/en/interest_rate_swap.html

JSCC Clearing Fees

- Listed Products (Cash Products)
  https://www.jpx.co.jp/jscc/en/cash/cash/fee.html

- Listed Products (Listed Derivatives)
  https://www.jpx.co.jp/jscc/en/cash/futures/fee/derivativesfee.html

- Japanese Government Bonds
  https://www.jpx.co.jp/jscc/en/cash/jgbcc/fee.html

- Credit Default Swaps
  https://www.jpx.co.jp/jscc/en/cash/cds/fee.html

- Interest Rate Swaps
  https://www.jpx.co.jp/jscc/en/cash/irs/fee.html

JSCC Clearing & Settlement

https://www.jpx.co.jp/jscc/en/cash.html

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

https://www.jpx.co.jp/english/

Osaka Dojima Exchange, Inc. (ODEX)

https://www.odex.co.jp/english/index.html

Financial Instruments and Exchange Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4405

Cabinet Office Ordinance on Financial Instruments Clearing Organization, etc.

https://www.japaneselawtranslation.go.jp/en/laws/view/3449

Comprehensive Guidelines for Supervision of Financial Market Infrastructures

https://www.fsa.go.jp/common/law/202206.pdf

Commodity Derivatives Act (CDA)

https://www.japaneselawtranslation.go.jp/en/laws/view/4290

Ordinance for Enforcement of the Commodity Derivatives Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4291

Basic Guidelines on Supervision of Commodity Clearing Organizations (Japanese)

https://www.maff.go.jp/j/shokusan/syoutori/dealing/attach/pdf/hourei-6.pdf

Companies Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4481
https://www.japaneselawtranslation.go.jp/en/laws/view/4482

Civil Code

https://www.japaneselawtranslation.go.jp/en/laws/view/4314
https://www.japaneselawtranslation.go.jp/en/laws/view/4275

Act of Recognition of and Assistance for Foreign Insolvency Proceedings

https://www.japaneselawtranslation.go.jp/en/laws/view/3780

Deposit Insurance Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4391

Trust Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4453

Banking Act

https://www.japaneselawtranslation.go.jp/en/laws/view/4498

Act on Book-Entry Transfer of Company Bonds, Shares, etc.

https://www.japaneselawtranslation.go.jp/en/laws/view/4436

Bank of Japan

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

Bank of Japan Act

https://www.japaneselawtranslation.go.jp/en/laws/view/3788

The Bank of Japan Policy on Oversight of Financial Market Infrastructures

https://www.boj.or.jp/en/paym/outline/pay_os/data/rel130312a.pdf

Rules on Current Deposit Account (Japanese)

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

Japan Securities Depository Center, Inc.

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

Japan Securities Dealers Association

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

The Center for Financial Industry Information Systems (FISC)

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

Principles for Financial Market Infrastructures

https://www.bis.org/cpmi/publ/d101a.pdf

Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology

https://www.bis.org/cpmi/publ/d106.pdf

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

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

European Market Infrastructure Regulation (EMIR)

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012R0648

The Central Counterparties (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2018

https://www.legislation.gov.uk/uksi/2018/1184/contents/made

Markets in Financial Instruments Directive

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0065

Markets in financial instruments regulation

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014R0600

Commodity Exchange Act

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

CFTC Regulation

https://www.ecfr.gov/current/title-17/chapter-I

Australian Corporations Amendment (Central Clearing and Single-Sided Reporting) Regulation 2015 -F2015L01411

https://www.comlaw.gov.au/Details/F2015L01411

Australian Corporations Regulations 2001-F2017C00162

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VI. Glossary

AMF	Autorité des Marchés Financiers
API	Application Programming Interface
BCP	Business Continuity Plan
BOJ	Bank of Japan
CB	Convertible Bonds
CCO	Chief Compliance Officer
CCP	Central Counterparty
CDA	Commodity Derivatives Act
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
ETP	Electronic Trading Platform
FBOT	Foreign Board of Trade
FINMA	Swiss Financial Market Supervisory Authority

FIEA	Financial Instruments and Exchange Act
FISC	The Center for Financial Industry Information Systems
FMI	Financial Markets Infrastructure
FOS	Fund Only Settlement
HKTR	The Over-the-counter Derivatives Trade Repository of the HKMA
HKMA	Hong Kong Monetary Authority
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
JCCH	Japan Commodity Clearing House Co., Ltd.
JPX	Japan Exchange Group, Inc.
JPX Market Innovation & Research	JPY Market Innovation & Research, Inc.
JPY	Japanese Yen
JSCC	Japan Securities Clearing Corporation
LIBOR	London Interbank Offered Rate
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets in financial instruments regulation
MTF	Multilateral Trading Facility
ODEX	Osaka Dojima Exchange, Inc.
OSC	Ontario Securities Commission
OIS	Overnight Index Swap
OSE	Osaka Exchange, Inc.
OTC	Over the Counter
OTF	Organised Trading Facility
PFMI	Principles for Financial Market Infrastructure
POMA	Post Offset Margin Amount
PTS	Proprietary Trading System
REIT	Real Estate Investment Trust
RPF	Risk Parameter File
RTGS	Real-Time Gross Settlement
SDR	Swap Data Repository
SEF	Swap Execution Facility
SFC	Securities and Futures Commission
SFO	Securities and Futures Ordinance
SSS	Securities Settlement System
STP	Straight Through Processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TCCCP	Third Country CCP
TCP	Transmission Control Protocol
TOCOM	Tokyo Commodity Exchange, Inc.
TONA	Tokyo Overnight Average rate
TR	Trade Repository

TSE	Tokyo Stock Exchange, Inc.
VaR	Value-at-Risk