

Principles for Financial Market Infrastructures Disclosure

(August 31, 2021 edition)



TFX TOKYO
FINANCIAL
EXCHANGE

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*In the sections of Principle 10, 11, 12 and 24, it is described as “not applicable”, since these principles do not apply to TFX’s business.

Responding institution:

Tokyo Financial Exchange Inc.

Jurisdictions in which the FMI operates:

Japan

Authorities regulating, supervising or overseeing the FMI:

Financial Services Agency of Japan and Bank of Japan

The date of this disclosure:

August 31, 2021

Other means of disclosure:

http://www.tfx.co.jp/about_tfx/fmi.html

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I. Executive Summary

Tokyo Financial Exchange Inc. (“TFX”) is a primary financial instruments exchange and clearing house in Japan, providing clearing services (*i.e.*, financial instruments obligation assumption business) for Interest Rate Futures contracts, Exchange FX Daily Futures contracts, Exchange Equity Index Daily Futures contracts (herein-after called “Daily Futures contracts”) and FX Clearing Futures contracts listed on TFX.

TFX is engaged in financial instruments obligation assumption business (herein-after called “Clearing Business”) upon obtaining an approval therefor from the Prime Minister of Japan under the Financial Instruments and Exchange Act (“FIEA”). TFX is under the supervision of the Financial Services Agency of Japan (“JFSA”) and is also subject to oversight by the Bank of Japan (“BOJ”).

The Committee on Payment and Settlement Systems-Board of the International Organization of Securities Commissions¹ (“CPSS-IOSCO”) published the Principles for Financial Market Infrastructures (“PFMI”) in April 2012. Based on the PFMI, the JFSA released Comprehensive Guidelines for Supervision of Financial Market Infrastructures - Clearing Organizations, Fund Clearing Organizations, Book-entry Transfer Institutions, and Trade Repositories (herein-after called “JFSA’s Guidelines”) in December 2013.

TFX, given the development in these new international regulations, recognizes importance of obtaining credibility as a CCP by properly performing its Clearing Business under an appropriate risk management framework and establishes a robust governance structure and comprehensive risk management framework conforming to the PFMI and JFSA’s Guidelines.

This document provides details to demonstrate TFX’s compliance with the PFMI in accordance with the Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology (“DFAM”). Unless otherwise specified, this disclosure is described based on the information as of the end of July 2021.

¹ Name at the time of the PFMI’s release. On September 1, 2014, the Committee on Payment and Settlement Systems (“CPSS”) was renamed to the Committee on Payments and Market Infrastructures (“CPMI”).

II. Summary of Changes since the Previous Update

TFX published its first disclosure on July 8, 2015 then updated it on August 31, 2017 and August 30, 2019. Major changes to be noted in this update from the last disclosure are as follows:

Item	Summary	Relevant Principles, etc.
FX Clearing Futures contracts	FX Clearing Futures contracts added to TFX Clearing Products.	Principle 4: Credit Risk, Principle 5: Collateral, Principle 6: Margin, Principle 7 Liquidity Risk Principle7: Liquidity Risk,
Loss compensation	New loss compensation framework adopted for FX Clearing Futures contracts.	Principle13: Participant-Default Rules and Procedures

In addition, from September 13, 2021, Gold ETF Daily Futures with Reset Date and WTI ETF Daily Futures with Reset Date will be added to TFX Clearing Products.

III. General Background of the FMI

Corporate Profile

TFX is a financial instruments exchange licensed to establish a financial instruments exchange market and is an approved clearing house² under the Financial Futures Trading Law enforced in 1989 and the FIEA enforced in 2007. TFX was established in April 1989, as a special corporation named Tokyo International Financial Futures Exchange (“TIFFE”) with the capital provided by major domestic and foreign financial institutions and started the trading and Clearing Business in June 1989.

In April 2004, TIFFE was reorganized and converted into a limited-liability and stock company in order to strengthen corporate governance as well as to enhance convenience and transparency of the market. In September 2007, as the FIEA was enforced, the company name was changed to the current name, Tokyo Financial Exchange Inc.

TFX launched Interest Rate Futures contracts in 1989, FX Daily Futures contracts in 2005, Equity Index Daily Futures contracts in 2010, FX Clearing Futures contracts in 2021 and started the Clearing Business for those products respectively. In 2020, TFX revised the contract

² Article 80 and 156-19, FIEA

specification of the equity index daily futures with tenor of maximum 15-month until expiry (i.e. with Reset Date).

TFX assumes an important clearing/settlement function in Japan's financial instruments market and provides clearing services with regard to all products listed on TFX.

TFX Clearing Products

Category		Details
Interest Rate Futures		Three-month Euroyen futures Options on Three-month Euroyen futures Six-month Euroyen LIBOR futures* (*Trading suspended for the time being) Over-Night Call Rate futures* (*Trading suspended for the time being)
Daily Futures	FX Daily Futures	Yen Currency Pairs 14pairs Large contracts 4pairs Non-Yen Currency Pairs 11pairs Large contracts 1pair
	Equity Index Daily Futures	Nikkei 225 Daily Futures with Reset Date DAX® Daily Futures with Reset Date FTSE 100 Daily Futures with Reset Date DJIA Daily Futures with Reset Date
FX Clearing Futures	FX Clearing Futures	Yen Currency Pairs 15pairs Non-Yen Currency Pairs 18 Pairs

In addition, from September 13, 2021, Gold ETF Daily Futures with Reset Date and WTI ETF Daily Futures with Reset Date will be added to TFX Clearing Products.

TFX Clearing Statistics

Products	URL
Interest Rate Futures contracts	https://www.tfx.co.jp/en/historical/ https://www.tfx.co.jp/t-clearfx/data.php
FX Daily Futures contracts	
Equity Index Daily Futures contracts	
FX Clearing Futures contracts	

Clearing Business

When a contract is executed between the Clearing Members, TFX automatically and immediately replaces it to the contracts between TFX and Clearing Members, by acting as the selling counterparty to the buying Clearing Member and the buying counterparty to the

selling Clearing Member. Thereupon, TFX acquires all the rights and assumes all the obligations of each Clearing Member relative to the other Clearing Member with respect to the contract, and pay/receive margins and settles the transaction as the counterparty to each Clearing Member. TFX has been performing such business as the Clearing Business approved under the FIEA. The obligations of the Clearing Members are assumed by TFX immediately following the transactions are executed between the Clearing Members. This framework drastically mitigates counterparty risks which might cause issues in OTC transactions.

Governance Structure

TFX establishes a robust governance structure as a major financial market infrastructure in Japan. TFX's Board of Directors is composed of three executive board members (one President and CEO, one Senior Managing Director and one Managing Director) as well as five non-executive board members. The Board of Directors makes decisions on important matters regarding fundamental management policy and business activities, and supervises the directors' performance of duties. TFX is a company with the Board of Auditors. The Board of Auditors is composed of one Standing Statutory Auditor and two Outside Statutory Auditors and monitors directors' performance of duties and submits an audit report to the shareholders' meeting in accordance with the Basic Policy for the Creation of Internal Control System ("Internal Control Policy").

The Market Operation Committee is composed of directors and officers of major Clearing Members and academic experts and can render opinions on request for advices from the Board of Directors on important matters in terms of financial instruments market operation. This framework enables TFX to reflect opinions and needs from market participants including Clearing Members. (*See*, Principle 2 "Governance" for further details.)

Risk Management Framework

TFX's Board of Directors has established the General Risk Management Policy, which specifically prescribes, major risks subject to management, the definition of risk management, risk management framework, and risk management method.

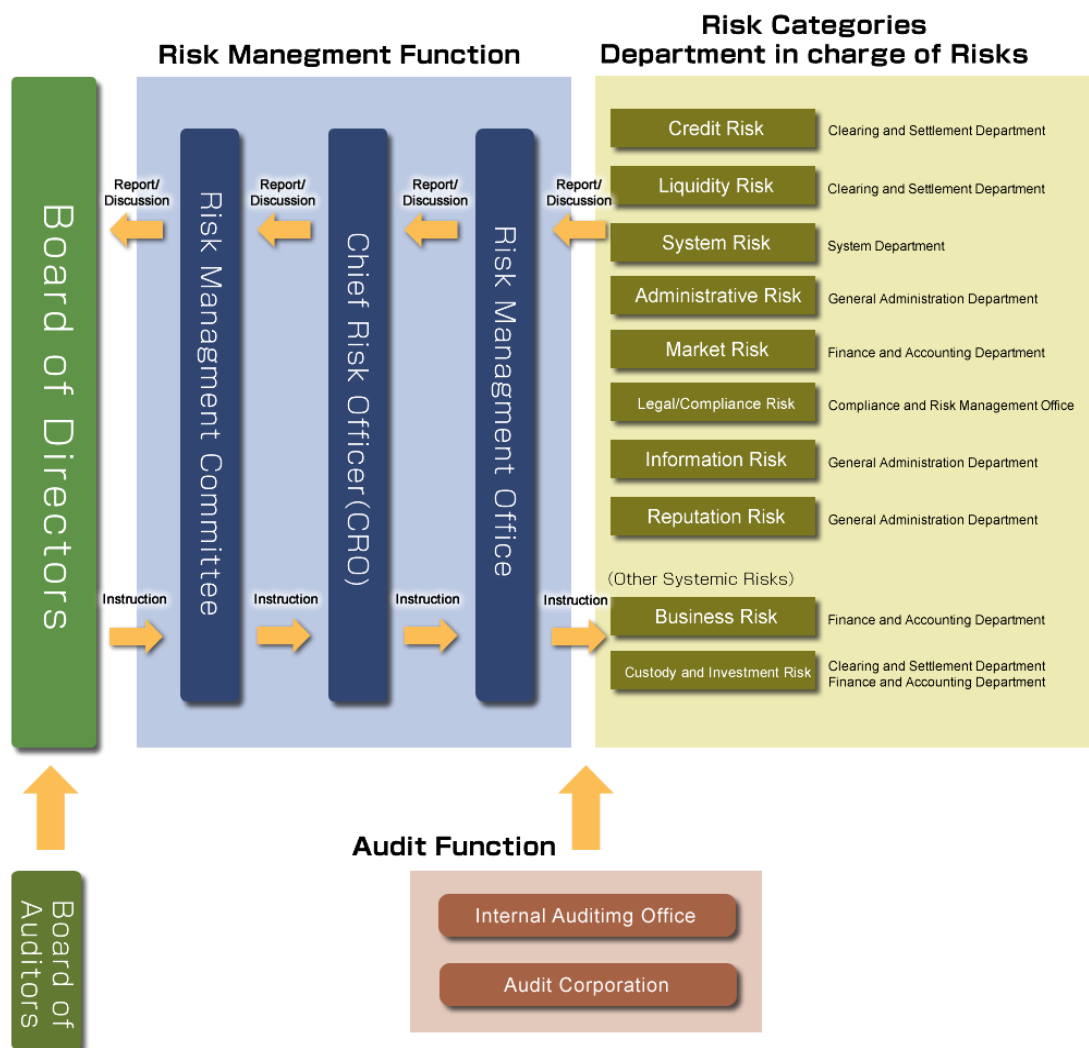
Furthermore, TFX's Board of Directors has established the Risk Management Committee, Chief Risk Officer ("CRO") who supervises risk management affairs and the Risk Management Office which conducts risk management operation.

The Risk Management Office compiles all the reports sent from the departments, each of which is in charge of the relevant risk management, and further reports to CRO the compiled result therefrom on a daily basis. CRO then makes a report monthly, quarterly and annually on them to the Risk Management Committee.

The Risk Management Committee has to deliberate important matters and proposes any agenda to the Board of Directors pursuant to the Rules of the Risk Management Committee and has to make quarterly and annual reports to the Board of Directors.

The Board of Directors decides on any important matters about the risk management and has to review the General Risk Management Policy, at least once a year, for any necessary amendments or revisions thereto.

Risk Management Framework



Legal Basis

TFX has been licensed as a clearing house under the FIEA and provides the Clearing Business in compliance therewith as well as with the laws related to Clearing Business (*e.g.*, FIEA, the Civil Code, the Companies Act, Cabinet Office Ordinance on Financial Instruments Clearing Organizations, etc.).

TFX prescribes its primary business rules in its Clearing Regulations and other major rules in accordance with the provision of FIEA. These rules have been approved by JFSA. In addition, a written undertaking that every Clearing Member has submitted to TFX provides that the Clearing Members shall comply with any and all rules of TFX, and that rights and obligations between and among TFX and the Clearing Members shall be governed and interpreted by the laws of Japan. These frameworks ensure legal certainty that the TFX rules are surely applicable to the subject matters involving the market participants.

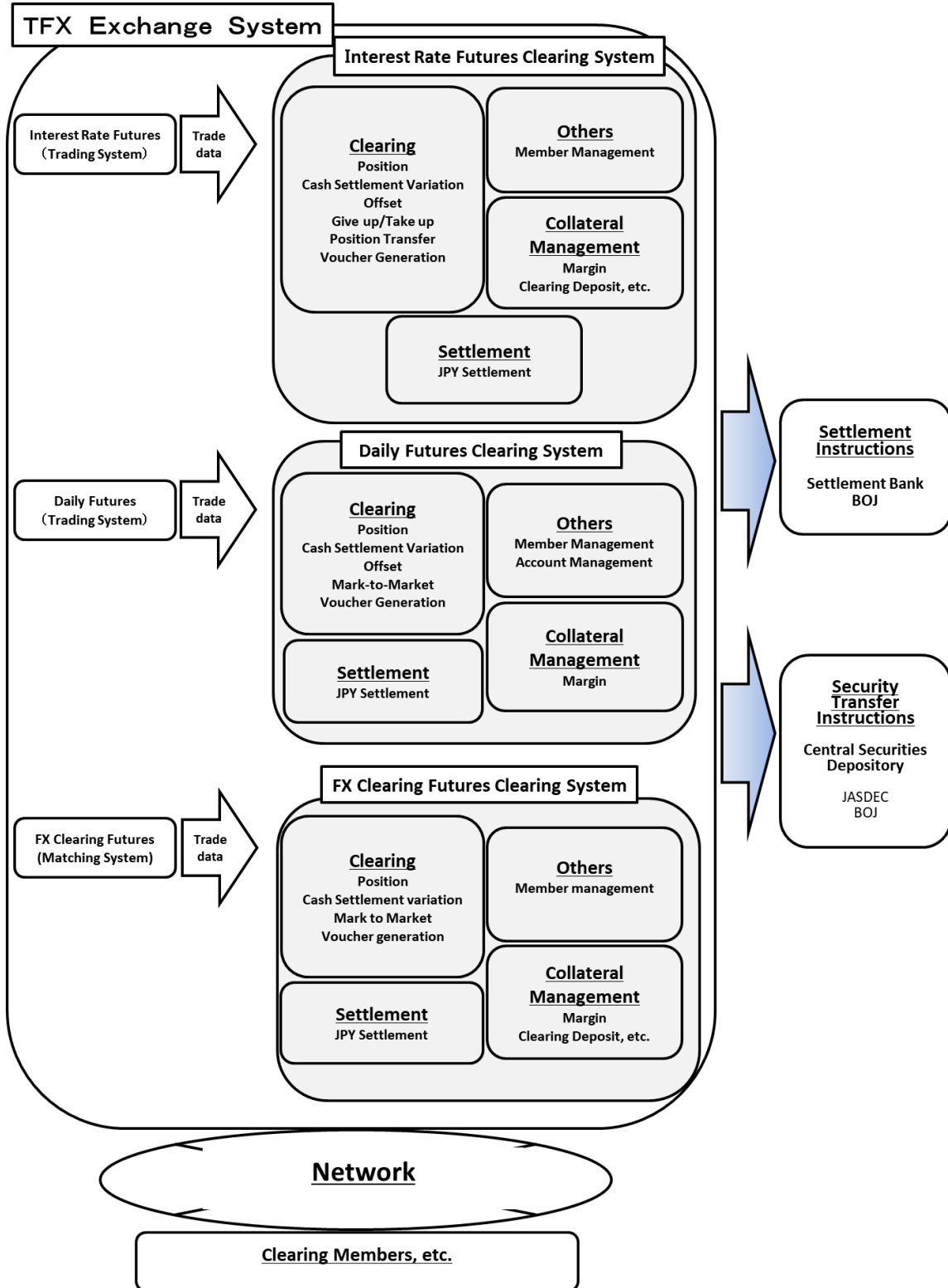
TFX identifies and verifies the possibility of conflict-of-law issues across different jurisdictions. Since some of Clearing Members are established in European Union (“EU”) countries, TFX has submitted European Securities and Markets Authority (“ESMA”) an application pursuant to provisions of the European Market Infrastructure Regulation (“EMIR”). Thus, TFX has been granted as a Third-Country CCP (“TC-CCP”) which is permitted to provide clearing services for the Clearing Members and trading institutions established within EU.

Some of TFX’s Clearing Participants are incorporated in the U.K. TFX made a submission to the Bank of England with respect to the recognition as a Third Country CCP to continue to provide services, to the Clearing Participants and trading facilities established in the U.K. Subsequently, TFX has obtained temporary recognition for the provision of services in the U.K. as a Third Country CCP.

TFX’s System

An entire structure and overview of TFX’s system is illustrated on the following page. TFX outsources development and operation of its clearing system to outside companies and properly controls them in accordance with the “Security Guidelines” and the “Policy and procedures to manage outsourced business operations”.

An Entire Structure and Overview of TFX's System



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

The following are material aspects which require legal certainty in TFX's business as a CCP.

- Arrangements for Clearing Business
- Arrangements for settlement finality
- Netting arrangements
- Collateral arrangements
- Arrangements for default procedures
- Arrangements for linkages with other FMIs

TFX does offer neither securities settlement nor Delivery Versus Payment ("DVP").

Arrangements for Clearing Business

TFX engages in Clearing Business in accordance with the FIEA and any and all other laws related to Clearing Business (Civil Code, Companies Act, Cabinet Office Ordinance on Financial Instruments Clearing Organizations, etc.) and under the supervision of regulatory authority ("JFSA"). TFX is compliant with the JFSA's Guidelines. TFX is also subject to oversight by BOJ.

TFX offers the Clearing Business based on the Clearing Regulations and other associated rules as stipulated in Article 156-7 of the FIEA. Clearing Members have to comply with the TFX rules as agreed by each Clearing Member in a written undertaking submitted to TFX.

Thus, TFX has secured legal certainty for arrangements for the Clearing Business.

Arrangements for Settlement Finality

The TFX rules clearly prescribe the cut-off time for both payment obligations and deposit of collateral. Settlements made by the cut-off time are considered to be final at the point in time where the payment process has completed. (*See* Principle 8 “Settlement Finality” for further details.)

Thus, the Clearing Members can clearly recognize the point at which their obligations are fulfilled.

Netting Arrangements

The Clearing Regulations have specific provisions related to close-out netting arrangements for credits and debts between TFX and Clearing Members in the case of a Clearing Member’s default. The FIEA also provides that such close-out netting arrangements shall prevail over general insolvency procedures.

Collateral Arrangements

TFX collateral related rules prescribe that the purpose of collecting margin from Clearing Members and their customers is to secure fulfilment of obligations with regard to their positions and that TFX shall hold the margin of the Clearing Members’ own proprietary positions and their non-proprietary positions separately.

In addition, Clearing Members' collateral and customers' collateral are segregated from TFX’s own assets, in compliance with the requirements of the FIEA.

Arrangements for Default Procedures

The TFX rules prescribe the procedures in the case of a Clearing Member’s default.

The Clearing Regulations prevail over general insolvency procedures because the FIEA³ provides that, in a case where insolvency proceedings have commenced in respect of a Clearing Member, the business rules set forth by the relevant Financial Instruments Clearing Organization shall determine and govern the calculation of the amount of its or the Clearing Member’s claim arising out of outstanding positions or other means of settlement in relation thereto. Thus, the legal certainty has duly been secured for arrangements for default procedures.

TFX also views a recovery or orderly wind-down in the event of FMI (CCP)’s default to be a matter requiring a high degree of legal certainty, so that TFX will take appropriate measures, following the international regulatory development in the future in this respect.

³ Article 156-11-2. 1, FIEA

Arrangements for Linkages with Other FMIs

TFX has linkage with BOJ and Japan Securities Depository Center, Inc. (“JASDEC”). (*See* Principle 20 “FMI Links” for further details.)

Key Consideration 2:

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

The TFX rules, procedures and contracts (including amendments) have been developed based on the adequate and sufficient legal analysis and, when necessary, upon legal consultation with external legal counsel, and their legal conformity with all relevant laws and regulations has been verified. Additionally, when TFX’s key rules are proposed to be amended, JFSA reviews and approves the amendment before the implementation, so that the conformity of the TFX rules with the applicable laws and rules are double-checked.

Furthermore, in respect of any proposed amendments to the rules that may have a significant effect on its Clearing Members, TFX hears opinions and comments from Clearing Members, the Market Operation Committee and the public, through discussions, consultations and public comments. By doing so, TFX ensures the clarity of its rules and avoids any misunderstandings of the concerned parties on the proposed amendments.

To date, no inconsistency has been identified in respect of the TFX rules, procedures or contracts with the applicable laws and regulations thereto.

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.

TFX explains to its Clearing Members and relevant authorities about the legal basis of its business when required or necessary. Also related rules and explanatory documents are publicly available on TFX’s website.

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.

Effectiveness of TFX’s Rules, Procedures, and Contracts

TFX clearly prescribes its basic rules for Clearing Business in the Clearing Regulations, in compliance with the FIEA. A written undertaking that every Clearing Member submits to TFX sets forth matters, *inter alia*, as follows:

- Clearing Members must comply with the TFX rules;
- Rights and obligations between TFX and Clearing Members are wholly governed by the laws of Japan; and
- All litigation between TFX and Clearing Members shall be subject to the jurisdiction of the Tokyo District Court in Tokyo, Japan.

The FIEA provides that, in the case of the Clearing Member’s default (herein-after such Clearing Member individually or collectively called “defaulting Clearing Member(s)”), the TFX rules prevail over general insolvency procedures as for any legal matters for the rights and obligations between a defaulting Clearing Member and TFX or other members.

When a Clearing Member is subjected to the insolvency procedures in a foreign jurisdiction the foreign insolvency procedures may have an effect in Japan only on and after the issuance of an order of recognition for such procedures by the Japanese court pursuant to the “Act on Recognition of and Assistance for Foreign Insolvency Proceedings.” The foreign insolvency proceedings may only be enforced on the defaulting Clearing Member’s assets located in Japan upon the Japanese court’s separate issuance of an order such as an administration order. Therefore, the insolvency procedures in a foreign jurisdiction commenced with respect to a defaulting Clearing Members has only a very limited effect.

As seen above, the TFX rules, procedures and contracts have a high degree of legal certainty not being void, reversed or suspended, and actions taken by TFX based on the TFX rules have never been challenged or questioned due to the legal uncertainty of the TFX rules.

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.

TFX identifies and reviews the risks arising from any potential conflict of laws across jurisdictions based on the latest information obtained from Clearing Members, law firms, and JFSA etc.

Since some of Clearing Members are established in European Union (“EU”) countries, TFX has submitted to ESMA an application based on Article 25-1 of the EMIR and are recognized as a Third Country CCP (“TC-CCP”).

Some of TFX’s Clearing Participants are incorporated in the U.K. TFX made a submission to the Bank of England with respect to the recognition as a Third Country CCP to continue to provide services to Clearing Participants and trading facilities established in the U.K. Subsequently, TFX has obtained temporary recognition for the provision of services in the U.K. as a Third Country CCP.

TFX conducts its Clearing Business only in Japan and does the business exclusively for products listed on its market. TFX accepts only Japanese Yen, as the settlement currency. Further, eligible securities, etc. deposited as collateral at TFX are limited to Japanese Government Bonds, stocks listed in Japan and Letter of Guarantee (“LG”)⁴. Thus, TFX considers that legal risk across multiple jurisdictions is highly limited.

In addition, TFX does not clear any product having a complicated risk profile such as CDS, etc.

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.

The FIEA and the JFSA’s Guidelines require a CCP to have sound and appropriate business operations in order to serve the objectives of ensuring the stability of financial system in Japan

⁴ FSA published notice to designate FX Clearing Futures contracts as Market transactions of derivatives using a LG as eligible securities, etc. and banks eligible to issue LG are limited to those designated by TFX among banks satisfying grading requirements set forth by “Cabinet Office Order on Financial Instruments Exchange, etc. (“qualified LG issuing banks”) and the contents of LG issued by such qualified LG issuing banks are subject to the Order and TFX rules and regulations.

and protecting investors, etc. In its Corporate Philosophy Statement, TFX specifies the following objectives to serve the public interest:

(1) to establish fair, reliable and convenient financial instruments markets as a public infrastructure and contribute to a sound development of financial and economic system in Japan; and

(2) to be an advanced and comprehensive financial exchange that consistently challenges to create a new value for market participants and establishes a robust management foundation.

Additionally, TFX formulates a medium-term management plan in accordance with the Corporate Philosophy Statement and sets forth an annual business plan every fiscal year based on the medium-term management plan.

Officers and employees of TFX conduct business activities in conformity with the Corporate Philosophy Statement, the medium-term management plan, the annual business plan and the Standard of Conduct.

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.

TFX is a limited-liability and stock company established under the Companies Act and a CCP which is subject to the supervision of JFSA under the FIEA.

TFX prescribes fundamental governance arrangements in the Articles of Incorporation to satisfy the requirements for a CCP under the FIEA and the JFSA's Guidelines, etc.

Governance Arrangements

TFX Board of Directors is composed of three executive directors (one President and CEO, one Senior Managing Director and one Managing Director) as well as five non-executive directors. The Board of Directors makes decisions on the basic management policy of TFX and on important affairs relating to its business operations, and supervises directors' performance of duties.

TFX is a company with the Board of Auditors. The Board of Auditors is composed of one Statutory Auditor and two Outside Statutory Auditors. The Board of Auditors inspects directors' performance of duties in accordance with the Internal Control Policy and submits an audit report to the shareholders' meeting.

The names and roles of the Committees that TFX sets are as follows:

(Self-regulatory Committee)

The Self-regulatory Committee makes decisions on self-regulatory operations, based on delegation from the Board of Directors.⁵

Committee members are selected from among directors by the resolution of the Board of Directors. Two of three directors are non-executive directors.

(Discipline Committee)

The Discipline Committee responds to inquiries from the Self-regulatory Committee and provides an opinion on matters regarding self-regulatory operations.

The Self-regulatory Committee assigns committee members who have a deep insight enough to make a fair judgment.

(Market Operation Committees)

TFX has the Wholesale Market Operation Committee and the Retail Market Operation Committee. The Committees respond to inquiries from the Board of Directors and provide opinions on important matters concerning the operations of financial instruments market. The Board of Directors assigns committee members from directors and officers of Clearing Members and experts capable of making a fair judgment about operations of financial instruments markets.

(Risk Management Committee)

The Risk Management Committee deliberates important matters with regard to risk management, including but not limited to those related to establishment of the General Risk Management Policy, and brings and reports the matters to the Board of Directors as required.

The Risk Management Committee is composed of the President and CEO, Senior Managing Director, Managing Director and Executive Officers and the heads of departments.

Disclosure of Governance Arrangements

TFX discloses the Articles of Incorporation that prescribe its governance arrangements and the Internal Control Policy on its website. TFX also discloses in its “Company Guide” the structures of the Board of Directors and the Board of Company Auditors as well as the company outline including its organisational chart.

⁵ It means operations that TFX conducts, as a limited liability and stock-company, to ensure fairness, transparency, and credibility in the markets. In particular, it refers to the operations such as assessment on Members’ transactions, inspection of Clearing Members and assessment on trading membership qualifications. The placement of the Self-regulatory Committee and its operations are subject to the FIEA.

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

Roles and responsibilities of the Board of Directors are set forth in the Companies Act, the Articles of Incorporation and the Rules for the Board of Directors. The Board of Directors not only determines matters regarding business operations of TFX but also supervises directors' performance of duties.

The Board of Directors receives reports regarding business activities and determines important matters as follows:

- Matters regarding management (the basic management policy, the medium-term management plan, the annual business plan, etc.)
- Matters regarding the operations of TFX markets (setting-up of or changes in major market systems, etc.)
- Matters regarding the execution of TFX business (investment in infrastructure such as system, important matters regarding risk management, etc.)
- Matters regarding directors and officers (the appointment and removal of the Representative Director and executive directors, etc.)
- Other Matters (important matters regarding the Internal Control System, etc.)

Managing Conflicts of Interest

In order to prevent a director from harming the interest of TFX for his or her own benefit, according to the Companies Act, when the director engages in a conflict-of-interest transaction, the director is required to obtain an approval from the Board of Directors while he or she cannot exercise his or her voting right at such resolution.

If an Auditor finds that a director engages in a certain misconduct, or is likely to engage in such conduct, or that there exists any incident in violation of laws and rules or the Articles of Incorporation or any other extremely unethical or inappropriate conduct, the Auditor will report them to the Board of Directors without delay and will further report the results of the investigation to a shareholders' meeting.

The Auditors annually review if there are any transactions involving conflicts of interest, when preparing an annual audit report.

Review of Performance of the Board of Directors

Performance of the Board of Directors is reported to the annual general shareholders' meeting as a part of the annual business report.

The performance of each director is reviewed and evaluated based on business performance reports presented by the relevant director to the Board of Directors, and such review and evaluation are taken into consideration by the Nominating and Compensation Committee in determining the compensation of directors and the nomination of candidates for directors.

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 Members

The FIEA requires a CCP to make its human resources composed of persons who "have sufficient knowledge and experience for conducting financial instruments obligation assumption service appropriately and certainly and have sufficient social credibility." In light of this requirement, the TFX Board of Directors nominates candidates for directors who have a wealth of experience and knowledge with regard to management, finance and law, in reference to the result of deliberation by the Nominating and Compensation Committee.

Directors are elected by resolution of a shareholder's meeting. The Board of Directors is composed of three executive board members and five non-executive board members.

Board Member Incentives

TFX sets a reasonable standard to determine the compensation for the Board members, enough to retain their incentives to fulfil their roles.

The Board of Directors determines annually the compensation to the directors based on the responsibility and performance of each director within the total amount approved by the shareholders' meeting and also referring to the result of deliberation at the Nominating and Compensation Committee.

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

TFX's senior management is composed of executive directors responsible for the execution of business. Their roles and responsibilities are determined by the Board of Directors as the business assignments to the respective executive directors.

The senior management is responsible for faithfully executing the business that they are in charge and improving the performance of the TFX business in accordance with the basic management policy, the medium-term management plan as well as the annual business plans.

The senior management also reports monthly TFX's financial condition and operational status to the Board of Directors and annually TFX's annual business report and financial results to the shareholders upon the Board of Directors' resolution.

Experience, Competency, and Integrity

TFX Board of Directors nominates candidates for directors who have a wealth of experience and knowledge with regard to management, finance and law. TFX's senior management has sufficient experience, competency and integrity required to accomplish CCP's operation and risk management.

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.

Comprehensive Risk Management Framework

TFX Board of Directors determines important matters regarding risk management such as an establishment of the General Risk Management Policy, an introduction of the Risk Management Committee and CRO.

The Board of Directors considers appropriate measures, if necessary, when it receives 1) a periodical report on risk management status and its assessment results and 2) a non-regular report on an occurrence of critical risk event such as defaults of Clearing Members or a significant system failure.

The Board of Directors also receives a report at least once a year on the results of validation of overall risk management framework, and provides necessary instructions to make the risk management system to work sufficiently, including but not limited to an instruction to review

the General Risk Management Policy. (*See*, Principle 3 “Framework for the Comprehensive Management of Risks” for further details.)

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.

Consideration of Stakeholders’ Interests

When TFX makes important decisions on its system design, rules, overall business strategy etc., it takes into account the interest of stakeholders such as Clearing Members etc.

TFX sets the Market Operation Committee as an advisory committee pursuant to the Articles of Incorporation. The Market Operation Committee, which is composed mainly of Clearing Members, may express an opinion to the Board of Directors in response to their inquiry.

A wide range of opinions are also collected by soliciting public comments before establishing new framework and making significant rule changes.

Disclosure

TFX releases and discloses its key decisions such as the medium-term business plan, major rule revisions and others via its website.

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 the FMI

TFX specifies the risks which it is mainly exposed to, such as credit risks, liquidity risks, system risks, administrative risks, market risks, legal compliance risks, information risks, and reputation risks. TFX has built a framework for the risk management in response to the

characteristics of each risk.

Systemic risk, business risk, and custody and investment risk which are written in Principle 2 of PFMI, are also managed as compounded risk of those written above.

Comprehensive Risk Management Framework

TFX Board of Directors has established the General Risk Management Policy. Major risks subject to management, the definition of risk management, risk management framework, and risk management method are specifically provided in this Policy.

TFX has the following basic policies regarding its risk management and these policies are reviewed at least once a year or when appropriate.

- the General Risk Management Policy
- the Credit Risk Management Policy
- the Liquidity Risk Management Policy
- the System Risk Management Policy
- the Administrative Risk Management Policy

Furthermore, the TFX Board of Directors has established the Risk Management Committee, as well as CRO who heads risk management, and the Risk Management Office which conducts risk management operations.

The department responsible for each risk, stated in the General Risk Management Policy, measures, monitors and manages the assigned risk, and makes reports on the results therefrom to the Risk Management Office.

The Risk Management Office compiles these reports submitted from each department and makes a daily report to CRO, who, in turn, makes a report monthly, quarterly and annually to the Risk Management Committee.

In accordance with the Rules of Risk Management Committee, the Risk Management Committee from time to time deliberates any necessary matters and proposes any agenda to the Board of Directors for further deliberation, and makes quarterly and annual reports to the Board of Directors.

The Board of Directors determines any important matters relating to risk management and verifies the adequacy of risk management framework at least once a year.

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.

Provision of Relevant Information

TFX makes available to the Clearing Members and Trading Members the following information to enable them to manage and control by themselves the risks that would otherwise be brought to TFX:

- For Clearing Members, a real-time contract information of a Trading Member(s) who settles their contracts with the relevant Clearing Member;
- For Clearing Members, updated information about margin requirements and mark-to-market value of collateral; and
- For Trading Members, a real-time contract information.

TFX uses SPAN® system to calculate margin for Interest Rate Futures contracts and provides a SPAN® file on the website.

For Daily Futures contracts, Margin Reference Amount is announced on TFX’s official website.

Incentives for Risk Management

As a measure for taking care of a Clearing Member whose risk in Clearing Business becomes excessive, TFX may adopt various measures for mitigating risks of the Clearing Member such as those for raising margin requirements for such Clearing Member, or collecting additional Clearing Deposit for their excessive risk amount, so that the Clearing Member is given sufficient incentives to manage their positions proactively.

TFX holds the Market Operation Committee at which various deliberations are made among the committee members and collects public comments, in designing risk management framework, whereby TFX is driving at making the risk management in Clearing Business more effective, reflecting opinions of Clearing Members and their customers to the risk management framework.

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 Risks from Interdependencies on Settlement, etc.

TFX has interdependencies with the settlement banks, custodian banks, and liquidity providers. TFX sets standards for selecting these entities, such as credit rating, periodically monitors financial information of these companies and manages the settlement risk, custody risk, and liquidity risk arising from such interdependencies with these entities.

Management of Risks from Interdependencies on Systems

TFX identifies risks associated with IT-service providers, public utility companies, and other related parties, as set forth in the “System Risk Management Policy,” and monitors and controls such risks thereunder.

In outsourcing the operation, development or administration of system, TFX selects contractors after valuating and considering them in light of the “Security Guidelines” and the “Policy and procedures to manage outsourced business operations”.

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.

TFX assumes the following risk scenarios that may potentially prevent it from being able to provide its clearing operations and services as a going concern; 1) a case where losses resulting from defaults of Clearing Members could not be sufficiently covered with the financial resources; or 2) a case where, due to its business failure, TFX suffered either a substantial decrease in its profit or an expense increase, which would consequently impair TFX’s net assets.

As for the losses resulting from the Clearing Member’s default, Article 156-10 of the FIEA provides, “A Financial Instruments Clearing Organization shall stipulate in its business rules that any and all losses arising out of the financial instruments obligation assumption service due to a default by a Clearing Member shall be borne by such Clearing Member and shall take any other measures for securing the appropriate performance of the financial instruments obligation assumption service.” Accordingly, TFX has stipulated the Loss Compensation Mechanism in Article 40 through 40.2 and Chapter 8-2, Section 2 of the Clearing Regulations to fully cover the losses resulting from the Clearing Member’s defaults.

In cases where TFX’s capital is greatly impaired by its business failure, TFX is prepared to take

countermeasures such as reviewing the business plan and reducing the expenses etc.

TFX will consider developing a recovery and wind-down plan by closely observing the movement of international regulations.

(*See*, Principle 15 “Business Risk” for further details.)

Management of Credit Risk and Liquidity Risk

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposures 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 participants and their affiliates that would potentially cause the largest aggregate credit exposure 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 exposure 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.

The Framework of Management for Credit Risks Arising from Clearing Members

TFX has set out the “Credit Risk Management Policy” and, in accordance with this policy, has established the following conservative and robust credit risk management framework. TFX reviews its sufficiency at least once a year:

(1) Screening of Clearing Members

When applying for a clearing membership, a Clearing Member is required to satisfy the eligibility standards, such as financial resources and personnel organisation, as stipulated in Clearing Regulations⁶. Furthermore, after a Clearing Member acquired a clearing membership, a Clearing Member has to keep satisfying the maintenance requirements.

Due to these requirements, the Clearing Members are, in principle, limited to firms that have financial strength to fulfill the payment, clearing and settlement obligations owed to TFX.

The Clearing Members must always meet requirements for financial basis, such as net asset amount and capital adequacy ratios, prescribed as the maintenance requirements for clearing membership, and periodically report their financial conditions to TFX. If a Clearing Member ceases to satisfy any of the maintenance requirements, it shall report TFX the details thereof immediately. TFX monitors financial conditions of its Clearing Members based on these reports⁷.

(2) Margin System

TFX daily measures and monitors credit risks that arise from the default of Clearing Members, and requires the Clearing Members to deposit an initial margin for covering potential future exposures and a variation margin for covering current exposures. Margin payments are made between TFX and Clearing Members on a daily basis.

(3) Probable Maximum Loss Calculation and Financial Resources Framework

TFX calculates daily the amount of credit risks associated with possible defaults of the Clearing Member and its affiliates (herein-after called "Potential Defaulting Member") that would potentially cause the largest aggregate credit exposure under extremely stressed market conditions (herein-after called "Probable Maximum Loss" (PML)), and secures financial resources to cover such amount (herein-after called "Financial Resources for Loss Compensation").

Financial Resources for Loss Compensation are comprised of Exchange Margin and Clearing Deposit etc. deposited by the Potential Defaulting Member, Default Compensation Reserve of TFX, and Clearing Deposit deposited by Clearing Members other than the Potential Defaulting Member (herein-after called "Non-defaulting Clearing Members"). These resources will be applied to the loss suffered by TFX due to Clearing Members' defaults⁸.

⁶ Chapter 2, Clearing Regulations, as for eligibility standards of Clearing Members

⁷ Articles 14-4,14-5, Clearing Regulations, and Article 7, Enforcement Regulations for Clearing Regulations

⁸ Chapter 8 and Chapter 8-2, Clearing Regulations, as for compensation of loss by assumption of obligations

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.

TFX identifies sources of credit risks, and regularly measures, monitors and control such risks as follows:

Credit Risks Arising from Clearing Members

TFX is exposed to credit risks arising from the defaults of Clearing Members. Credit risks are comprised of current and potential future exposures. Both exposures derive from market price changes in the prices of open positions of the Clearing Members.

TFX measures current exposures of each product, at least on a daily basis, by revaluating each Clearing Member's open positions by daily settlement price (herein-after called "DSP"). Also, it measures potential future exposures of each Clearing Member's open positions on intraday and end-of-day basis by employing extreme but plausible stress scenarios⁹. on intraday and end-of day basis.

Credit Risks Arising from the Settlement and Custodian Banks

In order to manage credit risks of settlement banks, qualified LG issuing banks¹⁰ and entities at which TFX holds cash and securities deposited as collateral (herein-after called "the Settlement and Custodian Banks"), TFX has the "Rules for Risk Management of the Settlement and Custodian Banks" and monitors these Banks on an ongoing basis.

Credit risks from the Settlement and Custodian Banks may arise in relation to (1) the settlement of funds between TFX and a Clearing Member, (2) deposits made by TFX at the Settlement and Custodian Banks (*i.e.*, funds deposited by Clearing Members and TFX's own fund) and (3) LG submitted by qualified LG issuing banks, with respect to FX Clearing Futures contracts.

TFX manages the credit risks arising from the Settlement and Custodian Banks, by limiting them to those with sound financial standings, monitoring their financial conditions and diversifying the funds to several banks with lower credit risks.

⁹ TFX started measuring the intraday current exposures upon the latest system renewal; in July 2019 for the Interest Rate Futures and in September 2019 for the Daily Futures.

¹⁰ Banks eligible to issue LG are limited to those designated by TFX among banks satisfying grading requirements set forth by "Cabinet Office Order on Financial Instruments Exchange, etc. ("qualified LG issuing banks").

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 TFX as it does not install an SSS.

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.

Credit Risks Arising from Clearing Members and Financial Resources to Cover Them

TFX covers its current and potential future exposures to each Clearing Member with a high degree of confidence using Exchange Margin. TFX also covers its PML which is calculated on the assumption of Clearing Members' defaults with the Financial Resources for Loss Compensation, such as Exchange Margin, Default Compensation Reserve and Clearing Deposit.

(1) Exchange Margin

① Initial Margin

TFX applies a different type of margin calculation systems depending on its products and customers' peculiarities. In any case, the margin calculated by any of the calculation

systems covers potential future exposures with a high degree of confidence. (See, Principle 6 “Margin” for further details.)

② Variation Margin

For Interest Rate Futures contracts, open positions are marked-to-market at the close of each trading day, and a difference in the value of positions arising from mark-to-market and option premium are cleared between TFX and the Clearing Member on the next trading day as valuation margin to cover current exposures.

For Daily Futures contracts, TFX revaluates positions held at the close of each trading day by DSP and requires Trading Members to maintain the margin larger than the required margin amount which is a sum of amount equivalent to the revaluation loss, if any, and the initial margin. With this framework, TFX covers its current and potential future exposures.

For FX Clearing Futures contracts, position at the close of each trading day is daily settled at DSP. TFX requires Trading Members to maintain the deposit larger than the required margin amount which is a sum of amount equivalent to net loss (if any) and the initial margin. In this way, TFX covers its current and potential future exposures.

TFX validates the sufficiency of Exchange Margin by way of daily back testing.

(2) Clearing Deposit

TFX calculates the amount of Financial Resources for Loss Compensation to cover the amount of PML.

TFX calculates the amount of PML under stress scenarios that include the largest historical price change during a certain sample period. The amount of PML reduced by (i) the amount of Exchange Margin deposited by the Potential Defaulting Member and (ii) Default Compensation Reserves of TFX is to be covered by the Clearing Deposits from all Clearing Members.

The amount of Clearing Deposit to be deposited by each Clearing Member (herein-after called “the Required Amount of Clearing Deposit”) is determined by dividing and allocating the total amount of Clearing Deposit to each Clearing Member in accordance with the risk amount assigned to each such Clearing Member. The Required Amount of Clearing Deposit of each Clearing Member is reviewed twice a month as a general rule and is notified to each Clearing Member. TFX may also request Clearing Members to deposit an ad hoc additional Clearing Deposit when deemed necessary.

Clearing Members’ Clearing Deposit will be used to cover losses of TFX and if such losses cannot be covered by the Clearing Deposit, then Clearing Members will be required to contribute additional Clearing Deposit.

In the case that Clearing Deposit is used to cover losses caused by the defaults of Clearing Members, Non-defaulting Clearing Members shall replenish deficiencies in Clearing Deposit by the date TFX designates.

Please refer to Principle 13 Participant-Default Rules and Procedures as for the loss compensation framework with respect to each Clearing Products.

Governance Arrangements for Financial Resources for Loss Compensation

TFX calculates the amount of PML and the amount of the Financial Resources for Loss Compensation in accordance with the calculation method prescribed in the Credit Risk Management Rules. TFX assesses the sufficiency of its financial resources by confirming the amount of the latter is greater than the former (herein-after called “Stress Testing”).

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

TFX's stress scenario for the Stress Testing includes the largest historical price change during a certain sample period and market movements based on hypothetical scenarios as "extreme but plausible market conditions".

With the Stress Testing, TFX ensures that it maintains sufficient Financial Resources of Loss Compensation available in the event of a default or multiple defaults under stressed market conditions. (*See*, Key Consideration 6 for further details)

TFX regularly tests the sufficiency of its total Financial Resources of Loss Compensation available against credit exposure on intraday and end-of-day basis¹¹. If TFX recognizes that its Financial Resources of Loss Compensation are not sufficient, TFX will consider necessary actions such as reviewing and changing the Required Amount of Clearing Deposit temporarily, etc.

Results of Stress Testing are reported daily to the Risk Management Office and CRO.

Status of credit risk management is reported to the Risk Management Committee monthly, and to the Board of Directors quarterly.

Review and Validation on Stress Testing

TFX conducts analysis on its Stress Testing at least monthly, and verifies their validity in scenarios, models and parameters. The Stress Testing will be reviewed as necessary when it is observed an increase in market volatility or any change in Members' financial conditions.

In addition, TFX verifies annually overall validity of credit risk management framework, and reports the results to the Board of Directors.

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.

¹¹ TFX started measuring the intraday current exposures upon the latest system renewal (in July 2019 for the Interest Rate Futures and in September 2019 for Daily Futures).

When conducting Stress Testing, TFX considers a wide range of price change scenarios that are extreme, but plausible. These scenarios are conservative ones which include the largest historical price change during a sample period and forward-looking hypothetical scenarios.

For historical scenarios, a sample period includes the time on or prior to launch of a subjected product.

Stress scenarios during the sample period include Gulf War (1990), the Great Hanshin-Awaji Earthquake (1995), the Asian Financial Crisis (1997-1998), the insolvency of LTCM (1998), the September 11 attacks in the U.S. (2001), the Lehman Shock (2008), Flash Crash (2010), the Great East Japan Earthquake (2011), European debt crisis (2011) and UK Referendum to leave the EU (2016).

By including not only the largest historical price change but also hypothetical scenarios, TFX assumes risks arising from fluctuations that cannot possibly occur under the current market situation.

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

TFX specifies in the Clearing Regulations the priority order of application of Financial Resources for Loss Compensation and the method of requesting additional Clearing Deposit¹². When the losses arising from defaults of Clearing Members cannot be covered by the collateral such as margin, deposited by the defaulting Clearing Members, such losses would be covered by other financial resources, such as Default Compensation Reserve of TFX and Clearing Deposit of the Non-defaulting Clearing Members.

¹² Chapter 8 and Chapter 8-2, Clearing Regulations, as for compensation of loss by assumption of obligations

Replenishment of Financial Resources

In the case that Clearing Deposit is used to cover losses caused by a Clearing Member's default, Non-Defaulting Clearing Members will be required to additionally deposit the amount equivalent to deficiencies arising from the above use in accordance with the Clearing Regulations by the date designated by TFX.

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

TFX stipulates requirements of eligible collateral in its collateral related rules and accepts only collateral with low risks in terms of credit, liquidity and market.

Specifically, TFX accepts the following collateral from Clearing Members:

- (1) Interest Rate Futures contracts
 - Cash (Japanese Yen)
 - Eligible securities (Japanese government bonds, share certificates. ¹³)

- (2) Daily Futures contracts
 - Cash (Japanese Yen)
 - Eligible securities (Japanese government bonds, share certificates), provided that only cash is acceptable as Exchange Margin with respect to Daily Futures contracts.

- (3) FX Clearing Futures contracts
 - Cash (Japanese Yen)
 - Eligible securities, etc. (Japanese government bonds, share certificates and LG¹⁴), provided that LG is only acceptable for the purpose of Exchange Margin. Furthermore, as eligible securities, etc. for the same purpose, TFX accepts both LG and cash from Clearing Member who is FX Broker Trading Member, while accepting only cash. from Clearing Member who is LP Member;

When a Clearing Member is going to deposit collateral, TFX confirms if it is eligible. TFX collateral management system verifies if collateral is eligible at the time of registration and automatically detects when collateral deposited becomes ineligible. Consequently, any Clearing Member cannot deposit ineligible collateral.

Wrong-Way Risk

The TFX rules do not allow a Clearing Member to deposit share certificates issued by the Clearing Member, its Parent Company, or its group affiliates, as collateral. By this means, TFX guards against Wrong-Way Risk with respect to collateral deposited by Clearing Members.

¹³Acceptable eligible share certificates are limited only to those of companies listed on financial instruments exchange markets in Japan.

¹⁴ FSA published notice to designate FX Clearing Futures contracts as Market transactions of derivatives using a LG as eligible securities, etc. and banks eligible to issue LG are limited to those designated by TFX among banks satisfying grading requirements set forth by “Cabinet Office Order on Financial Instruments Exchange, etc. (“qualified LG issuing banks”) and the contents of LG issued by such qualified LG issuing banks are subject to the Order and TFX rules and regulations.

Key Consideration 2:

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

Valuation Practices

TFX values deposited collateral on a daily basis using market prices obtained from transparent public information source. Valuation of government bonds is conducted daily based on market prices such as reference prices published by Japan Securities Dealers Association. Valuation of share certificates is conducted based on closing prices published by the relevant financial instruments exchanges as well.

Collateral Haircut Ratio

For Japanese Government bonds, TFX adopts haircut ratio to cover the largest historical 4-consecutive day price decline rate (100% confidence level) based on the sample data of price movements observed during the period of the past ten year.

As for share certificates, TFX adopts haircut ratio of 70 % in principle in accordance with the FIEA and its associated rules.

For LG, TFX adopts haircut ratio at 99 % of the LG limit amount.

Review of Haircut Ratio

TFX validates haircut ratio once a year for review. Further, TFX is prepared to reduce haircut ratio temporarily, if considerable movements in prices of eligible securities are detected.¹⁵

In addition, TFX may review and reduce LG haircut ratio following downgrade with respect to qualified LG issuing banks.¹⁶

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.

¹⁵ Article 9, Enforcement Regulations for Regulations for Margin and Unsettled Market Derivatives Contracts, Article 10, Regulations for Eligible Securities for Market Entry Deposit, Article 10, Regulations for Eligible Securities for Clearing Deposit

¹⁶ Article 19, Enforcement Regulations for Regulations for Margin and Unsettled Contracts for FX Clearing Futures **Transactions**

TFX adopts conservative and stable haircut ratio which can cover extreme price movements under stressed market conditions. Consequently, TFX believes that the need for procyclical adjustments is limited. (See, Key Consideration 2 of this Principle for Collateral Haircuts and Review 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

Concentrated holding of certain collateral assets may excessively affect the total value of the deposit if the prices of the held assets move. TFX imposes limits on the number of share certificates (that can be) of a single company deposited in order to prevent this from happening¹⁷.

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.

TFX does not accept any cross-border collateral.

Key Consideration 6:

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

Primary Functionality of Collateral Management System

TFX reconciles the outstanding balance of the collateral and accepts and withdraws the collateral on a real-time basis, utilizing its collateral management function of the Clearing System. With this function, TFX also monitors collateral values on an ongoing basis evaluating them by applying the latest market prices and haircut ratio.

By accessing the TFX Clearing System, Clearing Members can make request for deposit/withdrawal of collateral and confirm the resulted balance on a real-time basis. In addition, the Clearing Members can recognize the dates of interest payment/redemption in respect of deposited collateral.

¹⁷ Article 15-3-3, Clearing Regulations

TFX sends instructions to transfer funds to the Settlement Banks' current accounts with BOJ, transfer Japanese Government Bonds, and change the payee of interest with respect to Japanese Government Bonds via data transmission from the TFX Clearing System to the BOJ-Net. By this means, TFX can maintain smooth operation even under stressed market conditions.

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 System

TFX provides in-house clearing service and clears all derivative products listed and traded on the market operated by TFX. Margin requirements are calculated as per characteristics of products and attributes of customers.

Calculation Method for Margin

TFX adopts the following margin calculation methods appropriate for characteristics of products and attributes of customers. Details of the margin calculation methods and procedures to determine parameters and the Margin Reference Amount are stipulated in TFX margin related rules as published on the TFX website.

(1) Interest Rate Futures contracts

For Interest Rate Futures contracts, SPAN® margin system is used to calculate initial margin requirements at the portfolio base. Cash settlement variation which arises daily from a difference of the traded price on the day from the previous day's DSP is paid to or received from each Clearing Member as variation margin on the next following business day.

(2) Daily Futures contracts

For Daily Futures contracts, margin requirements are composed of initial margin calculated based on the Margin Reference Amount multiplied by the number of contracts, plus variation margin, as the case may be, given revaluation loss that are taken into account.

(3) FX Clearing Futures contracts

For FX Clearing Futures contracts, margin requirements are composed of initial margin calculated based on Margin Reference rate, as determined by TFX, multiplied by notional principal amount for net position, plus variation margin that is in the net loss valued at the end of the day based on DSP.

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.

Source of Price Data

TFX uses reliable price data in margin calculations.

TFX clears only listed products on its market and calculates margin requirements using DSP determined by TFX based on actual traded prices or current price in the market. TFX adopts traded prices as DSP in principle, however, if such prices are not appropriate due to market conditions, TFX may determine DSP otherwise in accordance with procedures, thoroughly considering factors such as bid and ask prices, etc.

As all transactions which TFX clears are listed and traded on the TFX markets, the DSP never becomes unavailable.

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 sub portfolio 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.

Initial Margin Model, Closeout Period and Sample Period

(1) Interest Rate Futures contracts

Margin Reference Amount (Price Scan Range) is determined by price movement range for futures, and implied volatility for options, while Margin parameters are calculated based on confidence level of 99%, closeout period of 1 day, and sample period of 6 months.

TFX employs closeout period of 1 day considering high liquidity of these products.

While TFX determines Margin Reference Amount by product, margin requirements are calculated at the portfolio base taking into account inter-product and inter-contract month offsets by using SPAN® system. According to SPAN® system calculation logic, the maximum loss arising from a portfolio is calculated as initial margin requirements.

(2) FX Daily Futures contracts

① Transactions by Individual Customers

The Margin Reference Amount is based on margin requirement ratio 4% (maximum leverage ratio of 25 times) as prescribed in the FIEA and its associated rules and historical 5-trading day average price of each product. The Margin Reference Amount is weekly reviewed in principle. (Closeout period of 1 day and sample period of 5 days)

② Transactions by Trading Members or Non-Individual Customers

TFX determines the Margin Reference Amount that covers 99% confidence level of the fluctuation distribution generated by applying the statistical method to the data on the daily price fluctuation of each product (herein-after called "HV method"). However, for market makers, "HV method with the limit of maximum leverage ratio of 25 times" is adopted.

The sample periods are past 8 weeks and 104 weeks, and the larger of the two calculation results is adopted. In principle, the Margin Reference Amount is reviewed on a weekly basis.

(3) Equity Index Daily Futures contracts

TFX determines the Margin Reference Amount that covers 99% confidence level of the fluctuation distribution generated by applying the statistical method to the data on the daily price fluctuation of each product during the past 24 weeks. However, for market makers, "HV method with the limit of maximum leverage ratio of 10 times" is adopted.

In principle, the Margin Reference Amount is reviewed on a weekly basis.

(4) FX Clearing Futures contracts

TFX determines Margin Reference rate based on HV method.

The sample periods are past 8 weeks and 104 weeks, and the larger of the two calculation results is adopted, provided that minimum value is set for a certain currency pairs.

In principle, the Margin Reference rate is reviewed on a weekly basis.

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.

TFX variation margin covers current exposure. For Interest Rate Futures contracts, once a day, unsettled positions held by each Clearing Member are marked to market based on the day's DSP. Cash settlement variation which arises from a difference from the previous day's DSP or the traded price on the day is paid to or received from each Clearing Member as variation margin on the next following business day.

For Daily Futures contracts, TFX revaluates positions held at the close of each trading day on DSP and requires Trading Members to maintain the margin greater than the margin requirements which are a sum of amount equivalent to the unrealized loss, if any, and the initial margin. With this framework, TFX covers its current and potential future exposures.

For FX Clearing Futures contracts, TFX calculates gain or loss for the positions held at the close of each trading day based on DSP and requires Trading Members to maintain the margin greater than the margin requirements which are a sum of amount equivalent to the calculated net loss and the initial margin. With this framework, TFX covers its current and potential future exposures.

In addition, TFX adopts the following framework to avoid accumulation of current exposures arising from significant intraday price movements:

- (1) For Interest Rate Futures contracts, in case of significant market price movements, TFX may call additional intraday margin under the Clearing Regulations.
- (2) For Daily Futures contracts, a Clearing Member is obligated: 1) to reevaluate positions of their customers on the current market price at certain time intervals, 2) to assess and judge the sufficiency of margin deposited by the respective customers relative to

the margin requirements, and 3) to forcibly close out their positions when their margin becomes deficient to a certain extent.¹⁸.

- ① For FX Daily Futures contracts, the above requirements (2) on the Clearing Member are applicable to positions for both individual customers and non-individual customers (excluding “Professional Investors¹⁹” as defined in the FIEA).
- ② For Equity Index Daily Futures contracts, the above requirements (2) on the Clearing Member are applicable to only for individual customers (excluding “Professional Investors²⁰” as defined in the FIEA).
- (3) For FX Clearing Futures contracts, TFX continuously monitors sufficiency of margin on a real time basis using current market price with respect to positions of the Clearing Member who is FX Broker Trading Members (i.e. effective margin ratio monitoring). The Clearing Member is required to maintain Effective Margin Ratio of “over 200% (or deposit more than double for the required margin); if the Ratio falls below 160%, TFX publish warning and if the Ratio falls below 140%, TFX may suspend execution of transaction by the Member, and if the ratio falls below 110%, TFX may force the Clearing member to settle positions by offsetting transaction.

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.

Margin Calculated at the Portfolio Level

For Interest Rate Futures contracts, TFX calculates margin requirements, using SPAN® systems based on portfolio of positions by type of account, *i.e.*, either customer account or house account. The SPAN® calculation method allows to offset margin requirements between products as well as contract months based on correlation between price movements.

For Daily Futures contracts and FX Clearing Futures contracts, margin is not calculated on the portfolio base.

¹⁸ As for FX Daily Futures contracts, Article 123.1(xxi)-2, (xxi)-3, Cabinet Office Ordinance on Financial Instruments Business Operators. As for Equity Index Daily Futures contracts, Article 28-8, TFX Brokering Terms.

¹⁹ The term means those who are specified investors under Article 2.31 and those who are regarded as specified investors under Article 34-3, FIEA.

²⁰ The term means those who are qualified institutional investors under Article 2.31(1) and those who are regarded as specified investors under Article 34-3, FIEA.

Cross-Margining with Other CCPs

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

Key Consideration 6:

A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily back testing – 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.

Back Testing

The Clearing Operation Department conducts daily back testing to confirm that calculated margin requirements sufficiently cover loss arising from actual unsettled positions and market price movements for each Clearing Member. The result is reported to the Risk Management Office and CRO.

The Risk Management Office compiles monthly the results of back testing to validate the margin calculation method and parameter, and reports them to CRO and the Risk Management Committee.

The Risk Management Committee discusses any measures as necessary.

Key Consideration 7:

A CCP should regularly review and validate its margin system.

TFX reviews and validates margin system as follows:

- The Risk Management Office monthly reports results of validation and analysis on the margin system to CRO and the Risk Management Committee.
- The Risk Management Committee reports to the Board of Directors, (i) risk management conditions and analysis result, on a quarterly basis, and (ii) result of validation for general framework of risk management, annually.
- The Board of Directors reviews the Credit Risk Management Policy at least once a year.

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.

TFX defines liquidity risk in the “Liquidity Risk Management Policy” as the risk of suffering loss which arises from the failure of settlement on the due date, by TFX’s counterparties such as Clearing Members, settlement banks, custodian banks, liquidity providers, even though the counterparties may be able to fulfill their obligations at some point in time in the future.

The Clearing and Settlement Department measures and monitors on a daily basis the liquidity requirements, and ensures the liquid resources sufficient to cover them through Stress Testing. The results of the Stress Testing are reported to the Risk Management Office and CRO on a daily basis.

The Risk Management Office analyses on a monthly basis the status of liquidity risk management, and CRO reports the analysis made by the Risk Management Office to the Risk Management Committee.

The Risk Management Committee reports the status and the analysis of liquidity risk management to the Board of Directors on a quarterly basis.

The Board of Directors determines matters of importance with respect to the liquidity risk management framework and, at least once a year, reviews the “Liquidity Risk Management Policy.”

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.

TFX monitors daily its settlement operation as follows:

(1) Interest Rate Futures

TFX monitors the status of variation margin payments receivable from Clearing Members.

Each Clearing Member who is liable to pay variation margin has to credit the amount of the margin to its account with the Settlement Bank by 11:00 a.m. of the settlement date. In the event of a paying Clearing Member is in default, the Settlement Bank needs to inform TFX of the fact immediately. By this means, TFX checks the status of the settlement by Clearing Members.

The Settlement Bank which receives the payments from Clearing Members, has to credit the amount of the variation margin to TFX's account with BOJ by 11:30 a.m. of the settlement date. TFX monitors the status of settlement on an ongoing basis, through the BOJ-Net.

(2) Daily Futures contracts and FX Clearing Futures contracts

TFX monitors the status of Exchange Margin payments from each Clearing Member.

A paying Clearing Member has to send money to TFX's account with the Settlement Bank by the due time defined in the 'rules', such that the amount of balance exceeds the amount of Exchange Margin to be maintained.

TFX accesses its accounts for margin settlement with the Settlement Banks and monitors the status of settlement properly.

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 as TFX is not an SSS.

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.

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.

Sufficiency of Liquid Resources

TFX verifies daily that it maintains liquid resources sufficiently enough to cover the liquidity requirements, which are calculated under the stress scenarios which include the largest price change based on historical scenarios in the adequate sample period and the price change based on hypothetical scenarios, where the extreme but plausible market conditions are taken into consideration.

These stress scenarios envision a chain reaction collapse involving a Clearing Member who requires the largest liquid resources (on a consolidated basis) and the Clearing Members with smaller net assets.

Furthermore, these stress scenarios are extremely conservative, as it assumes that the Clearing Members who would have the largest loss in the respective markets simultaneously go bankrupt.

Characteristics of TFX's Clearing Business

TFX's Clearing Business has the following features, which do not involve complex risk characteristics:

- (1) The settlement currency is limited to Japanese yen, and the settlements are made only through BOJ and the Settlement Banks in Japan.
- (2) Eligible securities, etc. deposited as collateral are only Japanese Government Bonds, stocks listed in Japan and LG that is submitted by qualified LG issuing banks designated by TFX among those banks satisfying grading requirements.
- (3) TFX does not clear any product with complicated risk profile, such as CDS.

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 transactions with) the relevant central bank. All such resources should be available when needed.

TFX maintains the following the qualifying liquid resources sufficiently enough to cover the liquidity requirements calculated under stressed market conditions which are extreme but plausible:

1. Liquidity Supply Facilities

The liquidity supply facilities are set with several commercial banks designated as the Settlement Banks and TFX can utilize the funds within the same day upon taking procedural steps provided in the applicable agreements.

2. Exchange Margin and Clearing Deposit

TFX holds the most of the collateral deposited in cash by Clearing Members, on its bank accounts with the Settlement Banks, so that the funds are available within the same day.

With respect to LG which can be deposited as margin with TFX, qualified LG issuing banks are required to specify in LG Agreement that on a claim from TFX to perform the guaranteed obligation, they shall fulfil its obligation within 24 hours in principle.

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 a part of its liquidity plan.

Supplemental Liquid Resources

As described in the Key Consideration 5, TFX secures qualifying liquid resources to sufficiently cover the liquidity requirements. In addition to this, TFX is able to apply its bank deposits held as the Default Compensation Reserve and a part of its surplus funds as supplement to 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.

Qualifying Liquid Resources

TFX's qualifying liquid resources consist of Exchange Margin and Clearing Deposit (held in bank account) deposited in cash by Clearing Members and liquidity supply facilities provided by the Settlement Banks.

Credibility of Liquidity Providers

TFX designates only sound commercial banks with strong financial bases as the Settlement Banks and manages its yen cash, diversifying them across several Settlement Banks.

The liquidity providers for TFX are selected from among the Settlement Banks and are all leading commercial banks, trust banks and co-operative banks in Japan. Each of these banks obtains a banking license under the Japanese Banking Act, etc. and is supervised by JFSA.

TFX clears only Japanese yen and requires each of the Settlement Banks, as eligibility requirements, to have a current account with BOJ, in order for it to access the funding from BOJ.

TFX comprehensively manages overall risks under the “Rules for Risk Management of the Settlement and Custodian Banks”, timely recognizing the financial status of each Settlement Bank such as creditability, capital, liquid assets and avoiding to excessively concentrate credit and liquidity risks on a certain bank.

TFX maintains the agreements with a multiple of Settlement Banks with regard to the Liquidity Supply Facilities and periodically confirms with the Settlement Banks the procedure of utilizing the Facilities.

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.

For Interest Rate Futures contracts, TFX conducts daily money transfers with Settlement Banks through its current accounts held at BOJ.

TFX is also a direct member of Japan Government Bond book-entry system run by BOJ and keeps Japanese Government Bonds pledged as collateral by Clearing Members, etc. at TFX's account with BOJ.

For Daily Futures contracts and FX Clearing Futures contracts, the settlement of accounts is carried out by transfer between accounts established in the settlement bank because the business conditions of the Clearing Members are diverse and do not necessarily have the current account of the BOJ.

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 pressures 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 for Liquidity Risk

TFX calculates the liquidity requirements and verifies the qualifying liquid resources to satisfy the liquidity requirements through daily Stress Testing.

The stress scenarios are based on the assumption of price changes under extreme but plausible market conditions. TFX has verified that it retains sufficient and qualified liquid resources available in the event of a default or multiple defaults under stressed market conditions.

By adding hypothetical scenarios to the stress scenarios as well as the largest historical price change, TFX is prepared for the surge of price volatility in the future which would not likely happen under the current market condition.

Review and Analysis of Models and Stress Scenarios

TFX regularly tests the sufficiency of its total Liquid Resources available against the liquidity requirements on intraday and end-of-day basis²¹.

The result of Stress Testing is reported daily to the Risk Management Office and CRO.

The Risk Management Office reports monthly the status of liquidity risk and the analysis of adequacy of scenarios, models, and parameters to the Risk Management Committee. The Risk Management Committee reports to the Board of Directors the status of liquidity risk management and its analysis on a quarterly basis and the result of verifying adequacy of liquidity risk management framework on a yearly basis.

²¹ TFX started measuring the intraday current exposures upon the latest system renewal (in July 2019 for the Interest Rate Futures and in September 2019 for Daily Futures).

The Board of Directors makes decisions on matters of important with respect to liquidity risk management and, at least once a year, reviews the Liquidity 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.

The Clearing Regulations stipulate that TFX is able to take necessary measures such as changing the cut-off time for settlements and rescheduling the settlements in case settlement becomes in-executable or extremely difficult due to natural disasters, economic upheavals or the other compelling reasons.

However, even in the case of a clearing member's default, TFX will execute the settlements by the regular cut-off time stated in the regulations and will not consider changing it unless the settlement is in-executable or extremely difficult.

Settlement

Principle 8: Settlement Finality

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

The following are two major settlements:

- Settlements of Exchange Margin (deposit and withdrawal of collaterals); and
- Settlements of variation margin.

TFX conducts Yen cash settlements and securities settlements, and in both cases, settlements are considered to be final at the point when the transfer process between accounts has been executed at BOJ, the Settlement Banks and JASDEC.

The methods and cut off time of settlements are specified in the TFX rules and regulations²².

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.

Final Settlement No Later Than the End of Value Date

TFX clearly defines the cut off time of settlements in the TFX rules and regulations²³ in order to secure the final settlements no later than the end of the value date.

²² "Japanese Yen Settlement Regulations", "Regulations for Margin and Unsettled Market Derivatives Contracts", "Regulations for Margin and Unsettled Market Derivatives Contract for FX Daily Futures Transactions", "Regulations for Margin and Unsettled Market Derivatives Contract for Equity Index Daily Futures Transactions", "Regulations for Margin and Unsettled Contracts for FX Clearing Futures Transactions", etc.

²³ "Japanese Yen Settlement Regulations", "Japanese Yen Settlement Regulations for the Settlement Banks", "Regulations for Margin and Unsettled Market Derivatives Contracts", "Regulations for Margin and Unsettled Contracts for FX Daily Futures Transactions", "Regulations for Margin and Unsettled Contracts for Equity Index Daily Futures Transactions", "Regulations for Margin and Unsettled Contracts for FX Clearing Futures Transactions", etc.

TFX has never experienced an incident where the final settlement is postponed to the next business day.

Settlements are made on a real time basis during the day and TFX verifies the settlements are completed according to the process predetermined in the rules.

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.

The operational procedures for Clearing Members to carry out settlements are stipulated in TFX's clearing related rules²⁴.

Clearing Members cannot unilaterally revoke the settlement once executed.

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.

TFX only uses Japanese Yen for the settlement currency, and conducts settlements between TFX and the Settlement Banks through current accounts with BOJ.

Nevertheless, as not all of Clearing Members have a current account with BOJ due to the variety of their business, settlements between TFX and a Clearing Member are conducted by transfers between TFX's account and the Clearing Member's account with the Settlement Bank selected by the Clearing Member among those designated by TFX.

²⁴ "Japanese Yen Settlement Regulations", "Regulations for Margin and Unsettled Market Derivatives Contracts", "Regulations for Margin and Unsettled Contracts for Exchange FX Margin Transactions", "Regulations for Margin and Unsettled Contracts for Exchange Equity Index Margin Transactions", "Regulations for Margin and Unsettled Contracts for FX Clearing Futures Transactions", etc.

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.

Settlements between Clearing Members and TFX are conducted by transfers between the accounts with the Settlement Banks which satisfy the requirements set forth under the TFX rules and have sufficient financial bases and high credit enough to carry out the settlement business as a settlement bank. TFX's accounts for settlements are the current accounts covered by the Japanese Deposit Insurance System, with little or no credit or liquidity risk.

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.

TFX stipulates the criteria of selecting the Settlement Bank in “Rules for Risk Management of the Settlement and Custodian Banks as follows”:

- (i) The Settlement Bank shall be a licensed bank under the Banking Act of Japan, having a business office in Japan, and having a current account with BOJ as well as having the capability sufficiently enough to perform stable operation as a settlement bank.
- (ii) The Settlement Bank shall be those TFX recognizes its eligibility taking into account its financial conditions, creditworthiness and appropriateness in controlling its liquidity risks, etc.

TFX continuously monitors the Settlement Banks for compliance with the above requirements and confirms periodically that the amount of settlement is not concentrated in a certain Settlement Bank.

Key Consideration 4:

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

TFX conducts money settlements through the accounts with BOJ or the Settlement Banks. TFX does not conduct money settlements 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.

TFX's settlement-related rules prescribe the cut-off time for the settlements between TFX and Clearing Members or the Settlement Banks.

Central Bank Money Settlement

For the 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." As such transfers are irrevocable upon completion of the transfer process on the BOJ-Net, the settlements at BOJ become final at that time.

Commercial Banks Money Settlement

The settlements between TFX and Clearing Members are conducted in accordance with TFX's settlement-related rules. The rules stipulate the cut-off time for the settlements between TFX's account and Clearing Members' accounts. As the settlement is considered to be irrevocable when the funds are credited to the recipient's bank account, the settlements between TFX and Clearing Members become final at that time.

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.

This principle is not applicable as TFX does not engage in the delivery of physical instruments or commodities.

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.

This principle is not applicable as TFX is not a CSD.

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.

This principle is not applicable as TFX does not offer Exchange-of-Value Settlement.

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 a default.

Participant-Default Rules and Procedures

The Clearing Regulations stipulate important matters regarding default procedures, such as the definition of default, measures and procedures that TFX may take when a Clearing Member defaults, the obligations of a defaulting Clearing Member and related parties including Non-defaulting Clearing Members.

When a Clearing Member becomes insolvent or is so deemed by TFX, TFX will take such measures deemed necessary and appropriate and will declare that the Clearing Member is in default.

TFX will, according to its rules, appropriately handle the unsettled positions of the defaulting Clearing Member by liquidating or transferring them to the Non-defaulting Clearing Members.

TFX will, as a general rule, maintain the regular settlement schedule to the extent possible and conduct settlements even when a Clearing Member's default occurs.

TFX has liquidity supply facilities arrangements with the Settlement Banks prepared for liquidity pressures triggered by the defaults of Clearing Members. Separately, as to the Daily Futures contracts, TFX has secured sufficient balance of readily callable deposits at the Settlement Banks.

(*See*, Principle 7" Liquidity Risk" for further details)

Framework for Loss Compensations

In the Clearing Regulations, TFX has established a loss compensation framework in case there should be losses because of a Clearing Member's default. This protects Non-defaulting Clearing Members from any effects of such losses and ensures continuous and stable implementation of the Clearing Business.

Losses resulting from a Clearing Member's default will be covered by the financial resources prepared for the market on which such losses have occurred, in accordance with the following priority of application of the financial resources:

Default Waterfall (Interest Rate Futures²⁵ and Daily Futures)

Default of Clearing Member		
	Contributor	Applied Financial Resources
1st Priority	Defaulting Clearing Member	Margin, Clearing Deposit, Market Entry Deposit, etc.
2nd Priority	TFX	Default Compensation Reserve
3rd Priority	Non-defaulting Members	Clearing Deposit
4th Priority	Non-defaulting Members	Additional Clearing Deposit

Default Waterfall (FX Clearing Futures)

With respect to FX Clearing Futures contracts, the following priority is applied to cover incurred losses.

	Contributor	Applied Financial Resources
1st Priority	Defaulting Clearing Member	Margin, Clearing Deposit, Market Entry Deposit, etc.
2nd Priority	TFX	Default Compensation Reserve
3rd Priority	Non-defaulting Members	Clearing deposit (up to the Initial Requirement of Clearing Deposit)
4th Priority	Non-defaulting Members	First Additional Clearing Contribution (up to the amount, equivalent to 3rd priority)
5th Priority	Non-defaulting Members (having revaluation profit)	Second Additional Clearing Contribution (VM haircu)

²⁵ The Loss Compensation Scheme for the Interest Rate Futures will be amended by the end of FY 2021 based on the current scheme for FX Clearing Futures.

If the losses are not fully compensated by using the 1st to 3rd priority financial resources, TFX requires Non-defaulting Members to deposit First Additional Clearing Contribution.

If the losses are not fully compensated by using the 1st to 4th priority financial resources, TFX requires Non-defaulting Members to deposit Second Additional Clearing Contribution; the maximum amount of Second Additional Clearing Contribution calculated for a Non-defaulting Member is the amount of variation margin gain arising during a Cooling-off period.

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.

TFX provides for the procedures applicable to a Clearing Member's default in its rules and operational manuals. According to these rules and manuals, TFX is to determine the suspension of the defaulting Clearing Member's trading and clearing, handle the defaulting Clearing Member's positions (by transferring them to the Non-defaulting Clearing Members or by liquidating them) and compensate the losses with available resources.

TFX specifies the roles and responsibilities of the departments, as well as the commitment of the senior management to a series of these default procedures.

If a Clearing Member is in default, TFX shares information and works in close cooperation with JFSA, making reports to JFSA in accordance with the FIEA and its associated rules.

TFX also shares information with Clearing Members and the public respectively through appropriate media.

Key Consideration 3:

An FMI should publicly disclose key aspects of its default rules and procedures.

TFX stipulates its Clearing Member's default procedures in the Clearing Regulations and associated rules, and discloses them through the website. TFX also prepares a default manual for Clearing Members, setting forth the default procedures, and distributes them to Clearing Members for their better understanding.

When a Clearing Member defaults, TFX will, to the extent reasonably possible, provide any related parties in the market with important information regarding specific countermeasures against the default, including but not limited to, the measures taken as for the defaulting Clearing Member, the way of handling their own or their customers' positions, and the manner for compensating losses.

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, TFX conducts at least once a year default management drills in which the Clearing Members should participate. Furthermore, TFX makes use of the results in order to review and revise once a year the current default procedures.

When TFX is to revise the rules on default procedures, it discusses with Clearing Members and consults with the Market Operation Committee which is comprised of key Clearing Members, in order to reflect their opinions.

TFX also invites opinions from the public as well as Clearing Members when it is to revise the important rules.

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

In accordance with the respective characteristics of each of its clearing products, TFX has adopted the following segregation arrangements for protecting positions and margin of customers:

For Interest Rate Futures contracts, TFX manages customer positions and margin of each of the Clearing Members in an omnibus account, separated from the Clearing Member's proprietary account, considering varieties and diversity of customer types including institutional investors in or outside Japan. While customer positions and margin are managed by Clearing Members at their accounts segregated by the respective customers, TFX has the authority to require information from the Clearing Member, related to each such customer positions and margin when necessary²⁶.

As for Daily Futures contracts, TFX manages customer positions and margin in segregated accounts considering that most of the customers are domestic individuals.

As for FX Clearing Futures contracts, TFX does not manage customer positions and margin; the type of account for the contracts is limited to "house account".

Rules on Transfer of Positions/Margin

TFX has the following arrangements for customers' positions and margin transfer in respect of its clearing products:

When a Clearing Member defaults, customers of the defaulting Clearing Member may transfer their own positions and margin to another Clearing Member (herein-after referred as "Transferee"). In such case the customers have to obtain consent from the Transferee to accept the transfer of their positions and margin by the time and date specified by TFX.

When the transfer is completed, the margins initially deposited with TFX via the defaulting Clearing Member are treated as having been deposited via the Transferee as the customers' agent. Claim for refund of customers' margin is to be made by the Transferee as the customers' agent.

²⁶ Article 6.5, Rule & Regulations for Regulations for Margin and Unsettled Market Derivatives Contracts, Article 4.2, Regulations for Margin and Unsettled Contracts for FX Daily Futures Transactions, Article 5.5, Regulations for Margin and Unsettled Contracts for Equity Index Daily Futures Transactions.

Protection from Defaults of a Clearing Member and its Fellow Customer

In case that a Clearing Member defaults due to the default of its customer, TFX has the following arrangements to protect the other customers of the defaulting Clearing Member against risk arising from such default (herein-after called "Fellow Customer Risk"):

For Interest Rate Futures contracts, customers' positions and margin are managed in an omnibus account, and for Daily Futures contracts, they are managed in principle in each individual account.

The TFX rules²⁷ and the "Agreement on Establishment of Transaction Account" require a Clearing Member as its customer's agent to deposit each customer's margin calculated on a gross basis with TFX. This means a Clearing Member is not allowed to offset one customer's positions with another's in margin calculation.

Even if a Clearing Member defaults, its customers' claim for refund of margins deposited with TFX will be executed as specified in the TFX rules²⁸ and the Agreement on Establishment of Transaction Account. These arrangements avoid the Fellow Customer Risk to occur.

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 refer to Key Consideration 1 of this Principle as for the account structure to segregate customer positions and margin from those of Clearing Members.

²⁷ Chapter2, Regulations for Margin and Unsettled Market Derivatives Contracts, Agreement concerning Establishment of Interest Rate Futures Transactions Account, Chapter2, Regulations for Margin and Unsettled Contracts for FX Daily Futures Transactions, Agreement concerning Establishment FX Daily Futures Transactions Account, Chapter2, Regulations for Margin and Unsettled Contracts for Equity Index Daily Futures Transactions, Agreement concerning Establishment of Equity Index Daily Futures Transactions Account .

²⁸ Article 15, 16, 17, Agreement concerning Establishment of Interest Rate Futures Transactions Account etc." Article 13, 14, Agreement concerning Establishment of FX Daily Futures Transaction Account, Article 13, 14 Agreement Concerning Establishment of Equity Index Daily Futures Transaction Account.

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 described in the preceding Key Consideration 1 of this Principle, TFX allows the transfer of customer positions and margin in accordance with TFX's arrangement for portability of customer accounts.

TFX conducted a series of transfer of customer accounts without any problem during the 2008 Lehman Brothers Crisis, which demonstrates the effectiveness of TFX's arrangements.

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.

Disclosure on TFX's arrangements for Segregation and Portability

The arrangements for the segregation and transfer with regard to customers' positions and margins are specified in TFX clearing-related rules²⁹. These rules are publicly available on TFX's website.

TFX discloses on its website that customers' margins for Interest Rate Futures contracts are managed in an omnibus account, and that those for Daily Futures contracts are managed in each individual account.

Disclosure on Legal or Operational Constraints

(1) Legal constraints

The FIEA stipulates that in the event of commencement of insolvency procedures such as special liquidation proceedings, bankruptcy proceedings, rehabilitation proceedings and

²⁹ Regulations for Margins and Unsettled Market Derivatives Contracts, Regulations for Margins and Unsettled Contracts for FX Daily Futures Transactions, Regulations for Margins and Unsettled Contracts for Equity Index Daily Futures Transactions.

reorganisation proceedings for a defaulting Clearing Member, the Clearing Regulations will apply, in preference to above general insolvency procedures, to the settlement of outstanding obligations between the defaulting Clearing Member and TFX. Thus, in relation to the insolvency procedures, legal admissibility of the Clearing Regulations is ensured.

If a Clearing Member defaults, in accordance with the Clearing Regulations the proprietary positions of the defaulting Clearing Member will be liquidated, and customers' positions and margin of the defaulting Clearing Member will be transferred to the other Clearing Members or liquidated. For these reasons, TFX recognizes no legal constraints on segregation and portability of positions and margin.

(2) Operational constraints

TFX discloses operational conditions and constraints on segregation and portability of positions and margin in TFX rules and manuals for Clearing Members.

As Daily Futures contracts, which are mainly traded by individual customers, are managed in individual accounts, it will require a certain allowance time to complete the position transfer corresponding to the volume of the transferred data. TFX describes these operational constraints in the manual addressed to Clearing Members and separately explains the same to them for a clear disclosure purpose in this respect.

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.

Identification, Monitoring and Management of Business Risks

General business risks at TFX are defined as the risks of suffering losses that may arise from TFX's business strategies or business execution and operation and exclude credit risks and liquidity risks arising from Clearing Members' defaults. While general business risks could be caused by various factors, TFX manages the business risks arising from its business strategies and managerial judgment as described below.

TFX develops a medium-term management plan as its business strategies and obtains an approval on it of the Board of Directors. Furthermore, TFX develops its annual business and budget plans for each fiscal year based on the medium-term management plan and obtains an approval on them from the Board of Directors.

Progress of these business plans, as well as the financial status resulting therefrom, are reported monthly to the Board of Directors. The Board of the Directors and the Board of Auditors manage and monitor the status of the business execution and the profit or loss.

The Board of Directors also determines important matters in management including new listing or delisting of products and an investment plan such as system renewal etc. through sufficient consideration of risks involved and the investment efficiency of these measures.

In addition, any business risk arising from operational risks, system risks, legal risks, reputation risks, etc. are managed properly in accordance with each risk management policy and rules.

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.

TFX holds liquid net assets funded by equity so that it can continue operations and services as a going concern even if it incurs general business losses.

The amount of the liquid net assets funded by equity covers 6 months or more of operating expenses.

TFX ensures that it holds sufficient equity to sustain its operations and to meet capital requirements, and it reports its financial conditions to the Board of Directors on a monthly basis.

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.

TFX holds liquid net assets funded by equity covering 6 months or more of operating expenses. These assets are managed and held separately from financial resources held to cover the risks arising from Clearing Members' defaults.

TFX will consider developing "a recovery and wind-down plan" through discussions with regulators, Clearing Members and other related parties, based on "the international standards for FMI recovery and resolution" published by CPMI-IOSCO and Financial Stability Board in October 2014.

Key Consideration 4:

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

TFX holds its liquid net assets to cover general business risks in Japanese Yen cash deposited at banks or in the form of Japanese Government Bonds.

These are assets of high quality and high liquidity, even in stressed market conditions. Custodian banks are chosen in accordance with the strict standards set forth in the "Rules for Funds Management". (*See*, Principle 16 "Custody and Investment Risk" 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.

TFX may take the following measures if its capital decreases significantly or falls below the level required to cover 6 months of operating expenses. Currently, TFX is considering a viable plan to implement these measures:

- Thorough review of expenses;
- Review and revision of Clearing Fee;
- Thorough review of business and operations; and
- Injection of additional capital, etc.

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 Clearing Members' Assets

TFX manages and holds cash deposited as collateral from Clearing Members, in the form of bank deposits or JGBs in accordance with its Management Rules for the Exchange Margin.

JGBs and stocks deposited as collateral from Clearing Members are held at a segregated account in the name of TFX with BOJ and JASDEC respectively.

LG is acceptable for the purpose of eligible securities, etc. as collateral with respect to FX Clearing Futures contracts. LG submitted in the form of written agreement by LG issuing banks designated by TFX is held by TFX at its premises.

Custodian for TFX's Assets

TFX holds a part of its own assets which have been held as liquid assets to cover general business risks and assets to be prepared for default of Clearing Members, in the form of bank deposits in accordance with its Rules for Fund Management.

As for the rest of its own assets held for purposes other than those to cover general business risks and to be prepared for default of Clearing Members, TFX holds them with BOJ and JASDEC.

Key Consideration 2:

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

As described in Key Consideration 1, TFX holds and has prompt access to its own assets and the assets deposited by Clearing Members, which are deposited with banks, BOJ, JASDEC and TFX.

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.

Credit Risks and Concentration Risks

All of TFX's custodian banks are the Settlement Banks. In accordance with the "Rules for Risk Management of the Settlement and Custodian Banks," TFX recognizes their statuses on credit, capitals, liquid assets, etc. in a timely manner and conducts comprehensive risk management not to concentrate credit risks or liquidity risks excessively in particular Settlement Banks.

TFX stipulates requirements for the Settlement Banks in its settlement-related rules as follows:

- (i) Being a licensed bank under the Banking Act of Japan, having a business office in Japan and having a current account with BOJ; and
- (ii) Having a sound financial condition with the credit rating and equity capital greater than a certain level
- (iii) Having enough capability to perform stable operation as a Settlement Bank.

TFX monitors and ensures regularly that each bank designated as the Settlement Bank satisfies these standards and that the settlement amount is not concentrated in certain banks.

The accounts that TFX has opened for cash settlement at the Settlement Banks are current accounts which are for “payment and settlement”, which are wholly protected by the Deposit Insurance System.

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.

Investment Strategy

TFX conducts and manages the investment of its own assets under the investment plan approved by the Board of Directors, in accordance with the Rule for Funds Management.

TFX’s investment status is reported to the Board of Directors monthly. The consistency with overall risk management strategy is thus confirmed.

TFX manages the Exchange Margin deposited by Clearing Members in line with the Management Rules for the Exchange Margin.

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.

Identification of Operational Risk

TFX manages operational risks by dividing them into administrative risks and system risks.

Administrative risks are identified as the possibility of incurring losses caused by various factors such as defects or insufficiencies of information systems or internal procedures, etc., in addition to human errors of its officers and employees failing to conduct administrative work properly or causing accidents or committing illegal acts in the course of the administrative work process.

System risks are identified as the possibility of incurring losses to TFX and parties connected to the Exchange System, caused by TFX computer system / network breakdown, malfunction or inadequacies, or by inappropriate or unauthorized use or cyber-attack of TFX computer system.

TFX sets the “Administrative Risk Management Policy” and the “System Risk Management Policy”, which provide the definitions of the risks, framework and methods for the risk managements, and controls the risks according to these policies.

The Frameworks of Management for Administrative Risks

TFX has the framework of management that while each business department takes the responsibility for administrative risks arising from its allocated business activities, the General Administration Department oversees the respective business departments’ risk management. Each department identifies and evaluates its respective administrative risks arising from its operations and draws up the necessary risk reduction measures, and then the General Administration Department compiles these findings and reports them to the Risk Management Office and CRO.

The director responsible for the General Administration Department reports the status of the administrative risks to the Risk Management Committee regularly and when necessary. The Risk Management Committee reports major issues, if any, related to the administrative risks, to the Board of Directors every quarter.

The Board of Directors determines any major issues related to the administrative risk management, and further reviews the suitability of the administrative management frameworks. The “Administrative Risk Management Policy” is reviewed and updated at least once every year.

The Frameworks of Management for System Risks

The System Department manages the system risks in accordance with the “System Risk Management Policy,” “Information Security Policy,” and “Security Guidelines.”

In the system development process, user departments and Clearing Members also participate in the comprehensive tests in accordance with development plans.

The director in charge of TFX’s system department reports the status of system risks to the Risk Management Committee regularly and when necessary.

When the system failure occurs, the emergency measures will be taken immediately to prevent the spread of damages. TFX draws up measures to prevent the recurrence, investigating the cause of the failure.

The Management of Outsourced Contractor

When outsourcing system operation, development or administrative processes, TFX selects outsourcing contractors in accordance with the “Policy and procedures to manage outsourced business operations” and “the Security Guidelines”. In outsourcing agreements, TFX clearly specifies the role-sharing, responsibility, the power of supervision, sub-contract procedures, and manages outsourcing contractors through the periodical monitoring so that outsourcing task should be adequately performed.

The Management of “the Single Point of Failure”

In accordance with the “Security Guidelines,” when developing system, TFX avoids the single point of failure by implementing more than double redundant configurations.

TFX reviews the specifications to make sure that all the requirements are included appropriately, and further tests the developed system to check if it is programmed according to the specifications. As such, TFX does not view that there exist any potential single points of failure in its systems.

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.

Roles, Responsibilities, Frameworks

The Board of Directors has adopted the “Administrative Risk Management Policy” and the “System Risk Management Policy,” which specify the risk management frameworks, including but not limited to, the roles and responsibilities for the management of operational risks. In addition, the Board of Directors makes a decision about important matters related to the operational risk management, and annually reviews the said Policies.

Assessment, Audit, and Validation

The Risk Management Committee reviews the validity of both the administration risk management framework and the system risk management framework at least once a year and reports the review result to the Board of Directors. The Board of Directors then reviews the validity of operational risk management frameworks, in reference to the report received.

The Internal Auditing Office audits that the operations of each business department have been performed properly in accordance with the applicable rules and procedures. In addition to this, the system is subjected to the external audit, through which external auditors review and verify that the systems or applications thereof are developed and managed under TFX’s adequate and sufficient control and governance.

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.

The “System Risk Management Policy” specifies an objective to minimize losses to TFX and Clearing Members caused by the system failure and the unauthorized use of system and cyber-attack.

To achieve the above objective, the systems are designed to have the processing capacity above their historical threshold, so that TFX makes sure on a daily basis that the processing ability and capacity are adequate to respond to any unanticipated sudden increase in the processing. Furthermore, in accordance with the “Security Guidelines,” TFX manages all system irregularities that may have occurred during the system processing, and makes necessary improvements to it accordingly.

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.

TFX prepares the following measures to keep sufficient processing capacity of its systems:

- (4) When replacing critical systems or implementing a large-scale system change, TFX secures the replaced or changed systems to withstand sufficient processing ability and capacity in light of estimates for future trading volumes during the expected system lifetime; and
- (5) After the system goes live, TFX analyzes trends and reviews the necessity for expanding the ability and capacity according to increments in the number of products and trading volumes. Adequacy of system capacity is monitored on an ongoing basis through monitoring standards set during developments. Alerts will be sent and incident tickets are generated when the pre-set thresholds are breached, by which issues are managed.

Key Consideration 5:

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

Physical Security

TFX's data center which houses TFX's clearing system satisfies all the requirements set by the Center for Financial Industry Information Systems (FISC), called the "Security Guidelines on Computer Systems for Banking and Related Financial Institutions," which is recognized as the standard for Japanese financial market safety.

The outsourcing agreement stipulates that the data center's administrators shall comply with the Security Guidelines. TFX checks and verifies through monthly reports received from the data center's administrators that the physical security measures are undertaken pursuant to the Guidelines and any issues as for the potential vulnerabilities and threats are appropriately addressed.

Information Security

TFX establishes the Information Security Policy to provide a basic principle for actions regarding the protections and usages of the overall information assets which include not only the information but also the systems themselves. The "Information Security Management rules" and "Security Guidelines" are set to illustrate specific requirements and practical measures to satisfy the Policy.

The “Information Security Policy” provides for such points as definitions of the information assets and governing structure for information security.

TFX verifies that it properly manages and handles the information assets in accordance with the “Information Security Policy”, “Information Security Management rules” and “Security Guidelines”. Further, TFX reviews the “Information Security Management rules” periodically and “Information Security Policy” as necessary, and if necessary, amends them in order to keep them relevant.

The “Security Guidelines” specify as security measures the requirements for HR measures, physical measures, technical measures, as well as for the management of the outsourcing contractors.

The “Security Guidelines” have been prepared in compliance with the “Security Guidelines of FISC” and is reviewed and revised from time to time as needs arise upon evaluation of any revisions made to the Security Guidelines of FISC.

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.

The Objective of Business Continuity Plan (“BCP”)

TFX sets objectives for BCP as follows:

- To pursue actions to minimize the systemic impacts to the Clearing Members and related parties by continuing TFX’s operations as much as possible when the risks of natural disasters, such as earthquakes and epidemics, and failures of social infrastructure, such as electric power and communications or an act of terrorism are actualized; and
- To quickly and efficiently recover the operations, should TFX be compelled to suspend its operations.

Designing the Business Continuity Plan

The BCP specifies the recovery procedures in the case of the risk events causing the suspension of the Exchange operations. These procedures include those for the business operations at the Backup Offices and the switch operations to the DR (Disaster Recovery) site.

It is designed that the time for the recovery of vital information systems for TFX's important operations should be less than two hours.

Other than the above, as part of the crisis management system, TFX sets the "Initial Response Rules in the Event of a Large Scale Natural Disaster", "Correspondence Rules in the Event of a Large Scale Natural Disaster" and the "Contingency Plan for System Failure and Other Emergencies (herein-after called "Contingency Plan")," and provides therein the policies for handling an emergency situation such as the occurrence of a large-scale disaster by which TFX is prevented from using its systems or other settlement-related systems.

Secondary Site

TFX has a DR site as a secondary data center and the two Backup Offices as secondary business offices. The main data center and primary back up office are located in a reasonable distance enough to dispatch necessary employees for the risk events like a large -scale natural disaster and have sufficient systems as well as data to continue operations. This ensures TFX a scheme for swift failover.

The DR site and the secondary Backup office are located in an area having a considerable distance from the main data center and main office and are connected to power utilities of different zones and are linked through different telecommunications infrastructures. With these facilities, TFX has established a scheme that enables the exchange to resume systems and business operations within the targeted recovery time.

Review and Testing

BCP sets forth the BCP drills and training, and the following drills are conducted annually:

- BCP drills to operate the systems at site of the Backup Offices
- drills to test that staff can reach at the Backup Offices within certain designated time limits
- emergency contact network drills by the entire personnel
- data center switching drills

Furthermore, TFX participates, along with the other FMIs such as BOJ, in an industry-wide BCP drill organized by the Japanese Bankers Association (herein-after called "JBA") and Tokyo Foreign Exchange Market Committee.

These drills assume a wide-area disaster and involve a broad scope of participants in the financial markets. At TFX, the BCP education program for employees is provided annually.

Through the results from these drills and education program, TFX continually develops BCP as necessary and confirms its effectiveness.

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.

Management of Risks to TFX's Operations from Major Members and Other Entities

BCP and the Contingency Plan provide for the recovery procedures in the case of the risk events causing the suspension of TFX's operations.

TFX has a close relationship with Clearing Members, BOJ, the Settlement Banks, Ippan Shadan Hojin JBA Tibor Administration, infrastructures providers, such as electric power providers. The Contingency Plan provides for the respective countermeasures against failures of systems provided by these counterparties.

TFX provides the test environment to enable the Members to connect and test their backup systems. Accordingly, the Members can test the ability to restore their systems connected to TFX.

Measures to Avoid Risks that TFX May Pose to Other FMI

TFX has prepared the Contingency Plan through discussions with mutually dependent FMIs as to the way to avoid impacts of TFX system failures on those FMIs as much as possible.

When the risk is realised, TFX will minimize the impacts to the Clearing Members and organisations concerned by:

- continuing the business operations as far as possible in accordance with BCP; and
- seeking to recover them quickly and efficiently when TFX is compelled to stop them.

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.

TFX has established the clearing qualifications, i.e., “Interest Rate Futures Clearing Membership”, “Daily Futures Clearing Membership” and “FX Clearing Futures Clearing Membership” (collectively, the “Clearing Membership”), each of which is required for an entity to become a counterparty to TFX’s relevant Clearing Business.

Major requirements for the Clearing Membership are as follows,³⁰ and the requirements are rationally aligned with the nature of the relevant Clearing Business:

- (i) Geographic basis; having its office or branch in Japan;
- (ii) Trading membership; possessing a trading membership for the relevant product to be cleared;
- (iii) Personnel; (a) being licensed as a financial instruments firm or a registered financial institution under the FIEA; and
(b) having the knowledge and capacity sufficiently enough to perform businesses as a Clearing Member; and
- (iv) Financial resources; satisfying certain financial requirements, such as net assets, etc.

JFSA has approved the Business Rules that stipulate the requirements for the clearing qualifications. TFX further discloses on TFX’s website the participation criteria.

Upon receipt of an application for a Clearing Membership, TFX examines the application fairly according to the qualification criteria³¹ for each type of Clearing Membership.

TFX has established no qualification limitations on the attributes of indirect customers such as the Clearing Members’ customers.

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.

³⁰ Article 5, Clearing Regulations

³¹ Article 4.2, Clearing Regulations

Legality and Reasonability of Criteria of Membership

TFX has established reasonable qualification requirements for the acquisition of Clearing Membership for each of TFX's Clearing Business, which is aligned with the risks and nature of the relevant Clearing Business.

TFX ensures, in principle, to provide an equal access to all Members of the same Clearing Membership. Categories of TFX's Clearing Member include banks and financial instrument trading brokers (securities companies) etc., and TFX has established eligibility criteria based on indicators of financial soundness, depending on the differences in the applicable industries.

For an applicant whose net asset amount is less than TFX's required level, TFX allows such applicant to access the Clearing Business on the condition that it obtains a guarantee from its parent company.

There are two types of Clearing Members; i.e., a Clearing Member entitled to brokerage for clearing of non-Clearing Members' contracts ("Clearing Member with Clearing Brokerage Power"), and a Clearing Member not entitled to such clearing brokerage ("Clearing Member without Clearing Brokerage Power"). The membership criteria for the Clearing Member with Clearing Brokerage Power are stricter than those for the Clearing Member without Clearing Brokerage Power.

Amendment to and Disclosure of the Membership Criteria

The Membership criteria are amended as needed according to changes in the regulatory environment surrounding financial markets, and the revision to the relevant laws. The membership criteria are publicly available on TFX's website, and can be accessed by all current and potential Clearing Members.

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 Clearing Members' Compliance with Qualification Criteria

TFX continuously monitors Clearing Members for their compliance with the qualification criteria for the Clearing Members, as described below.

Clearing Members are obliged to report their compliance with the qualification criteria for the Clearing Members to TFX periodically and in a timely manner.³²

In particular, from a viewpoint of financial soundness, Clearing Members are required to report their financial conditions to TFX monthly, quarterly or annually, and TFX continuously monitors the soundness of Clearing Members. Before taking any actions, such as amendment to the articles of incorporation, merger, succession of the business, acts which may have an impact on the Member's management and business structure, the Clearing Members are required to notify TFX of the details thereof.

Additionally, in accordance with TFX's Inspection Regulations, TFX inspects Clearing Members' business conditions and operations.

Based on the above measures, TFX makes a continual follow-up by requiring a Clearing Member to submit additional reports or documents³³, as necessary.

Suspension and Orderly Exit of a (Clearing) Members

If TFX determines that a Clearing Member's conditions of business or assets are inappropriate in light of the operation of the relevant market, TFX may recommend the Clearing Member to take appropriate actions, and may request a report from the Clearing Member for the actions it took³⁴.

When TFX determines that a Clearing Member does not satisfy qualification criteria for the Clearing Member or has violated the TFX rules, TFX will take disciplinary measures against the Clearing Member, according to the method which is prescribed in the Clearing Regulations³⁵.

These measures include the suspension from access to all or part of TFX's Clearing Business and revocation of the clearing qualification for the relevant Clearing Membership.

As a Clearing Member must as well be a Trading Member under the qualification criteria, disciplinary measures against a Trading Member will be determined by the Self-Regulatory Committee following the consultation to the Disciplinary Committee. The Discipline Committee is composed of a number of experts and professionals, such as lawyers, who work autonomously from TFX and Clearing Members.

A Member whose Clearing Membership has been deregistered shall perform all outstanding obligations owed to the other Clearing Members, non-Clearing Members and TFX, by

³² Chapter2 Section4-2, Clearing Regulations

³³ Article 14 -6, Clearing Regulations

³⁴ Article15-8, Clearing Regulations

³⁵ Chapter2 Section5, Clearing Regulations

appropriating money, securities or other equivalents deposited at TFX, in accordance with the TFX rules³⁶. By these rules, TFX ensures the Clearing Member's orderly exit from its market.

When TFX has imposed any disciplinary measure on a Clearing Member including the suspension of, or restriction on the access to TFX's Clearing Business and/or revocation of the relevant Clearing Membership, TFX notifies such effect to all the other Clearing Members and Non-Clearing Members, and releases the notice on TFX's website.³⁷

When a Clearing Member's Clearing Membership is deregistered, TFX gives a public notice on such deregistration and notifies it to all the other Clearing Members and Non-Clearing Members³⁸.

Principle 19: Tiered Participation Requirements

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

Key Consideration 1:

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

(1) Tiered Participants of TFX

A Clearing Member is a direct participant with Clearing Membership who can act as a direct counterparty to TFX performing its Clearing Business, and who are required to be a financial instruments firm or a registered financial institution under FIEA.

TFX's indirect participants are classified as follows:

- Customer of Clearing Member, who opens an account with the Clearing Member;
- Non-Clearing Member that is entitled to trading qualification but not to clearing qualification; and
- Customer of Non-Clearing Member, who opens an account with the Non-Clearing Members.

The business categories of indirect participants may vary, including brokers, banks, asset management companies (investment management business operators, investment advisory and agency operators), hedge funds, market makers, and individuals.

³⁶ Article14-2, Clearing Regulations

³⁷ Article15-11, Clearing Regulations

³⁸ Article14, Clearing Regulations

(2) Gathering Information on Indirect Participants

TFX has the right to request a Clearing Member to submit documents concerning information on each customer's positions and margin, as TFX deems necessary.³⁹ The Clearing Member is obliged to submit promptly such documents to TFX, whenever TFX requests.

TFX further obliges a Non-Clearing Member to periodically report its financial conditions to TFX.⁴⁰ In any other cases where TFX determines as necessary for TFX's operational reasons, TFX has the right to request a Non-Clearing Member to submit reports or documents concerning the Member's business or assets.⁴¹

Please refer to Key Consideration 3 and 4 of this Principle as for the risks to TFX arising from tiered participation arrangements.

Key Consideration 2:

An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

A Clearing Member is a direct counterparty to TFX performing its Clearing Business. By monitoring and assessing the Clearing Member's proprietary/customer positions, TFX is able to identify noted dependencies between the Clearing Member and its indirect participants.

TFX is also able to assess Non-Clearing Members' position status relative to the related Clearing Member's financial soundness, and confirm whether there is any impact for the Clearing Member if the related Non-Clearing Member defaults or bankruptcies occur, by receiving periodical reports on financial conditions from the Clearing Member and Non-Clearing Members respectively.

In particular, for Daily Futures contracts, TFX is able to easily identify noted dependencies between a Clearing Member and its indirect participants, as TFX adopts the account structure in which TFX can monitor each participant's position/margin on an account basis. See Principle 14 for details on Segregation and Portability.

³⁹ Article 6.5, Regulations for Margin and Unsettled Market Derivatives Contracts, Article 4.5, Regulations for Margin and Unsettled Contracts for FX Daily Futures Transactions, and Article 5.5, Regulations for Margin and Unsettled Contracts for Equity Index Daily Futures Transactions.

⁴⁰ Article 57, Trading Member Regulations.

⁴¹ Article 58, Trading Member Regulations.

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.

Since a Clearing Member is the direct counterparty to TFX performing the Clearing Business, the Clearing Member is responsible for meeting its obligations to TFX, even when indirect participants of the Clearing Member have not performed their obligations to the Clearing Member.

If a Clearing Member has excessively large positions (including positions of indirect participants) in light of the Clearing Member's financial conditions, the risk to TFX that the Clearing Member would fail to fulfill its obligations will increase. In order to manage such risk, TFX is able to request the Clearing Member or the Trading Member under the TFX rules to submit additional information concerning their indirect participants, as TFX deems necessary.

TFX monitors on a daily basis the positions outstanding of each of the Clearing Members relative to each Member's financial conditions.

Key Consideration 4:

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

When TFX recognizes that a Clearing Member has an excessive risk concerning its unsettled positions in comparison with its net assets, or that TFX deems necessary in light of risk management, TFX requests the Clearing Member to submit a report on relevant information including the causes of such risk. TFX may take appropriate measures to mitigate risk, including such measures as additional requirements for collateral deposit, if necessary.

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.

TFX conducts an assessment of potential risks prior to establishing a proposed link arrangement, including those related to trading and clearing. In this assessment, TFX makes an analysis of the potential risks relating to legal, credit, liquidity, regulation and operation that may have an impact on TFX.

TFX currently has FMI links with the following entities:

1. BOJ: Fund settlement bank for money settlement and custodian of collateral in form of Japanese Government Bond.
2. JASDEC: Custodian of collateral in form of listed stocks, etc.

TFX has only two FMI Links in operation, one with BOJ and the other with JASDEC, and considers that these link arrangements do not and will not become an obstacle for TFX's adherence to the FMI principles.

[Note] LIFFE Administration and Management:

TFX had a trading and clearing link arrangement with LIFFE on Three-Month Euroyen Futures contracts. However, the Link has terminated on 5th April, 2018.

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.

The links are implemented between TFX and Japanese FMIs under Japanese law.

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 TFX 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 TFX 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 TFX 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 TFX 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.

Currently, TFX does not have a valid linkage with any other CCPs.

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.

TFX does not have current and potential exposures to the linked CCP or its participants.

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 TFX 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.

When taking any actions such as changing its Clearing and Settlement Rules, its operation structure, products to be cleared, or its systems, TFX designs such actions taking into account needs of its Clearing Members and markets.

In order to reflect the opinions of Members, TFX has set up the Market Operation Committee as an advisory panel to the Board of Directors.

The Market Operation Committee, which is comprised of major Clearing Members of TFX and academic experts, may express an opinion to the Board of Directors with regard to any important decisions made for the operation of the TFX market.

Furthermore, through interaction with its Clearing Members and market participants, and seeking an opinion from the public (public comments) etc., TFX reflects needs of Clearing

Members and markets and intends to keep all the related parties informed about actions taken by TFX.

TFX requests public comments through its website and accepts various opinions from the public, including but not limited to, those from its Clearing Members and their 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.

TFX's mission as a comprehensive exchange for financial derivatives is to contribute to the growth of Japanese economy through sound development of the financial market.

Aiming to accomplish this mission, TFX has set the following objectives as its key business strategies under TFX's mid-term management plan, while it formulates a measurable and achievable annual business plan for each fiscal year:

- 1) Promote retail business by "expanding CFD products offering", "attracting overseas investors", and "supplying our tools to financial institutions and encouraging their new business creations";
- 2) Promote wholesale business by "diversifying clearing business" and "offering new tools for credit risk management"; and
- 3) Expand scope of business partner by "developing partnership with overseas firms, and "collaborating with non-financial industry".

TFX conducts various measures and carries out its operations in accordance with these plans.

Key Consideration 3:

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

TFX develops its business strategies based on the mid-term management plan and annual business plan, and, through the realization of various measures, seeks to improve its efficiency and effectiveness in order to meet needs of its Members and markets.

TFX monthly reports the progress of such measures and their assessments to the Board of Directors.

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.

TFX uses the widely accepted communications procedures and standards for the communication with the Clearing Members, the Settlement Banks, and the other FMIs.

Procedures/Standards for Communication with Clearing Members

For Interest Rate Futures contracts, TCP/IP is used as a communication protocol, and the data is exchanged with XML data format.

For Daily Futures contracts, the TCP/IP is used as a communication protocol, and the data is exchanged with FIX standards or FTP data format.

For FX Clearing Futures contracts, the TCP/IP is used as a communication protocol, and the data is exchanged with FIX standards format.

Procedures/Standards for Communication with the Settlement Banks

For Interest Rate Futures contracts, TFX uses the BOJ-NET for its Japanese yen settlement at BOJ.

For Daily Futures contracts and FX Clearing Futures contracts, TFX uses the firm banking systems offered by commercial banks for its Japanese yen settlement at commercial banks.

Procedures/Standards for Communication with the other FMIs

For the settlement of JGBs, TFX conducts operational procedures via the BOJ-NET terminals, provided by BOJ.

TFX conducts the settlement of stocks via the JASDEC's network system.

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.

TFX Rules

TFX clearly prescribes comprehensive rules and procedures regarding the Clearing Business in its Clearing Regulations and associated rules, and discloses them on its website in Japanese and English. These rules provide details of qualification criteria and obligations for Clearing Membership, rights and obligations related to clearing and settlement between TFX and Clearing Members, settlement procedures and the financial resources framework such as Margin and Clearing Deposit.

Revision of TFX Rules

TFX revises its rules, after hearing opinions from the relevant Clearing Members, and, where appropriate, in consultation with the Market Operation Committee and soliciting public comments.

While TFX obtains an approval from JFSA before revising its key rules, it provides a notice to JFSA when revising other minor rules.

TFX notifies each Clearing Member of the revisions and discloses them on the website dedicated only to the Clearing Members at the same time. In case of revising key rules or changing listed contracts, TFX holds an explanatory meeting with Clearing Members or explains to each Clearing Member individually.

General Information on TFX's Website

TFX's website is publicly accessible and provides the following information:

- TFX's corporate outline, history and financial information;
- Outline of clearing framework and Clearing Member framework, and clearing-related data;

- Market information and trading-related data; and
- Rules and Regulations, etc.

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.

Details of TFX's clearing framework, rights and obligations between TFX and Clearing Members are clearly stipulated in its Clearing Regulations and associated rules, and they are disclosed publicly.

TFX provides Clearing Members with the following information that may be necessary for them to identify and assess any risks or costs involved for their use of TFX's Clearing Business:

- Information about methods and terms of clearing;
- Information about collateral, *e.g.*;
 - Obligations for Margin, Market Entry Deposit, and Clearing Deposit, acceptable collateral, haircuts for collateral; and
- Information about procedures for the default of a Clearing Member, *e.g.*;
 - Waterfall of Financial Resources for Loss Compensation (Margin, Market Entry Deposit, Clearing Deposit, Default Compensation Reserve and for FX Clearing Futures contracts, Special Purpose Collateral), methods for dealing with the positions of the defaulting Clearing Member.

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.

When a company intends to obtain Clearing Membership, TFX holds an explanatory meeting individually and provides information about the outline of clearing framework, the procedure of obtaining Membership, system requirements, etc.

In respect of existing Members, TFX makes inspections to ensure that the Members operate their businesses in accordance with the TFX rules and procedures.

When TFX recognizes that a Clearing Member does not fully comprehend the TFX rules, procedures or the risks it would incur by participating in the Clearing Business or there is any failure or insufficiency in the Clearing Member's operational structure relating to the

participation in the execution of Clearing Business, TFX makes such Member to correct the situation, issuing an improvement or corrective order to the relevant Member.

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.

TFX discloses the rule stipulating its fee structures on its website and anyone can access it easily. TFX discloses its trading fees, which include clearing fees.

In case of making a significant change in its services and fees, where appropriate, TFX resolves the change after consulting the Market Operation Committee and soliciting public comments. TFX informs each Clearing Member of the change and disclose it publicly on its website.

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.

In July 2015, TFX disclosed the first document pursuant to the CPSS-IOSCO "Disclosure Framework for Financial Market Infrastructures." then updated it in August 2017 and August 2019. This is the third update of the document. TFX will continue to update this document when there are major changes, and at least once every two years.

Disclosure of Data

TFX discloses the following statistical data of clearing contracts on its website, and also publishes monthly statistics by aggregating the daily data:

- Cleared volume (traded volume) and open interest;
- Final settlement volume and final settlement price; and
- Daily settlement price

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.

This principle is not applicable as TFX is not a TR.

V. List of Publicly Available Information

< TFX Information >

TFX Rules and Regulations

<https://www.tfx.co.jp/en/rules/>

TFX Financial Information (Japanese only)

https://www.tfx.co.jp/about_tfx/ir.html

TFX Company Guide (Annual Report)

<https://www.tfx.co.jp/en/publication/>

TFX Corporate Outline

https://www.tfx.co.jp/en/about_tfx/

TFX Clearing

https://www.tfx.co.jp/en/about_tfx/outline/outline03.html

TFX Clearing Membership

<https://www.tfx.co.jp/en/wholesale/clearing/clearing01.html>

TFX Market Information (Statistics)

Daily Statistics Report (Interest Rate Futures Contracts)

<https://www.tfx.co.jp/en/historical/futures/>

Daily Statistics Report (Exchange FX Daily Futures contracts)

<https://www.tfx.co.jp/en/historical/fx/>

Daily Statistics Report (Exchange Equity Index Daily Futures contracts)

<https://www.tfx.co.jp/en/historical/cfd/>

Daily Statistics Report (FX Clearing Futures contracts)

<https://www.tfx.co.jp/t-clearfx/data.php>

Monthly / Annual Statistics Report (All Products)

<https://www.tfx.co.jp/en/historical/>

< Related Laws and Regulations >

Financial Instruments and Exchange Act

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=1&re=01&dn=1&x=81&y=17&co>

Cabinet Office Order on Financial Instruments Clearing Organizations

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E9%87%9>

Principles for Financial Market Infrastructures (PFMI)

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

Disclosure Framework and Assessment Methodology

<https://www.iosco.org/library/pubdocs/pdf/IOSCOPD396.pdf>

Implementation monitoring of the PFMI: Level 2 assessment report for central counterparties and trade repositories

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

Comprehensive Guidelines for Supervision of Financial Market Infrastructures-

https://www.fsa.go.jp/en/laws_regulations/index.html

European Market Infrastructure Regulation (EMIR)

https://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=9hKlTthNJ5HW5KnGD

Civil Code

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E6%B0%>

Companies Act

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E4%BC%>

Act on Recognition of and Assistance for Foreign Insolvency Proceedings

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E5%A4%>

Banking Act

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E9%8A%>

< Regulatory Authorities and Organizations >

(The) Financial Services Agency of Japan

<https://www.fsa.go.jp/en/index.html>

(The) Bank of Japan

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

The Bank of Japan Act

<http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=%E6%97>

The Bank of Japan Policy on Oversight of Financial Market Infrastructures

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

Rules on Current Deposit Account (Japanese only)

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

Japan Securities Depository Center, Inc.

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

The Financial Futures Association of Japan

<https://www.ffaj.or.jp/en/>

The Centre for Financial Industry Information System (FISC)

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

VI. Glossary

BCP	Business Continuity Plan
CCP	Central Counterparty
CPSS	The Committee on Payment and Settlement Systems
CPMI	The Committee on Payment and Market Infrastructure
CRO	Chief Risk Officer
CSD	Central Securities Depository
DFAM	Disclosure Framework and Assessment Methodology
DSP	Daily Settlement Price
DVP	Delivery Versus Payment
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Market Authority
FIEA	Financial Instruments and Exchange Act
FISC	The Center for Financial Industry Information Systems
FMI	Financial Markets Infrastructure
IOSCO	The International Organization of Securities Commissions
JASDEC	Japan Securities Depository Center, Inc.
JBA	Japanese Bankers Association
JFSA	Financial Services Agency of Japan
JFSA Guidelines	Comprehensive Guidelines for Supervision of Financial Market Infrastructures - Clearing Organizations, Fund Clearing Organizations, Book-entry Transfer Institutions, and Trade Repositories -
LIBOR	London Interbank Offered Rate
PFMI	Principles for Financial Market Infrastructure
SSS	Securities Settlement System
TC-CCP	Third Country CCP
TFX	Tokyo Financial Exchange Inc.
TR	Trade Repository