

**Information Disclosure Based on the Principles
for Financial Market Infrastructures:
The BOJ-NET Funds Transfer System**

Bank of Japan

July 2023

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1. Executive Summary

1-1. The Purpose of This Document

The Bank of Japan (the Bank) operates a funds transfer system that accepts current account deposits from financial institutions and uses the current account deposits for funds transfers, and debits and credits (the System). The Bank has also built the Bank of Japan Financial Network System -- BOJ-NET Funds Transfer System (FTS) and JGB Services¹ -- with the aim of efficiently and safely executing online funds and Japanese government bond (JGB) settlements between the Bank and financial institutions. For funds transfers under the System, financial institutions may also use the BOJ-NET.

This document is designed to meet the disclosure requirement stipulated in "Principles for Financial Market Infrastructures" (PFMI), an international standard adopted in April 2012 by the Committee on Payments and Market Infrastructure (CPMI) of the Bank for International Settlements (BIS) and the Board of the International Organization of Securities Commissions (IOSCO), and it covers primarily the System and the BOJ-NET (FTS) (the Systems). References are also made to the Bank's intraday overdraft facility and operational structure as required.

Principles 6, 10, 11, 14, 20, and 24 of the PFMI do not apply to the System due to the nature of their provisions.

1-2. Outline of the System

Funds transfers under the System is generally executed in real-time gross settlement (RTGS) using the BOJ-NET (FTS).² In RTGS, payment instructions given in the BOJ-

¹ The BOJ-NET was established and is operated with the aim of efficiently and safely executing online funds and JGB settlements between the Bank and financial institutions through a computer network. The BOJ-NET connects the Bank's computer center with the Bank's head/branch offices and the financial institutions participating in the network with communication circuits that allow the data entered at the Bank's head/branch offices or financial institutions to be processed online at the Bank's computer center. In addition to connections with terminals, direct connection with financial institutions' computers is possible.

The functions of the BOJ-NET comprise (1) FTS for funds settlements and (2) JGB Services for JGB settlements. The former executes funds settlements under the System, while the latter executes the JGB settlements arising from purchase and sale of JGBs, and transactions on auctions, and issuance.

² The settlement for a part of the Bank's open market operations and transactions to which the

NET (FTS) by the Bank or financial institutions settling funds under the System (participants) are executed immediately per instruction once the BOJ-NET confirms that it has secured the funds to be debited.

To ensure smooth settlement of funds under the System, the Bank provides the participants with intraday liquidity to be repaid by the closing hour in the form of an overdraft (i.e., an intraday overdraft facility). The participants may borrow funds from the Bank in the form of an overdraft interest-free up to the assessed value of collateral pledged in advance.

The Bank offers two types of accounts for funds transfers under the System: a home account and a queuing and offsetting (Q/O) account. The participants may use liquidity-saving features (LSFs)³ of the BOJ-NET by settling funds through the Q/O account. The market practice is to basically use the Q/O account for transactions between participants. On the other hand, home accounts are used for funds settlements in the Delivery Versus Payment (DVP)⁴ of JGB transactions and for transactions involving Japanese yen settlements of Continuous Linked Settlement (CLS; a mechanism for simultaneous funds settlements across currencies).

The legal basis of the System is provided by the Bank of Japan Act (the Act) and other laws and regulations as well as contracts with participants. It is stipulated in the contracts that the System's settlement finality that requires a high degree of legal certainty is secured when the Bank confirms the settlement and enters it in its current account ledger. This legal certainty has been verified through legal reviews by external experts.

Bank or the Japanese government was a counterparty was made at a designated time (in which debits and credits are processed simultaneously upon the arrival of certain fixed hours). Since the new BOJ-NET (FTS) was fully launched in October 2015, this type of settlement has been abolished.

³ Liquidity-saving features consist of "queuing" and "simultaneous processing of multiple payment instructions (offsetting)." The former is a function that holds a payment instruction in a queue of the BOJ-NET (FTS) when the payment instruction received from a participant cannot be settled immediately due to insufficient funds to debit. The latter is a function that searches for combinations of payment instructions received or queued in the BOJ-NET (FTS) that will not end up with insufficient funds to debit and executes the settlement of the payment instructions.

⁴ By linking the BOJ-NET (FTS) and BOJ-NET (JGB Services), each funds transfer in the former and each JGB transfer in the latter are linked so that one is executed on the condition that the other is executed. For details, see Section 3-4.

1-3. Participants in the System

The Bank selects the participants from (1) institutions playing a key role in funds settlements (such as banks, central credit organizations, *shinkin* banks, and payment clearing organizations); (2) institutions playing a key role in securities settlements (such as financial instruments business operators, securities finance companies, and financial instruments clearing organizations); and (3) institutions playing a key intermediary role in interbank money markets (such as money market dealers). The Bank has published concrete criteria for the selection of institutions eligible to participate in the System.⁵ The Bank monitors the compliance with these criteria through on-site examinations and monitoring of those with which it has agreements on on-site examinations, oversight of the financial market infrastructures (FMIs), and reporting or submission of information from the participants.

1-4. Risk Management in the System

The System's operational stability and risk management are ensured by the governance structure of the Bank.⁶

The Bank does not bear credit or funds liquidity risk in individual payments or settlements made by the participants under the System, as it is not a counterparty of these transactions. Although the Bank provides an intraday overdraft facility, as mentioned earlier, it appropriately manages risks associated with such credit provision by receiving in advance eligible collateral covering the amount of credit extended and by managing the amount of extended credit so that it remains within the value of the collateral pledged. When the Bank finds it necessary, the Bank may terminate the contract with the participant. The Bank may also set or act on necessary matters so long as they are aimed at securing appropriate operations of current account transactions.

As to operational risks, the Bank sets detailed operational procedures for participants and itself based on the detailed analysis of the System's operations and on the operational flows established to control such risks. The BOJ-NET (FTS) is developed by identifying and curbing the operational risks in the design phase of system development.

⁵ The criteria are available only in Japanese.

⁶ The Bank operates the System as its regular business as stipulated in Article 33, Paragraph 1 of the Act and as authorized business as stipulated in Article 39 Paragraph 1 of the Act.

For business continuity planning, important IT systems are duplicated, data at the Bank's main center are reflected at its backup center near real time, and the switchover to the backup center can be executed to resume operations within two hours.

2. Summary of Major Changes since the Last Update of the Disclosure

The Bank published the last disclosure document based on "Principles for financial market infrastructures: disclosure framework and assessment methodology" in 2021.⁷ There has been no major change since the last disclosure.

⁷ "Information Disclosure Based on the Principles for Financial Market Infrastructures: The BOJ-NET Funds Transfer System" (2021)

https://www.boj.or.jp/en/paym/outline/pay_boj/rel210730f.pdf

3. Outline

3-1. Outline of the Funds Settlements System and the BOJ-NET FTS Operated by the Bank

As its regular businesses stipulated in Article 33, Paragraph 1 of the Act, the Bank operates a funds settlement system that accepts current account deposits from participants and uses these current account deposits for funds transfers, and credits and debits. The System is the most essential funds settlements system in Japan.

The Bank selects participants from 1) institutions playing a key role in funds settlements (such as banks, central credit organizations, *shinkin* banks, and payment clearing organizations); (2) institutions playing a key role in securities settlements (such as financial instruments business operators, securities finance companies, and financial instruments clearing organizations); and (3) institutions playing a key intermediary role in interbank money markets (such as money market dealers). The Bank has set out and published criteria for institutions that are eligible to hold current accounts with the Bank and have access to the Bank's lending. As of the end of March 2023, system participants numbered 484.

The Bank offers online processing services using the BOJ-NET (FTS) for funds settlements under the System. Of the above-mentioned 484 participants, 463 are users of the BOJ-NET (FTS).⁸ Funds transfers under the System, including those requested in paper form by the participants, are processed on the BOJ-NET (FTS).

This document mainly covers the Systems and makes reference to the Bank's intraday overdraft facility⁹ and operational arrangements as called for.

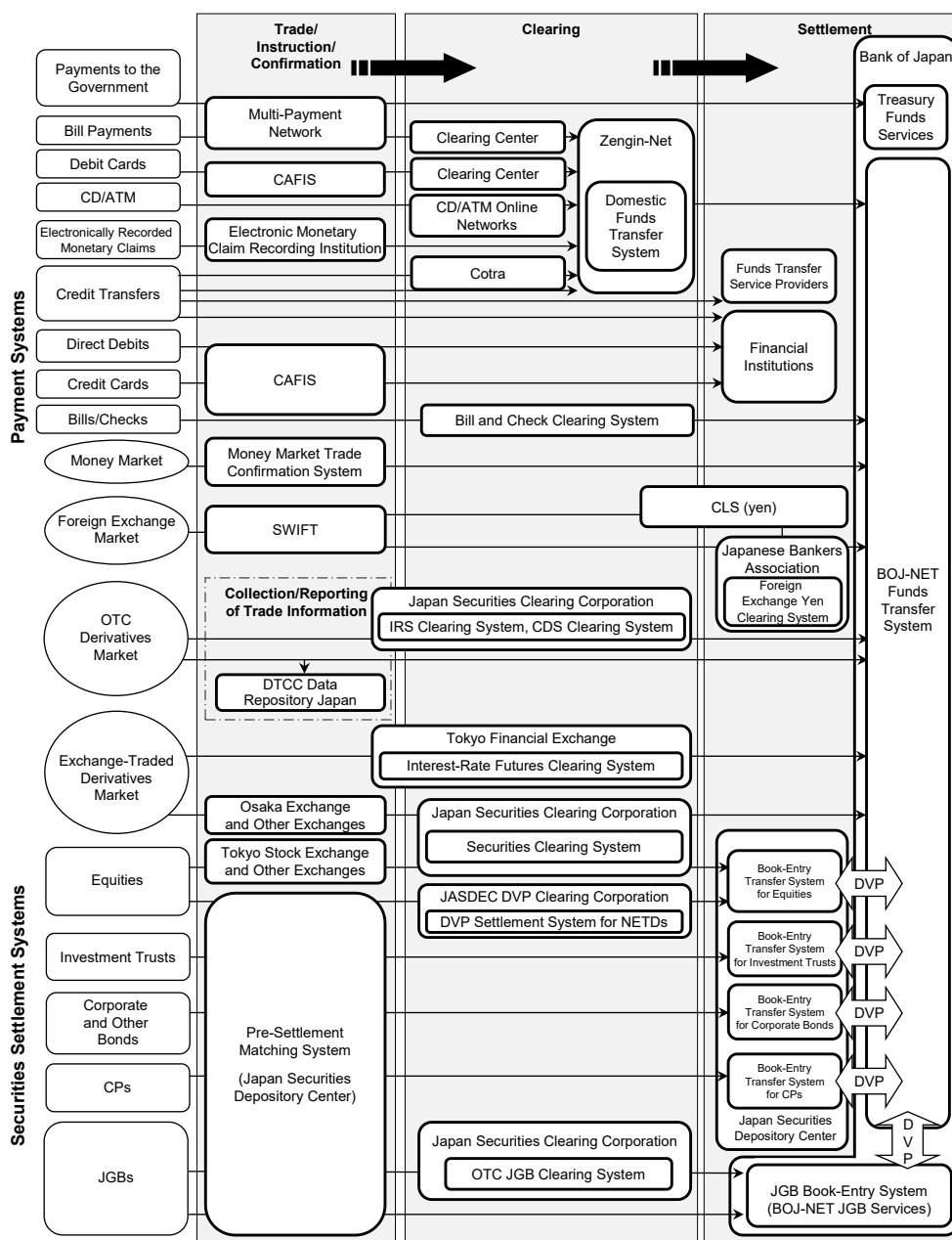
The System settles the following through funds transfers, and debits and credits on the current account held at the Bank by its participants: (1) funds settlements for interbank money market transactions, JGBs, corporate bonds and other securities transactions; (2) funds settlements for the Zengin System (the nationwide online network system for domestic retail funds transfers), the Bill and Check Clearing System, the Foreign

⁸ Those that do not participate in the BOJ-NET make settlement requests in paper form at the Bank's windows; then the Bank enters the requests into the BOJ-NET to execute settlements.

⁹ As described in Section 3-4, the Bank provides the participants with intraday liquidity in the form of an intraday overdraft for the smooth settlement of funds under the System.

Exchange Yen Clearing System (FXYCS), and other private-sector FMIs; and (3) settlements for the open market operations between the Bank and its participants and for payment and receipt of banknotes (Chart 3-1).

(Chart 3-1) Major FMIs in Japan



- Notes: 1. JSCC is required to report data to relevant authorities for OTC derivatives transactions it has cleared. Transactions not cleared by JSCC are required to be reported to authorities (the Financial Services Agency) either via DDRJ or directly by financial institutions.
2. Japan Bankers Association, which operates FXYCS, entrusts operations related to funds transfers to the Bank of Japan, and the Bank processes such operations via the BOJ-NET FTS.

In fiscal 2022 (ended March 31, 2022), the value and volume of settlements through the System -- for the most part consisting of large-value funds settlements, including settlements among participants in the interbank money market -- stood at approximately 213 trillion yen and 79 thousand transactions per business day, respectively (Chart 3-2).

(Chart 3-2) Value and Volume of Transactions Processed by Major FMIs (Fiscal 2022¹)

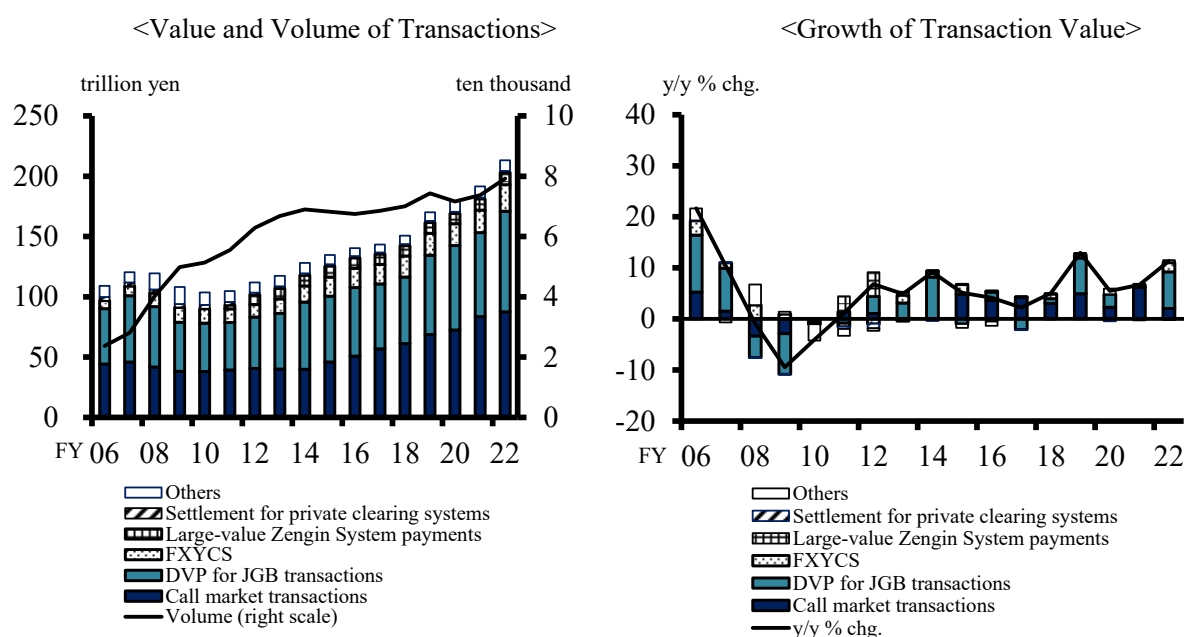
Payment systems	Value (tril.yen)	Y/Y % chg.	Volume (thousands)	Y/Y % chg.
BOJ-NET Funds Transfer System	213.2	+ 11.3	79.2	7.5
of which: interbank transfers	87.5	+ 4.7	—	—
DVP for JGBs	83.5	+ 19.7	—	—
Large-value Zengin System payments	10.2	11.1	—	—
CLS (yen payments)	81.2	27.0	151.2	18.2
Foreign Exchange Yen Clearing System	22.1	18.3	30.5	8.3
Zengin System ²	13.9	9.7	7,777.0	+ 6.9
Bill and Check Clearing System ³				
Tokyo Clearing House and other clearing houses	0.4	—	129.5	—
Electronic Clearing House	0.4	—	142.1	—
Securities Settlement Systems	Value (tril.yen)	Y/Y % chg.	Volume (thousands)	Y/Y % chg.
BOJ-NET Book-Entry System	118.2	+ 25.4	28.8	+ 13.9
Japan Securities Clearing Corporation (JGB OTC Transactions) ⁴	103.5	+ 23.7	6.8	15.3
Japan Securities Clearing Corporation (Listed Products) ⁴	4.5	+ 2.6	—	—
JASDEC DVP Clearing Corporation ⁴	2.8	+ 7.9	143.9	7.3
Japan Securities Depository Center ⁵				
of which: stocks	—	—	518.3	+ 0.6
dematerialized CP	2.7	6.0	0.4	-0.7
corporate and other bonds	0.7	-10.3	1.3	-1.2
investment trusts	0.8	-4.7	41.4	+ 0.9

Notes:

1. Average daily value and volume.
2. Figures for Zengin System show the value and volume of payments processed.
3. Figures for the Bill and Check Clearing System show the value and volume of bills and checks processed at the Tokyo Clearing House and other local clearing houses in Japan designated by the Minister of Justice (through November 2, 2022) and at the Electronic Clearing House (from November 4 onward).
4. Figures for Japan Securities Clearing Corporation (JSCC) and JASDEC DVP Clearing Corporation (JDCC) show the value of transactions processed by the central counterparties. Figures for JSCC (Listed Products) are for stock transactions executed on stock exchanges. Figures for JDCC are for stocks traded off exchange between securities companies and their customers.
5. Figures for stocks and investment trusts show the total amount of issuance, redemption and transfers. Figures for dematerialized CP and corporate and other bonds show the total amount of underwriting, redemption, redemption by purchase and transfers.

Sources: Japan Securities Clearing Corporation; Japan Securities Depository Center; Japanese Bankers Association; Japanese Banks' Payment Clearing Network; JASDEC DVP Clearing Corporation; CLS; and Bank of Japan.

(Chart 3-3) Value and Volume of Settlements via the BOJ-NET FTS



Notes: Average daily value and volume.
Source: Bank of Japan

The fees for the use of the settlement services offered by the Bank under the System are in principle set based on the following policy. First, the Bank considers that it should basically bear the costs for putting its infrastructure in place to offer its settlement services (including the costs of the development and maintenance of the systems). This is because the FMI operated by the Bank to execute funds and JGB settlements among participants, is a public infrastructure that is fundamental to the functioning of the financial and capital markets. Moreover, it is considered that investing to further enhance the safety and efficiency of its FMI in response to changes in the surrounding environment such as technological innovation is an inherent function of central banks. On the other hand, participants using these services online via the BOJ-NET can expect to benefit from the lighter operational burden and shorter processing time compared with those using these services via paper-based requests to the Bank. Therefore, when access is made via the BOJ-NET, the Bank collects the costs from participants for the connection with the BOJ-NET and the use of communication circuits in the form of fixed fees and transaction fees, which correspond to the benefits from online processing. The fixed fees are determined by the type of communication circuit, while the transaction fees are set according to the type of message format.

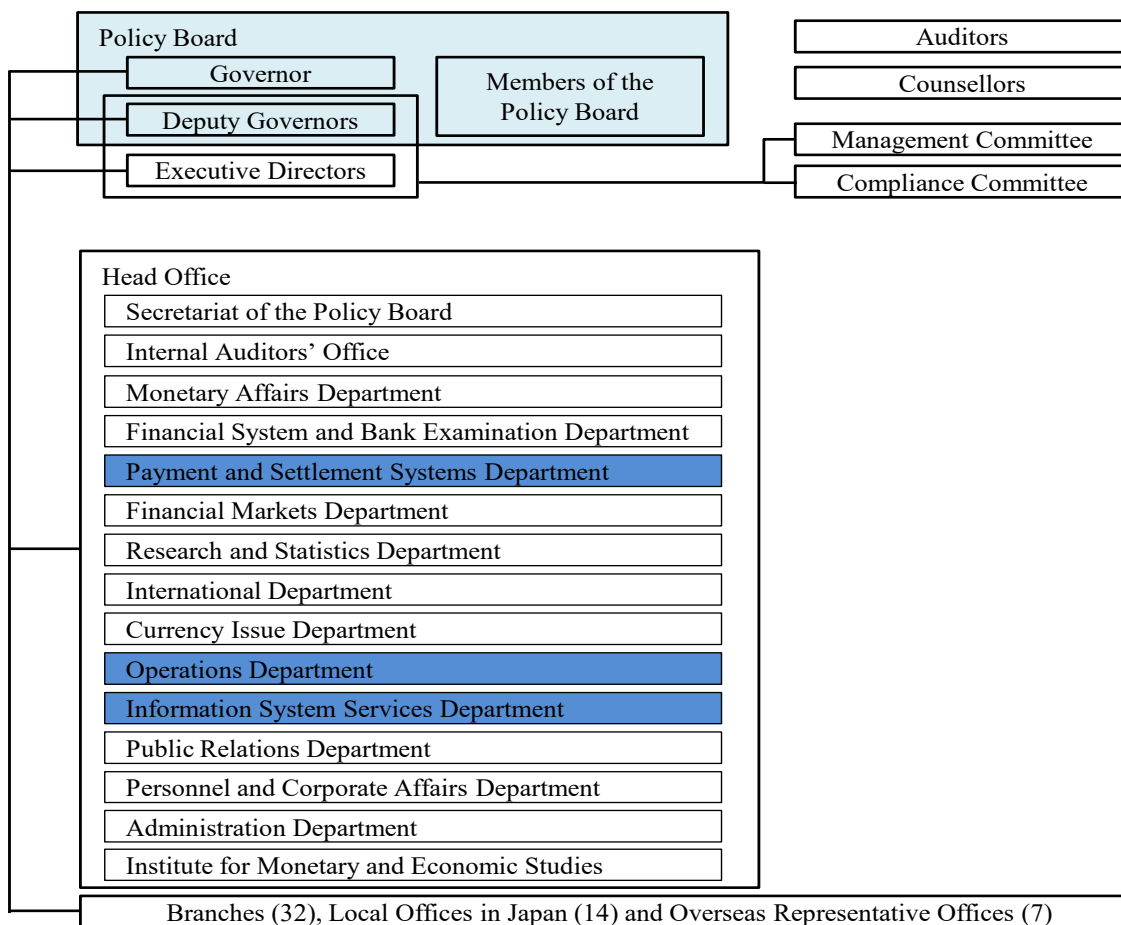
3-2. Organizational Structure

The Bank's governance structure is as shown in the next page (Chart 3-4). The stability of the System operated by the Bank is secured under this structure.

The Bank's organizational structure is set forth in the Act as well as in the Bank's articles of incorporation and Rules on Organization of the Bank. Its officers consist of the Governor, the Deputy Governors, Members of the Policy Board, Auditors, Executive Directors, and Counsellors ("Officers"). The Governor, the Deputy Governors, and Members of the Policy Board make up the Policy Board, the Bank's highest decision-making body. Under the Act, in addition to the matters concerning currency and monetary control, the following shall be decided by the Policy Board: those matters that are prescribed individually and those matters which the Policy Board finds particularly necessary, including important issues about the operation of the FMI.

To execute its day-to-day business as a central bank, the Bank has head office departments, branches, and local and overseas representative offices. Of these, the Payment and Settlement Systems Department, Operations Department, and Information System Services Department are primarily responsible for the planning and operation of the Systems.

(Chart 3-4) Organization Chart of the Bank



The Systems are operated as part of the regular business of the Bank stipulated in Article 33, Paragraph 1 of the Act and as the authorized business under Article 39, Paragraph 1 of the Act. As such, their operation and risk management are not to be in violation of these articles or the authorization, and they must also be consistent with the Bank's purpose as stipulated in Article 1, Paragraph 2 of the Act (which states, "the Bank of Japan's purpose is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system"). In addition, Article 5, Paragraph 1 of the Act stipulates, "In light of the public nature of its business and property, the Bank of Japan shall endeavor to conduct its business in a proper and efficient manner." The Policy Board has set down matters in accordance with each provision of the Act in the Bank's articles of incorporation, and all of these in combination form the Bank's basic policy on the operation and risk management of the Systems.

Under this policy, the Policy Board decides the eligibility criteria for participation in the

System, the basic framework to ensure smooth settlement of funds between current accounts and other important issues regarding the operation of the System. In the actual operation of the System, in line with the policy and the decisions, all functions -- including the relevant functions responsible for business operations and IT system management -- identify risks that would arise from the execution of their business and verify how these risks are managed and countermeasures are implemented. The situation of risk management in each function is periodically reported to the Policy Board. Similarly, relevant Officers, including the Governor, and the functions responsible for business operations and IT system management of the System are involved in the development and reviews of business procedures and IT system development.

In addition to the above, the Policy Board receives the results of internal audits from the Internal Auditors' Office on a regular basis, while the Auditors appointed by the Cabinet regularly audits Bank's business. These measures ensure that Bank's risk management is fully functioning.

Before making significant changes to the System, the Bank solicits opinions and proposals from participants and relevant parties in the market, as necessary. In addition, to identify relevant issues such as needs for improvements of the System, the Bank works continually to hold direct dialogues with and conduct surveys of participants, and exchanges information and views with the operators of major FMIs on practical issues surrounding FMIs in Japan.

3-3. Legal and Regulatory Framework

The Bank's funds transfers between current accounts and other businesses under the System are the Bank's regular business stipulated in Article 33, Paragraph 1 of the Act. In accordance with Article 39, Paragraph 1 of the Act, the Bank is authorized by the Prime Minister (whose power is delegated to the Commissioner of the Financial Services Agency) and the Minister of Finance to provide the BOJ-NET that electronically transmits payment instructions. These services are provided to fulfill the Bank's purpose, which "is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system" (as stipulated in Article 1, Paragraph 2 of the Act).

The rights and obligations between the Bank and participants under the Systems are set

out by the Bank in the rules on the current accounts and the BOJ-NET (FTS). These rules also state that the governing laws are Japanese laws and that the Tokyo District Court has exclusive jurisdiction over legal disputes. The legal basis of these rules is general laws such as the Japanese Civil and Commercial Codes and the contracts with the participants based on them. In case of a participant's default, the rights and obligations of relevant parties come under the jurisdiction of Japanese bankruptcy laws.

The Act contains the provision on the Bank's report concerning its business to the competent ministers, etc. With regard to the System, the Bank conducts self-assessment against the PFMI.

3-4. IT System for Funds Transfers and Business Process under the System

Funds transfers under the System are generally made in RTGS.¹⁰ To reduce settlement risks, the FXYCS and the large-value payments processed by the Zengin System were shifted to the BOJ-NET (FTS) for RTGS in 2008 and 2011, respectively. In addition, the settlement for a part of the Bank's open market operations and transactions to which the Bank or the Japanese government was a counterparty was made at a designated time. Since the new BOJ-NET (FTS) was fully launched in October 2015, this type of settlement has been abolished.

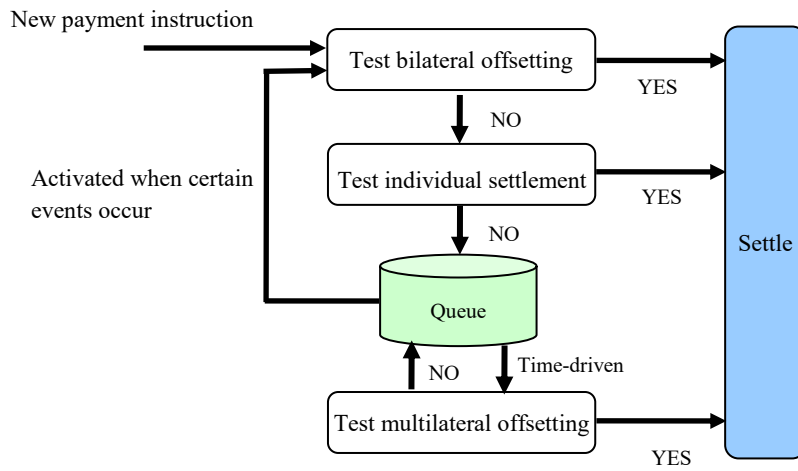
To ensure smooth settlement of funds under the System, the Bank provides the participants with intraday liquidity to be repaid by the closing hour in the form of an overdraft (intraday overdraft facility). The participants authorized by the Bank to use this facility may borrow funds from the Bank in the form of an overdraft interest-free up to the assessed value of collateral pledged in advance.

The Bank offers two types of accounts for funds transfers under the System: a home account and a queuing and offsetting (Q/O) account. The Bank offers LSFs to BOJ-NET users through the Q/O account. Market transactions are basically settled through the Q/O account. On the other hand, the funds settlement in the DVP of JGB transactions and Japanese yen settlements of CLS transactions are made through the home account. LSFs consist of "queuing" and "simultaneous processing of multiple payment instructions

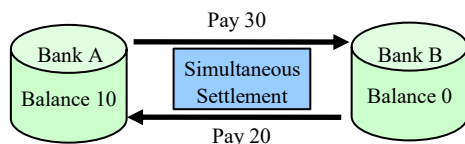
¹⁰ In RTGS, payment instructions given in the BOJ-NET (FTS) by the Bank or participants are executed immediately, per instruction once the BOJ-NET confirms that it has secured the funds to be debited.

(offsetting)." The former is a function that holds a payment instruction in a queue of the BOJ-NET (FTS) when the payment instruction received from a participant cannot be settled immediately due to insufficient funds to debit. The latter is a function that searches for combinations of payment instructions received or queued in the BOJ-NET (FTS) that will not end up with insufficient funds to debit and executes the settlement of the payment instructions. There are two types of search algorithms: "bilateral simultaneous settlement" (bilateral offsetting) and "multilateral simultaneous settlement" (multilateral offsetting). Bilateral offsetting searches for a pair of offsetting payment instructions that can be settled simultaneously each time when certain events occur, such as the sending of a new payment instruction or accrual in the Q/O account balances. The multilateral offsetting attempts to find a group of offsetting transactions from all queued instructions of all the participants at a certain fixed time (eight times a day, at about one-hour intervals starting from 10:30). In both cases, settlements are executed on a gross basis per transaction (i.e., netting is not conducted).

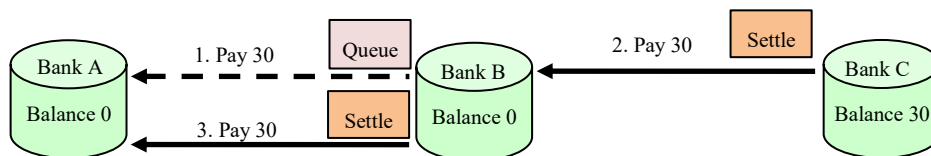
(Chart 3-5) Illustration of the LSFs



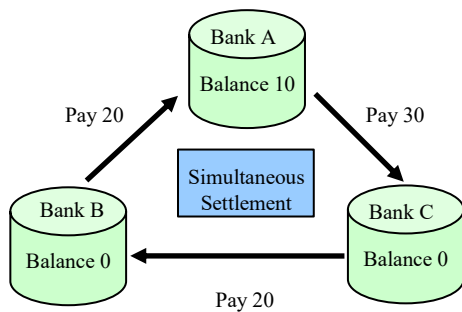
[Bilateral Offsetting]



[Individual settlement (after queuing)]



[Multilateral Offsetting]



Note: Numbers represent sequence of new payment instructions.

4. Explanations of Each Principle

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.

The important aspect in the operation of the Systems that requires a high degree of legal certainty is to ensure the settlement finality.

The important aspects of the Systems, as well as the rights and obligations between the Bank and the participants regarding funds transfers under the Systems, are set out by the Bank in the rules on the current accounts and the BOJ-NET (FTS). These rules stipulate that the rights and obligations arising from them are governed by Japanese laws, and that any litigation due to a dispute involving these rights and obligations is to be settled exclusively by the Tokyo District Court.¹¹

The legal basis of these rules is the Japanese Civil and Commercial Codes, the Act, other relevant laws and regulations, and contracts between the Bank and the participants. The fact that these laws, regulations, and procedures based on them have a high degree of legal certainty is secured through, for example, both internal and external legal reviews (with the intensity of the review depending on the degree of significance) at the time of their introduction or revision, or at the time of the introduction of new relevant laws and regulations. Since there are no rules in the Japanese bankruptcy laws that are equivalent to the so-called "zero-hour rule," transactions effected before the default will not be voided under the insolvency proceedings.

Key Consideration 2: An FMI should have rules, procedures, and contracts that are

¹¹ The Bank does not generally allow for remote access to the System (i.e., participation in the System by an institution that has no head or branch offices in Japan). The only exception to this is the CLS Bank (New York), which specializes in settling foreign exchange transactions and other funds transfers, but for funds transfers under the System there are no differences with any other participants in terms of the governing laws and jurisdiction.

clear, understandable, and consistent with relevant laws and regulations.

The rules set out by the Bank on the current accounts and on the use of the BOJ-NET (FTS) are made public.¹² Publically available are not only the Japanese Civil and Commercial Codes, the Act, and other relevant laws and regulations that provide legal basis for these rules, but also important rules and procedures, such as the criteria for the selection of participants, the use of the intraday overdraft facility, and the basic guidelines on the eligible collateral that supports the provision of such a facility.

As described under Key Consideration 1, it is secured that the rules, procedures, and contracts pertaining to the Systems are clear, understandable, and consistent with the relevant laws and regulations by internal and external review procedures at the time of their introduction or revision. Among important issues regarding the Systems, the following shall be decided by the Policy Board in accordance with the Act (Article 15, Paragraph 2): those matters that are prescribed individually in the Act and those matters which the Policy Board finds particularly necessary.

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.

When a participant opens a current account or commences the use of the BOJ-NET, the Bank notifies the participant in writing or through its website of rules pertaining to the Systems. Such rules are also published on the Bank's website. In addition, when amending the rules due to IT system improvements or changes in the surrounding environment, the Bank notifies participants of the amendment in writing or through its website, and thus participants are in a position to easily access the latest information.

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.

¹² The rules are available only in Japanese.

As stated under Key Consideration 1, the fact that the rules pertaining to the Systems are enforceable with a high degree of certainty under Japanese laws is ensured through, for example, both internal and external legal reviews at the time of their introduction or revision, or at the time of the introduction of new relevant laws and regulations.

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.

The Bank does not conduct business related to the System in multiple jurisdictions.

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 Bank operates the System placing high priority both on the safety and efficiency of the System in accordance with the relevant laws and regulations. With respect to safety, the Bank's purpose to smoothly and stably operate the FMI derives from Article 1, Paragraph 2 of the Act, where it stipulates that the Bank's "purpose is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system." As for efficiency, the Bank, in light of the public nature of its business and property, is required to conduct its business in a proper and efficient manner as called for in Article 5, Paragraph 1 of the Act, giving due consideration to its financial soundness. In conducting the Bank's business, as provided for by the Act, the Policy Board decides its basic policy, and the Governor, relevant Officers, and employees execute them under the basic policy. The Act also stipulates that the Auditors appointed by the Cabinet shall audit the Bank's business.

The Bank publishes on a regular basis its *Payment and Settlement Systems Report*, describing the efforts made by the Bank and relevant institutions to improve the safety and efficiency of the FMIs. The report also assesses the extent to which the Bank has attained its objectives. The Bank also releases the *Annual Review*, which is a comprehensive description of the Bank's policy and business, including the operations of the System, as required by the Act.

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.

The operational stability of the System is ensured through the governance arrangements of the Bank.

The Bank's organization is managed in accordance with the Act, articles of incorporation, and Rules on Organization of the Bank, all of which are made public. Specifically, at the Bank, the Policy Board, as the highest decision-making-body, decides the basic policies on policy, business, and organizational matters; based on these policies, the Governor and other relevant Officers, as well as head office departments, branches, and local and overseas representative offices, conduct business according to their jurisdiction. The operation of the Systems as the Bank's regular business under Article 33, Paragraph 1 of the Act and as the authorized business under Article 39, Paragraph 1 of the Act is also conducted under the above regime.

The Bank is the operator of the System and the overseer of private-sector FMIs. Mindful of this dual role that could cause conflicts of interest, the Bank strives to avoid the misunderstanding that it conducts the oversight of private-sector FMIs to take the advantage of the operation of the System. For example, the oversight of private-sector FMIs is conducted by a function that is separate from the one that operates the System. With regard to the System, the Bank conducts self-assessments against the PFMI.

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 functioning, 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.

The Act and articles of incorporation set forth the matters that should be decided by the Policy Board, the Bank's highest decision-making body. On the management of the Policy Board, the Act and articles of incorporation call for a quorum of at least two-thirds of the total number of incumbent Board members, including its chairperson, to hold a meeting and to take a vote. In addition, proceedings are determined by a majority vote of the attending members; when yes and no votes stand at parity, it is stipulated that the

chairperson is to decide. The Act and articles of incorporation also stipulate that the Governor and the Deputy Governors shall not have the authority of representation with regard to matters for which their interests and the interest of the Bank conflict. Regarding the management of proceedings at Policy Board meetings, the procedures are set forth by the Policy Board.

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).

The Policy Board consists of nine members. They are the Governor, two Deputy Governors, and six Members of the Policy Board that are all appointed by the Cabinet, subject to the consent of the House of Representatives and the House of Councilors in accordance with the Act. Members of the Policy Board shall be appointed from among persons with relevant knowledge and experience including experts on the economy or finance.

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.

The business of the Bank is executed by the Governor, the Deputy Governors, and Executive Directors under the basic policy set by the Policy Board. The responsibilities and powers of these Officers are set forth by the Act and articles of incorporation, as well as Rules on Organization of the Bank. Specifically, the Governor represents the Bank and exercises general control over its business in accordance with decisions made by the Policy Board, while the Deputy Governors, in accordance with the decisions made by the Governor, represent the Bank, and administer the business of the Bank assisting the Governor. The Executive Directors, in accordance with the decisions made by the Governor, administer the business of the Bank assisting the Governor and the Deputy Governors. The specific responsibilities of the Deputy Governors and Executive Directors are decided by the Governor and are made public.

The Officers of the Bank are appointed in accordance with the provisions of the Act. Among the Officers administering the business of the Bank, the Governor and the Deputy Governors are appointed by the Cabinet, subject to the consent of the House of Representatives and the House of Councilors, while Executive Directors are appointed by the Minister of Finance based on the Policy Board's recommendation.

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.

The Systems are operated as the Bank's regular business under Article 33, Paragraph 1 of the Act and as the authorized business under Article 39, Paragraph 1 of the Act. As such, their operation and risk management are not to be in violation of these articles or the authorization, and they must also be consistent with the Bank's purpose stipulated in Article 1, Paragraph 2 of the Act (which states, "the Bank of Japan's purpose is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system"). In addition, Article 5, Paragraph 1 of the Act stipulates, "In light of the public nature of its business and property, the Bank of Japan shall endeavor to conduct its business in a proper and efficient manner." The Policy Board has set down matters in accordance with each provision of the Act in the Bank's articles of incorporation, and all of these in combination form the Bank's basic policy on the operation and risk management of the Systems.

Under this policy, the Policy Board decides the eligibility criteria for participation in the System, the basic framework to ensure smooth settlement of funds via current accounts, and other important issues regarding the operation of the System. In the actual operation of the System, in line with the policy and the decisions, all functions -- including the relevant functions responsible for business operations and IT system management -- identify risks that would arise from the execution of their business and verify how these risks are managed and countermeasures are implemented. The situation of risk management in each function is periodically reported to the Policy Board. Similarly,

relevant Officers, including the Governor, and the functions responsible for business operations and IT system management of the System are involved in development and review of the business procedures and in IT system development.

In addition to the above, the Policy Board receives the result of internal audits by the Internal Auditors' Office on regular basis, while the Auditors appointed by the Cabinet regularly audit the Bank's business. These measures ensure that the Bank's risk management is fully functioning.

As to decision making at the time of crisis or in emergencies, the Bank establishes procedures that allow flexibility in the management of the Policy Board, and set forth in advance internal procedures that are to be referred to by each function in case of extraordinary situations. Especially for measures against disasters, in accordance with the Basic Act on Disaster Control Measures and other relevant laws and regulations, the Bank has developed and made public its business continuity plans stating the selection of businesses to be covered in case of emergencies, securing of personnel and supplies, information gathering, and arrangements for communication with relevant institutions.

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.

Before making significant changes in the System, the Bank publishes its basic policy in advance or discloses it to relevant stakeholders and solicits opinions and proposals from participants and relevant parties in the market, as necessary, thereby ensuring that there is sufficient time for preparation before the changes are implemented. In addition, to identify the needs for improvements in the business itself and the operation of the business, the Bank works continually to hold direct dialogues with and conduct surveys of participants, and exchange information and views with the operators of major FMIs on practical issues surrounding FMIs in Japan.

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.

The Bank's basic policy on the operation and risk management pertaining to the Systems are as stated under Principle 2, Key Consideration 6. In the actual operation of the Systems, in accordance with the basic policy and decisions by the Policy Board on risk management, all functions -- including business operations and IT system management, either individually according to their jurisdiction or in collaboration with other functions -- analyze and consider risks (such as credit, liquidity, and operational risks) that could affect smooth operation of the System to identify and manage them. In addition, the Bank establishes and implements necessary control procedures.

The management of individual risks is as described under the Principles corresponding to the individual risks (Principle 4 and after).

The Policy Board receives reports on the situation of risk management in each function on a regular basis, and also receives regular reports of internal audits by the Internal Auditors' Office. Separately, the Auditors audit the Bank's business, and the outline of the results is published in the *Annual Review*.

The risk management framework for the operation of the System is subject to reviews in consideration of changes in the situation of risk management, economic and market trends, relevant laws and regulations, market practices, and so on.

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.

To manage and contain risks (e.g., credit, liquidity and operational risks) pertaining to participants, the Bank publishes its eligibility criteria for participants. In addition, the Bank manages risks associated with participants and provides information on countermeasures against these risks through screening when selecting participants, on-site examinations and monitoring of participants, oversight of FMIs that are also participants, and publication of the *Payment and Settlement Systems Report*.

As stated in Principle 4, Key Consideration 1, from the viewpoint of ensuring smooth settlement of funds under the System, the Bank sets, in advance, lending terms for the provision of intraday overdraft (e.g., the due date of repayment, types of eligible collateral, and lending cap) and discloses them to participants.

After providing information in this manner, to manage and contain risks that a participant may impose on the System, the Bank, based on the provisions of the contracts for the use of these services, holds the right to terminate the current account and the contract to use the BOJ-NET (FTS), and the right to limit the use of the BOJ-NET (FTS) for a period of time, when a participant violates the rules of the Systems or when a situation might arise to impede the smooth operation of the BOJ-NET (FTS).

As for the appropriate incentives per risk types, see descriptions under each Principle corresponding to the risks.

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.

The operation of the System is not predicated on the provision of certain services by other entities. Therefore, even if other entities face problems, the probability of the System facing difficulty in its operations due to knock-on effects from them is low.

On the other hand, as the System is being used for (1) settlement of funds between participants in the interbank money market and the foreign exchange market, (2) settlement of private-sector payment systems (the Zengin System and the Bill and Check

Clearing System¹³), and (3) settlement of the cash leg arising from the clearing and the settlement system for securities, derivatives and other financial products, disruptions arising from business processing or IT system of the System could spread to other entities.

As to the risk of such disruptions arising in the System and spreading to other entities, as stated in Principle 2, Key Consideration 6, in accordance with its basic policy and decisions by the Policy Board on risk management, each function -- including the relevant function responsible for business operations and IT system management -- identifies risks that would arise from the execution of its business and verifies how these risks are managed and countermeasures are implemented. Each function's risk management status is reported periodically to the Policy Board. In addition, the Bank has spelled out procedures designed to ensure business continuity in the face of potential disruptions and notifies participants and other entities in advance. Moreover, through drills that deal with system disruption scenarios and through the oversight of other FMIs, the Bank regularly verifies the spillover effects of such disruptions and the effectiveness of these FMIs' responses to these effects.

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.

This Key Consideration does not apply to FMIs operated by central banks.

¹³ The System was previously used for settlement of net positions arising from multiple bill and check clearing houses including the Tokyo Clearing House. Since November 2022, the System has been used for settlement of net positions arising from the Electronic Clearing House.

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 Central counterparty (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.

Credit risk for the Bank

The Bank does not become a counterparty to individual funds settlements between participants.

Nevertheless, since the Bank, with the aim to ensure smooth settlement of funds under the System, extends credit in the form of an intraday overdraft to the participants it has authorized to use such a facility when requested, it is exposed to the credit risk of the borrower until the overdraft is repaid. Therefore, in providing the intraday overdraft, the Bank requires the participant to pledge, in advance, eligible collateral in an amount sufficient to cover the lending and manages the amount of credit extended to keep the credit extension within the value of the pledged collateral.

Specifically, the Bank sets a lending cap per participant (equal to the sum of the assessed value of all the eligible collateral pledged to the Bank by a participant) and measures use of the intraday overdraft facility by the participant on a real-time basis. It also conducts on-site examinations and monitoring with the aim of maintaining an accurate grasp of the business and property of participants and other parties. In addition, the Bank provides an incentive for participants to make repayments before the closing hour by imposing past-due interest (at the Basic Loan Rate plus 6 percent) on any outstanding balance of intraday overdraft present at the closing hour.

As described under Principle 5, the eligible collateral the Bank accepts for the use of the intraday overdraft facility is managed under a robust framework.

Through these measures, the Bank manages the risk on losses from current and potential future exposures so that they are sufficiently low.

Credit risks for participants

Although credit risks for participants are not risks arising from the use of the System, generally, between the trade and final settlement, participants are exposed to the credit risk that results from an unrecoverable loss from the counterparty's default. Fully mindful of such credit risk, the Bank has introduced RTGS to the BOJ-NET (FTS), which executes the funds transfers, and debits and credits under the System. As payment instructions sent to the BOJ-NET (FTS) are settled per instruction immediately after the BOJ-NET (FTS) accepts them, even if a participant default, the direct impact of a realized loss stemming from the credit risk would be limited to the counterparty of the defaulter, and the possibility of the turmoil spreading through the System to other participants and the entire financial system would remain limited. Furthermore, the Bank strives to identify credit risks arising from funds transfers faced by participants through its on-site examinations and monitoring of the participants.

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.

See Key Consideration 1.

Key Consideration 3: A payment system or Securities settlement system (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.

As described under Key Consideration 1, the Bank manages the risk on losses from current and potential future exposures so that they are sufficiently low.

Funds transfers under the System do not use a deferred net settlement.

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.

This Key Consideration does not apply to the System.

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.

This Key Consideration does not apply to the System.

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.

This Key Consideration does not apply to the System.

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.

As described under Key Consideration 1, the Bank manages credit exposures arising from both current and potential future exposures so that they are sufficiently low. As such, it does not adopt rules for the allocation of uncovered credit losses stemming from a participant's default among the participants under the System.

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' 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.

As described under Principle 4, Key Consideration 1, the Bank, with the aim of ensuring smooth settlement of funds under the System, provides intraday overdrafts secured by collateral to participants it has authorized to use intraday overdrafts when requested. To ensure the soundness of the Bank's assets, the eligible collateral for intraday overdrafts comprises financial instruments that are recognized by the Bank to have sufficient creditworthiness and marketability, and that do not impair the exercise of the Bank's security rights and other rights against the pledged collateral.¹⁴ These measures are the same as those for the collateral used in the credit extension for the currency and monetary control.

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

The value of collateral the Bank accepts in providing the intraday overdraft is generally calculated by applying, by type and the period to maturity, a certain haircut to its market value of the collateral. The valuation of the collateral is generally marked to market on a daily basis.¹⁵

Taking into account stressed market conditions, haircuts are based on data on long-term trends in market prices, interest rates, and spreads among different financial instruments. Moreover, generally, haircuts are reviewed about once a year.

¹⁴ With regard to specific wrong-way risk, the Bank identifies and mitigates these by, for example, deeming ineligible the debt of participants, debt guaranteed by them, and the debt of their affiliated companies.

¹⁵ As for foreign bonds, the Bank marks to market weekly in principle.

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.

As described under Key Consideration 2, the Bank establishes stable and conservative haircuts for collateral that is accepted to provide intraday overdrafts.

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.

As described under Key Consideration 1, since the collateral the Bank accepts is that which is recognized by the Bank to have sufficient creditworthiness and marketability, and which does not impair the exercise of its security rights and other rights against the pledged collateral, risks arising from concentrated holding of certain assets are sufficiently contained.

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

The eligible foreign securities the Bank accepts as collateral in providing intraday overdrafts are those that are recognized by the Bank to have sufficient creditworthiness and marketability, and that do not impair the exercise of its security rights and other rights against the pledged collateral.

On the basis above, the Bank establishes sufficiently conservative haircuts. Moreover, to cope with the legal risks stemming from the application of foreign laws and the operational risks arising from the fact that such assets are located abroad, the Bank puts the contracts with the parties pledging the collateral, as well as business procedures, through regular legal reviews by a law firm in the relevant foreign jurisdiction.

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

The Bank's credit extension and collateral for it are centrally managed by the BOJ-NET. The Bank offers the following functions on the BOJ-NET, ensuring operational flexibility in times of market stress.

- (1) An inquiry function to monitor the amount of credit extended, including the outstanding balance of the intraday overdraft (monitoring function)
- (2) A function that determines whether the eligible collateral can be accepted or not
- (3) A function that enables the use of collateral for different types of credit extension (collateral once accepted can be used for any type of credit extension provided by the Bank [pooled collateral])
- (4) A function to calculate the value of collateral
- (5) A function to return the collateral on the due date
- (6) A function to check collateral shortfalls

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.

This Principle does not apply to the System.

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.

Liquidity risk for the Bank

The Bank does not become a counterparty to individual funds settlements between participants.

To ensure the smooth settlement of funds, the Bank extends credit in the form of an intraday overdraft to the participants it has authorized to use such a facility. However, there is no liquidity constraint for the Bank in providing this facility. Hence, Key Considerations 3 and 5 to 10 do not apply to the Bank.

Liquidity risks for the participants

Although liquidity risks for the participants are not risks arising from the settlement of funds under the System, generally, between the trade and final settlement, participants face a liquidity risk that the participants will not be able to acquire a sufficient amount of liquidity at the point of time necessary to settle. Fully mindful of such a liquidity risk, the Bank operates the System as follows.

Funds transfers under the System that use the BOJ-NET (FTS) are processed in RTGS, which in turn requires the participants to send each payment instruction after acquiring the funds necessary for settlement. Therefore, if a participant attempts to make

payments before receiving payments from others, it needs to take measures such as drawing intraday credit from others.

To ensure the smooth settlement of funds under the System, the Bank extends credit in the form of an intraday overdraft to participants that has authorized to use such a facility. In addition, the Bank has built a more robust RTGS by providing LSFs¹⁶ in the BOJ-NET (FTS) that reduce the liquidity procurement costs for participants, enable earlier settlements as a whole, and lead to the efficient reuse of liquidity. As a result, abundant liquidity has been provided in the System to contain gridlocks in market transactions, and thus liquidity risks among participants arising from RTGS have not yet arisen.

The Bank, as described under Principle 4, Key Consideration 1, has a robust credit risk management framework for providing intraday overdrafts.

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.

Liquidity risk for the Bank

See Key Consideration 1.

Liquidity risk for the participants

Generally, between the trade and final settlement, participants face a liquidity risk that the participants will not be able to acquire a sufficient amount of liquidity at the point of time necessary to settle. As described under Key Consideration 1, to make the availability of intraday liquidity high, the Bank extends credit in the form of an intraday overdraft and provides LSFs to participants through the BOJ-NET (FTS). Moreover, it conducts intraday monitoring of, for example, settlement and funding flows as well as intraday overdraft activity. At the same time, to avoid liquidity risks faced by participants, the Bank conducts on-site examinations and monitoring, both covering topics including participants' management of daily liquidity.

¹⁶ See Footnote 3.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

This Key Consideration does not apply to the System.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

As described in Key Consideration 1, this Key Consideration does not apply to the Bank.

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.

The point of time when the funds settlements under the System are final is stipulated in the rules on the current accounts as the time when the Bank confirms the settlement and enters it in its current account ledger. The rules are disclosed to participants and are available on the website of the Bank. In addition, the finality of the funds settlements under the System (i.e., the execution of the obligation) is ensured under the applicable laws and regulations, including insolvency laws. Furthermore, the legal certainty of settlement finality is verified by legal reviews by external experts.

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. A Large-value payment system (LVPS) or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

Funds settlement under the System is designed to ensure final settlement intraday. Such a mechanism is stipulated in the Bank's rules on the current accounts and the contracts for the use of the BOJ-NET (FTS).

Funds settlement through the BOJ-NET (FTS) is basically executed in RTGS, and final settlement is completed immediately on the settlement day. Participants are notified of the result of processing using the BOJ-NET (FTS) promptly after the completion of the settlement.

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 contract between the Bank and a participant stipulates when the funds transfer

requests sent to the BOJ-NET (FTS) can be cancelled and, where revocable, the time limit. When the Bank receives funds transfer requests through the home account, they are promptly processed and immediately booked in the current account ledger. Therefore, such requests cannot be canceled. On the other hand, some funds transfer requests that are processed when certain conditions are fulfilled are eligible for cancelation but others are not.

For those funds transfer requests that are eligible for cancelation, participants who sent the requests can cancel them only before the settlement conditions are fulfilled. The time limit may be postponed exceptionally upon the request of a participant, taken the circumstances into consideration. Such a treatment is stipulated in the contracts between the Bank and the participants.

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 minimize 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.

Funds settlement under the System, which is Japanese yen settlement, is conducted in central bank money.

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.

Funds settlement under the System, which is Japanese yen settlement, is conducted in central bank money.

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.

Funds settlement under the System, which is Japanese yen settlement, is conducted in central bank money.

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

Funds settlement under the System, which is Japanese yen settlement, is conducted in central bank money on the books of the Bank. With regard to credit risk and liquidity risk, they are as described under Principles 4 and 7.

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.

For the funds settlement under the System, settlement banks are not used.

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 does not apply to the System.

Principle 11: Central securities depositories (CSDs)

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

This Principle does not apply to the System.

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 transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

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

The System is used for the funds settlement in the DVP settlement of book-entry transfers of JGBs and other securities based on the Act on Book-Entry of Company Bonds and Shares.¹⁷ The System contributes to the elimination of principal risks of the securities settled through book-entry transfer systems.

¹⁷ The JGB book-entry system and book-entry transfer system for others such as stocks, commercial paper, corporate bonds and investment trusts are administered by the Bank and Japan Securities Depository Center (JASDEC), respectively.

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.

The Bank does not become a counterparty to individual funds transfers between the participants. Moreover, as described under Principle 4, the Bank manages credit risks arising from credit extension to participants in the form of an intraday overdraft by requiring them to pledge eligible collateral, so that losses from a participant default are sufficiently low.

Under the RTGS system, payment instructions sent to the BOJ-NET (FTS) are settled per instruction immediately after the BOJ-NET (FTS) accepts them. As such, even if a participant defaults, the direct impact would be limited to the counterparty of the defaulter, and the possibility that the effects of the turmoil would spread through the System to other participants and the entire financial system would remain limited.

As the operator of the System, the Bank stipulates in its rules on the current accounts that it may terminate the account when it recognizes that there is a serious reason why it cannot continue current account transactions. The above-mentioned rules also provide, after noting explicitly that it will be pursued only to achieve the purpose "to ensure appropriate operation of current account transactions," that the Bank may establish necessary provisions or take necessary measures other than those stated in the rules.

With respect to the BOJ-NET (FTS), the contracts with participants using this network stipulate that in the event that the Bank recognizes that there is a possibility that the smooth use of the BOJ-NET (FTS) could be jeopardized, it may terminate the contract or restrict the use of the BOJ-NET for a certain period of time. Furthermore, the contracts between the Bank and the participants provide, after noting explicitly that it will be

pursued only to achieve the purpose "to ensure the appropriate use of the BOJ-NET for current account transactions," that the Bank may establish necessary provisions or take necessary measures other than those stated in the contracts.

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.

As described under Key Consideration 1, the Bank stipulates in its rules on the current accounts that it may terminate the account when it recognizes that there is a serious reason why it cannot continue current account transactions. In addition, only to the extent of achieving the purpose "to ensure appropriate operation of current account transactions," the Bank may establish necessary provisions or take necessary measures. In addition to the above, the Bank has put in place a necessary business processing framework.

With respect to the BOJ-NET (FTS), the contract on the use of the BOJ-NET stipulates that in the event the Bank recognizes that there is a possibility that the smooth use of the BOJ-NET (FTS) would be jeopardized, it may terminate the contract or restrict the use of the BOJ-NET (FTS) for a certain period of time. In addition, the contract stipulates that only to the extent of achieving the purpose "to ensure the appropriate use of the BOJ-NET for current account transactions," the Bank may establish necessary provisions or take necessary measures. In addition to the above, the Bank has put in place a necessary business processing framework.

Whenever the above necessary action is taken, the Bank has an operational framework to appropriately notify other participants.

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

The Bank stipulates in the rules on the current accounts that it may take necessary measures to ensure the appropriate operation of current account transactions, and publishes the rules.

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.

The Bank verifies and reviews on a continuous basis the effectiveness of the measures taken in the event of a participant default and the procedures such as to restrict the use of the BOJ-NET (FTS).

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.

This Principle does not apply to the System.

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 materialise. 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.

The Bank's basic policy for the operation and risk management of the Systems are as described under Principle 2, Key Consideration 6. General business risks in the System are also managed under this policy.

The Systems are operated as the Bank's regular business under Article 33, Paragraph 1 of the Act and as the authorized business under Article 39, Paragraph 1 of the Act. As such, their operation and risk management are not to be in violation of these articles or the authorization, and they must also be consistent with the Bank's purpose stipulated in Article 1, Paragraph 2 of the Act (which states, "the Bank of Japan's purpose is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system"). In addition, Article 5, Paragraph 1 of the Act stipulates, "In light of the public nature of its business and property, the Bank of Japan shall endeavor to conduct its business in a proper and efficient manner." The Policy Board has set down matters in accordance with each provision of the Act in the Bank's articles of incorporation, and all of these in combination form the Bank's basic policy on the operation and risk management of the Systems.

Under this policy, the Policy Board decides the eligibility criteria for participation in the System, the basic framework to ensure smooth settlement of funds via current accounts, and other important issues regarding the operation of the System. In the actual operation of the System, in line with the policy and the decisions, all functions -- including the relevant functions responsible for business operations and IT system management --

identify risks that would arise from the execution of their business and verify how these risks are managed and countermeasures are implemented. The situation of risk management in each function is periodically reported to the Policy Board.

The fees for the use of the settlement services offered by the Bank under the System are in principle set based on the following policy. First, the Bank considers that it should basically bear the costs for putting its infrastructure in place to offer its settlement services (including the costs of the development and maintenance of the systems). This is because the FMI operated by the Bank to execute funds and JGB settlements among participants, is a public infrastructure that is fundamental to the functioning of the financial and capital markets. Moreover, it is considered that investing to further enhance the safety and efficiency of its FMI in response to changes in the surrounding environment such as technological innovation is an inherent function of central banks. On the other hand, participants using these services online via the BOJ-NET can expect to benefit from the lighter operational burden and shorter processing time compared with those using these services via paper-based requests to the Bank. Therefore, when access is made via the BOJ-NET, the Bank collects the costs from participants for the connection with the BOJ-NET and the use of communication circuits in the form of fixed fees and transaction fees, which correspond to the benefits from online processing. The fixed fees are determined by the type of communication circuit, while the transaction fees are set according to the type of message format.

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.

The Bank holds by itself yen funds deposits, as well as JGBs, bills, term loan receivables, and others that are pledged as collateral for intraday overdrafts from participants.

For other domestic securities, they are held in the Bank's account at Japan Securities Depository Center (JASDEC). JASDEC is a CSD designated by the Act on Book-Entry of Company Bonds and Shares, and is supervised by the Financial Services Agency and other relevant authorities. There are laws and regulations that apply to JASDEC to ensure governance based on the laws and regulations, financial grounds, and operational capability, and the PFMI applies to JASDEC as a CSD.

Foreign sovereign bonds (those of the United Kingdom, United States, Germany, and France) that are pledged as eligible foreign securities collateral are held in the Bank's accounts in foreign central banks. These central banks ensure appropriate governance, financial grounds, operational capability, etc.

With regard to electronically recorded monetary claims based on the Electronically Recorded Monetary Claims Act, they are electronically recorded at electronic monetary claims recording institutions that the Bank considers appropriate.

Beneficial interests of a trust in housing loans are managed by trust banks as trustee based on the Trust Act and other relevant laws and regulations.

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

JASDEC, the electronic monetary claim recording organization, and trust banks are located in the same jurisdiction and time zone as the Bank. On the other hand, the foreign central banks that hold the foreign sovereign bonds pledged for intraday overdraft collateral are located in different jurisdictions and time zones.

As described under Principle 5, Key Consideration 1, to maintain the soundness of the Bank's assets, the collateral the Bank accepts is that with sufficient creditworthiness and marketability, and that which does not impair the exercise of the Bank's security rights and other rights against the pledged collateral. Under the above circumstances, in all cases, the fact that prompt access to collateral assets is ensured is verified through both internal and external legal reviews and the validation of the operational process.

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.

As described in Key Consideration 1, the Bank's own assets and the collateral pledged by participants for intraday overdrafts are managed appropriately, and the external exposures in holding these assets are extremely low.

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.

The Bank does not invest its own asset or collateral pledged by participants for intraday overdrafts.

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 fulfillment 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.

The Bank's basic policy for the operation and risk management of the Systems are as described under Principle 2, Key Consideration 6. Operational risks in the System are also managed under this policy.

The Systems are operated as the Bank's regular business under Article 33, Paragraph 1 of the Act and as the authorized business under Article 39, Paragraph 1 of the Act. As such, their operation and risk management are not to be in violation of these articles or the authorization, and they must also be consistent with the Bank's purpose stipulated in Article 1, Paragraph 2 of the Act (which states, "the Bank of Japan's purpose is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system"). In addition, Article 5, Paragraph 1 of the Act stipulates, "In light of the public nature of its business and property, the Bank of Japan shall endeavor to conduct its business in a proper and efficient manner." The Policy Board has set down matters in accordance with each provision of the Act in the Bank's articles of incorporation, and all of these in combination form the Bank's basic policy on the operation and risk management of the Systems.

Under this policy, the Policy Board decides the eligibility criteria for participation in the System, the basic framework to ensure smooth settlement of funds via current accounts, and other important issues regarding the operation of the System. In the actual operation of the System, in line with the policy and the decisions, all functions -- including the

relevant functions responsible for business operations and IT system management -- identify risks that would arise from the execution of their business and verify how these risks are managed and countermeasures are implemented. The situation of risk management in each function is periodically reported to the Policy Board.

Similarly, in the development phase of the BOJ-NET (FTS), the Governor, other relevant Officers, and the relevant functions responsible for business operations and IT system management, identify operational risks in accordance with the system development policy decided by the senior management, and build a system that contains such risks. In addition, in deliberating the content of new services, the function responsible for business operations ensures the implementation of appropriate business processing by carefully examining the content of the business, identifying and establishing business processes that control operational risks, and establishing detailed business processing rules and procedures for both participants and the Bank. Furthermore, with respect to system disruptions, basic measures stating how to react to the Bank's system disruptions have been developed among all relevant functions in the Bank, including the relevant functions responsible for business operations and IT system management. The Bank ensures the continuity of appropriate business processing through continuous review of operational risks.

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.

As described under Key Consideration 1 and Principle 2, Key Consideration 6, in accordance with the basic policy and decisions by the Policy Board on risk management, and within the scope of organization and jurisdiction set forth by the Act, articles of incorporation and Rules on Organization of the Bank, all functions -- including relevant functions responsible for business operations and IT system management -- identify and control risks that may arise in the performance of their duties, and take necessary measures. The situation of risk management in each function is periodically reported to the Policy Board.

In addition, the Internal Auditors' Office conducts audits, and these results are verified by the Policy Board. Moreover, Auditors audit the Bank's business, and the outline of the results is published every fiscal year in the *Annual Review*.

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 Bank's purpose, under Article 1, Paragraph 2 of the Act, "is to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system." Under this purpose, the BOJ-NET (FTS) has gained credibility in its business processing because (1) it has sufficiently high operational availability, (2) there have been very few breakdowns, and (3) the System has operated stably for a considerable period of time. In accordance with the basic policy and the decisions by the Policy Board on risk management described under Principle 2, Key Consideration 6, the Bank aims to continue to maintain the sufficiently high operational availability of the BOJ-NET (FTS) and the stable operation of the System.

To ensure the information security of its computer systems, including the BOJ-NET (FTS), and the information processed by these systems, the Bank has documented its security policy (its principles on organizational structure and security measures to ensure information security). Under this policy, the Bank works to ensure information security. Moreover, the Bank monitors the system operations at its computer center at all times for early detection and correction of disruptions. It also has in place business continuity plans for potential disasters or disruptions. Through these measures, the Bank will seek to maintain its high operational reliability in the future.

The operational status of the BOJ-NET (FTS) and other computer systems is periodically reported to the Policy Board. In addition, as part of their verification and audit of the business of the Bank, Auditors and the Internal Auditors' Office verify and audit the status of the development and operation of the BOJ-NET (FTS).

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.

The Bank ensures that it has adequate capacity in business processing by conducting surveys to project future transaction volume, as necessary, taking into account the offering of new services, developments in other FMIs, and trends in financial markets.

Specifically, the Bank verifies the system capacity and performance of the BOJ-NET (FTS) periodically or when development or modification of the system is underway. The Bank also monitors daily transaction volume at all times and has maintained sufficient IT system capacity to meet the transaction demands on normal days as well as the foreseeable peak transaction volume. At present, recent records on the use and settlement of the BOJ-NET (FTS) show no signs of gross excess or shortage in IT system performance.

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

The Bank's security measures for the physical safety of its data centers, offices, as well as sites where its devices are located that are used for business processing, are stated in its information security policy (its basic principles on the organizational structure and safety measures) and rules on the security of its business offices. Specifically, there are rigorous controls on entering and leaving the Bank's data centers, the sites where devices are located. These locations are also guarded by locks and fire prevention measures.

As stated under Key Consideration 3, information security policy concerning the operation of the System is set in the Bank's information security policy.

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.

To ensure the operational reliability of the BOJ-NET (FTS), the Bank has duplicated not only the host computers at its main center but also important devices, such as central devices including telecommunication control units, circuits linking the Bank's head office with branches, and circuit exchange offices of telecommunication companies used by the head office and branches.

In case disruptions should occur at its main center, the Bank has established a backup center at a location sufficiently distant from the main center (i.e., approximately 500 kilometers away in Osaka), so that even if a disruption hits the main center, the Bank should be able to continue the provision of services under the System through processing at the backup center. Thus, the Bank has in place an operational framework to ensure smooth settlement of funds and financial market stability.

At the Bank's computer center, the Bank monitors the situation of the system operations at all times for early detection and correction of disruptions. Under this regime, when an event that would suspend the business processing at the main center is detected, the processing can be switched over to the backup center. The backup center can provide the same service as the main center, and the data at the main center are mirrored nearly on a real-time basis to the backup center. The operational procedures following the switchover to the backup center are documented, and there is an arrangement under which the business at the backup center will be carried out primarily by the Bank's branch staff in Osaka, which is the city where the backup center is located. It is expected that the business at the backup center will resume within two hours following a disruption.

If the Bank's branch cannot continue its business related to the BOJ-NET due to disasters or disruptions, the head office will take over the relevant business of the branch. Moreover, in order for a participant to be prepared for a situation where it is unable to execute business related to the BOJ-NET due to a disaster or disruption, the Bank requires participants to prepare their business continuity planning to switch to paper-based transactions or to use the BOJ-NET terminals at its other offices dedicated for the use at such times. Through these measures, the Bank aims to ensure that time-critical transactions are executed even in case of extreme circumstances.

The Bank conducts drills with participants about once a year, in which the scenario calls

for switching over to the backup center. The effectiveness of the switchover to the backup center is verified through these drills. In addition to them, the Bank has established business continuity arrangements in emergencies arising from disasters and other events, and verifies their effectiveness periodically through drills.

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.

The Bank's basic policy for the operation and risk management of the Systems are as described under Key Consideration 1 and Principle 2, Key Consideration 6. In the actual operation of the Systems, in accordance with the basic policy and the Policy Board decisions on risk management, all functions -- including business operations and IT system management, either individually according to their jurisdiction or in collaboration with other functions -- analyze and consider risks that could affect smooth operation of the System to identify and manage them. In addition, the Bank establishes and implements necessary control procedures.

Specifically, through timely and appropriate monitoring of the status of participants' system operations, the Bank manages the risks posed by their disruptions that may affect the operation of the Systems.

In addition, the BOJ-NET (FTS) encrypts messages sent via the telecommunication networks to protect secrets and prevent data tampering. Moreover, the Bank verifies the validity of the sender of the message through authentication using a password distributed to each operator and integrated-circuit (IC) cards. The BOJ-NET (FTS) is controlled in such a way that a user of the BOJ-NET (FTS) can only execute the business that is designated to that user in advance.

On the other hand, the identification, monitoring, and management of the risks where disruptions in the business processing in the Systems spread to other entities are as described under Principle 3, Key Consideration 3.

The Bank maintains close contact with other FMIs using the System for the funds

settlements through, among others, exchanges of communication trees in case of disruption and business processing procedures for business continuity. In establishing or amending such a regime, the Bank and the FMI duly discuss and coordinate to ensure their effectiveness.

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.

The eligibility criteria for selecting participants are stipulated in the rules set out and published by the Bank. Such criteria enable open and fair access to the System.

In accordance with the Bank's purpose stipulated in Article 1 of the Act, the criteria state that the Bank provides access to (1) institutions playing a key role in funds settlements, (2) institutions playing a key role in securities settlement, and (3) institutions playing a key intermediary role in interbank money markets. To ensure the safety in settlement of funds under the System, the Bank also sets requirements for participants regarding its business and operational conditions and business processing capabilities. The Bank evaluates operational conditions based on capital and liquidity adequacy, and soundness with regard to total loss-absorbing and recapitalization capacity. The specific criteria for each type of participants are set out in the detailed rules. If the institution corresponds to a "financial institution" as defined in Article 37 of the Act, the Bank requires such an institution to enter into a contract with the Bank under which it agrees to be subject to on-site examination by the Bank so that the Bank can grasp its operational condition and risk management structure. The Bank also requires FMIs that use the System to settle funds to enter into a contract with the Bank under which the FMI agrees to be subject to on-site examination by the Bank so that the Bank can adequately operate the System and the Bank's other business. These criteria are set appropriately from the viewpoint of ensuring the safety and efficiency of the System.

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 be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI

should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

As described under Key Consideration 1, the criteria for selecting participants are set appropriately from the viewpoint of ensuring the safety and efficiency of the System. The criteria are reviewed whenever necessary, for example, based on risks surrounding the System, changes in the financial market structure, and amendments in laws and regulations.

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.

The participants' compliance with the Bank's criteria is continuously monitored through on-site examination and monitoring of the participant by the Bank. In addition, FMIs that settle funds under the System are subject to the oversight.

Whenever a participant does not comply with the Bank's criteria, or is acknowledged to have the risk of impairing the smooth operation of the participant's funds settlements, the Bank takes appropriate measures to induce changes and intensify monitoring of the participant. The rules on the current accounts, which are the contract between the Bank and the participant for the use of such accounts, state that when the Bank acknowledges that there is a serious reason for the Bank to discontinue providing such an account, the Bank has the right to terminate the account. The rule is published on the Bank's website.

Principle 19: Tiered participation arrangements

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

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

The Bank collects information on indirect participation through settlement data under the System and surveys of and discussions with the participants. Through these activities, the Bank grasps basic information on (1) major customers that settle funds via participants (e.g., the number of customers, their names, the transaction volume and value, and their industry categories); (2) the settlement-related services that participants provide to their major customers; and (3) risks arising from these services and how these risks are managed.

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

As described under Key Consideration 1, the Bank conducts surveys of and discussions with participants, and through them the Bank identifies material dependencies that may affect the smooth settlements of funds under the System between the participants and their customers. Specifically, the Bank has identified dependencies where participants provide settlement business, credit extension, and liquidity provision to their customers.

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.

As described under Key Consideration 1, the Bank conducts settlement data collection

under the System, and surveys of and discussions with the participants. Through these activities, the Bank identifies major customers of a participant that have a considerable share of the transaction value under the System and customers of a participant that have a relatively higher transaction volume and value compared to other participants.

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

As described under Key Consideration 1, through settlement data collection under the System and surveys of and discussions with the participants, the Bank grasps and verifies the risks arising from the tiered participation under the System.

Through these activities, the Bank has confirmed that the number of major customers of a participant that have a considerable share of the transaction value under the System, as well as the customers of a participant that have a relatively higher transaction volume and value compared to other participants, is small. Hence, the Bank evaluates that risks arising from tiered participation arrangements under the System are limited.

Principle 20: FMI links

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

This Principle does not apply to the System.

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 cleared, settled, or recorded; and use of technology and procedures.

In making decisions or changes on services offered under the Systems, the Bank conducts public consultations as necessary and, to grasp the views and requests of participants, regularly holds direct dialogues with and conducts surveys of participants. For example, in developing the new BOJ-NET, which was fully launched in October 2015, the Bank adopted a basic policy to (1) use the latest IT, (2) employ a more flexible architecture to take account of future changes, and (3) incorporate enhanced accessibility. In addition, through public consultation and a forum of participants, the Bank grasped their views and requests. Based on such dialogues and survey results, the Bank makes its analyses on the improvements of the safety and efficiency as concrete as possible, and assesses the needs of its participants and the markets it serves.

With regard to the IT system performance of the BOJ-NET (FTS), the Bank verifies the system capacity and performance periodically or when development or modification of the system is underway. The Bank also monitors daily transaction volume at all times and has maintained sufficient IT system capacity to meet the transaction demands on normal days as well as the foreseeable peak transaction volume. At present, recent records on the use and settlement of the BOJ-NET (FTS) show no signs of gross excess or shortage in IT system performance.

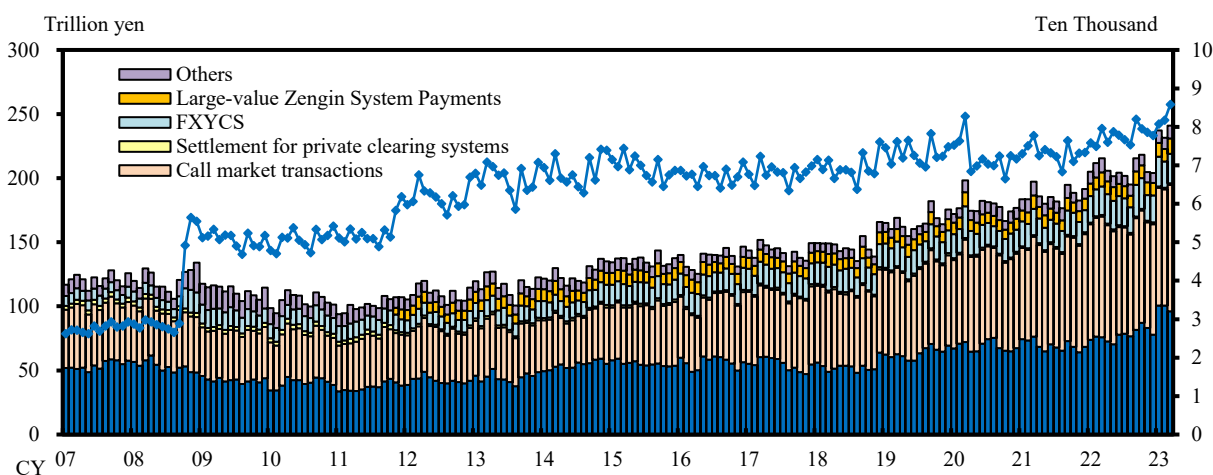
Key Consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

The Bank operates the System based on the Bank's purpose "to ensure smooth settlement

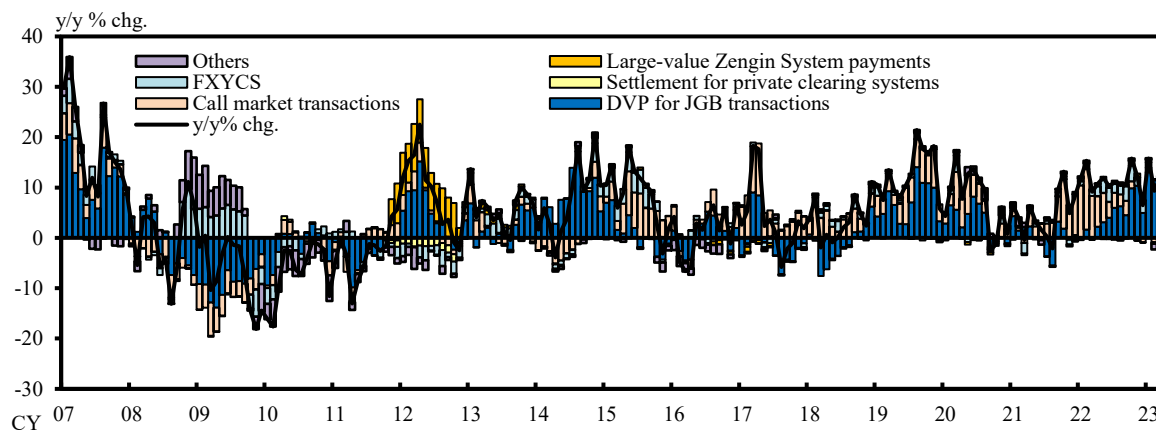
of funds among banks and other financial institutions, thereby contributing to the maintenance of stability of the financial system" stipulated in Article 1, Paragraph 2 of the Act.

This purpose has been sufficiently achieved, as (1) the BOJ-NET (FTS) has maintained high operational availability for a long period of time, (2) there have been very few breakdowns (see Principle 17), and (3) the volume and value of settlements have followed a stable trend as shown in the charts below (Charts 4-1 and 4-2). The levels of funds settlements under the System and operational status of the BOJ-NET are periodically reported to the Policy Board. Trends in the value and volume of settlements under the System are published as monthly statistics.

(Chart 4-1) Trends in Funds Settlements under the System



(Chart 4-2) Change in Funds Settlements under the System



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

The Bank ensures that it has adequate capacity in business processing by conducting surveys to project future transaction volume that takes into account the developments in other FMIs and trends in financial markets. In addition, the levels of settlements of funds under the System and operational status of the BOJ-NET are periodically reported to the Policy Board.

Moreover, with regard to the Bank's business, including the funds settlements under the System and the operation of the BOJ-NET (FTS), there are audits by the Internal Auditors' Office and periodic verification of the Bank's business operations by the Auditors, including an assessment of efficiency and effectiveness.

Principle 22: Communication 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.

The BOJ-NET (FTS) uses Transmission Control Protocol/Internet Protocol (TCP/IP), which is an internationally accepted communication procedure.

The BOJ-NET (FTS) has adopted the internationally prevalent Extensible Markup Language (XML) message format. ISO 20022 messages are employed when there is an expectation that the straight-through processing (STP) that enables the consecutive processing of a transaction from the point of execution to settlement can be enhanced. For other XML message formats, XML tags based on ISO 20022 messages are applied to the extent possible.

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 publicly 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.

The basic rules and procedures for the System are set forth in (1) the contracts between the Bank and participants, such as the rules on the current accounts; and (2) the rules on the criteria for the selection of participants and on the use of the intraday overdraft facility and the eligible collateral to be pledged for use of the facility. These rules are provided to the participants in writing, while major rules and procedures are published on the Bank's website.

The rules and procedures for the BOJ-NET (FTS) stipulate the operational procedures to be followed by the users and the procedures on exceptional occasions such as system disruptions. These manuals are available on the Bank's website and easily accessible to participants.¹⁸

Also published are the rights and obligations between the Bank and participants, detailed arrangements on the use of the Systems, and fees for the use of the BOJ-NET (FTS).

All the above rules and procedures make up comprehensive arrangements for the use of the Systems, which allow a participant to easily recognize the risks and costs it may bear as the user.

When the Bank makes changes to the rules and procedures in light of IT system improvements or changes in the surrounding environment, the Bank notifies the participants of this fact in writing or via its website, and thus the participants can easily access the latest information.

¹⁸ The operation manuals are available only in Japanese.

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

As described above, the basic rules and procedures for the System are set forth in (1) the contracts between the Bank and participants, such as the rules on the current accounts; and (2) the rules on the criteria for the selection of the participants and on the use of the intraday overdraft facility and the eligible collateral to be pledged for use of the facility. These rules are provided to the participants in writing, while major rules and procedures are published on the Bank's website.

To facilitate the participants' understanding of the risks they would bear by becoming a participant of the System or a user of the BOJ-NET (FTS), the rules and procedures provide information on the rights and obligations of a participant, the time when the funds settlements under the System become final, types of transactions participants may use, and the governing laws and jurisdiction.

The Bank's rules and procedures for the System stipulate that it may establish necessary provisions or take necessary measures, including revisions of the rules and procedures. However, it is noted explicitly that it will be pursued only to achieve the purpose "to ensure appropriate operation of the current account transactions."

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.

The Bank promotes the participants' understanding through such steps as providing explanations when opening a current account at the Bank, setting up help-desk support, providing explanatory documents and explanations when starting a new service, and offering running tests on the BOJ-NET (FTS) including the one before the full launch of the new BOJ-NET (FTS).

As a result of these measures, the Bank has maintained the stability of settlements under the Systems.

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.

With regard to the fees for the use of the BOJ-NET (FTS), the Bank discloses its policy and the fees that are set at the level of individual services. Specifically, the fees are in principle set based on the following policy.

First, the Bank considers that it should basically bear the costs of putting its infrastructure in place to offer its settlement services (such as the costs of development and maintenance of the systems). This is because the System, which offers to execute funds settlements among participants, is a public infrastructure that is fundamental to the functioning of the financial and capital markets. Moreover, it is considered that investing to further enhance the safety and efficiency of its FMI in response to changes in the surrounding environment such as technological innovation is an inherent function of central banks.

On the other hand, participants using the System online via the BOJ-NET can expect to benefit from the lighter operational burden and shorter processing time compared with those when using these services via paper-based requests to the Bank. Therefore, when the BOJ-NET is accessed, the Bank collects the costs for connection with the BOJ-NET and the use of communication circuits from the participants, which corresponds to the benefits from online processing. The fees are collected in the form of fixed fees and transaction fees. The fixed fees are determined by the type of communication circuit, while the transaction fees are set according to the type of message format.

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.

The Bank intends to disclose publicly the response to "Principles for financial market infrastructures: disclosure framework and assessment methodology" whenever there is a material change in the System or the surrounding environment, or at least every other year.

The Bank compiles and publishes on its website statistics on *Payment and Settlement Statistics* on a monthly basis. These statistics include the value and volume of funds settlements executed under the System by funds transfer type and sector, data on intraday overdrafts extended to participants, and the number of BOJ-NET users by sector. The Bank also provides the value of settlements made by private-sector FMIs under the System.

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 does not apply to the System.