

## **II. Developments in Financial Market Infrastructures (FMIs) in Japan**

Major financial market infrastructures (FMIs) in Japan process a large value of transactions on a daily basis, and the overall volume continues to increase. For example, in 2023, about 235 trillion yen worth of funds and about 131 trillion yen worth of Japanese government bonds (JGBs) were settled daily in the Bank of Japan Financial Network System (BOJ-NET) operated by the Bank of Japan. As for private-sector FMIs, the value processed by the Zengin Data Telecommunication System (Zengin System) and the Foreign Exchange Yen Clearing System (FXYCS), for example, are on a moderate increasing trend, while the use of central counterparties (CCPs) for securities transactions and derivatives transactions also continues to increase. As payment and settlement systems are an important social infrastructure that forms the basis of the economic society, it is essential to secure their safety and efficiency.

An FMI, which constitutes a nation's payment and settlement system, is defined as a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling, and recording payments, securities, derivatives, or other financial transactions. FMIs typically establish a set of common rules and procedures for all participants, technical infrastructure, and a risk management framework to cope with the risks FMIs and their participants might incur.

FMIs are broadly categorized into payment systems, securities settlement systems, CCPs, and trade repositories (TRs). A payment system is an arrangement for processing the transfer of funds, while a securities settlement system is for the custody and delivery of securities. A CCP is an arrangement for processing the clearing and settlement of obligations resulting from financial transactions, such as securities and derivatives transactions. A CCP replaces an obligation between two clearing members with a pair of obligations between the CCP and each clearing member. A TR is an arrangement for processing the collection, storage, and dissemination of transaction data for OTC derivatives transactions.

In Japan, the Bank operates a payment system (the BOJ-NET Funds Transfer System [BOJ-NET FTS]) and a JGB settlement system (the BOJ-NET JGB Services). Private-sector FMIs operate payment systems, securities settlement systems, CCPs, and TRs (Figure 1). The major private-sector FMIs (or their operators) are described below (Figure 2).

Figure 1. Overview of FMIs in Japan

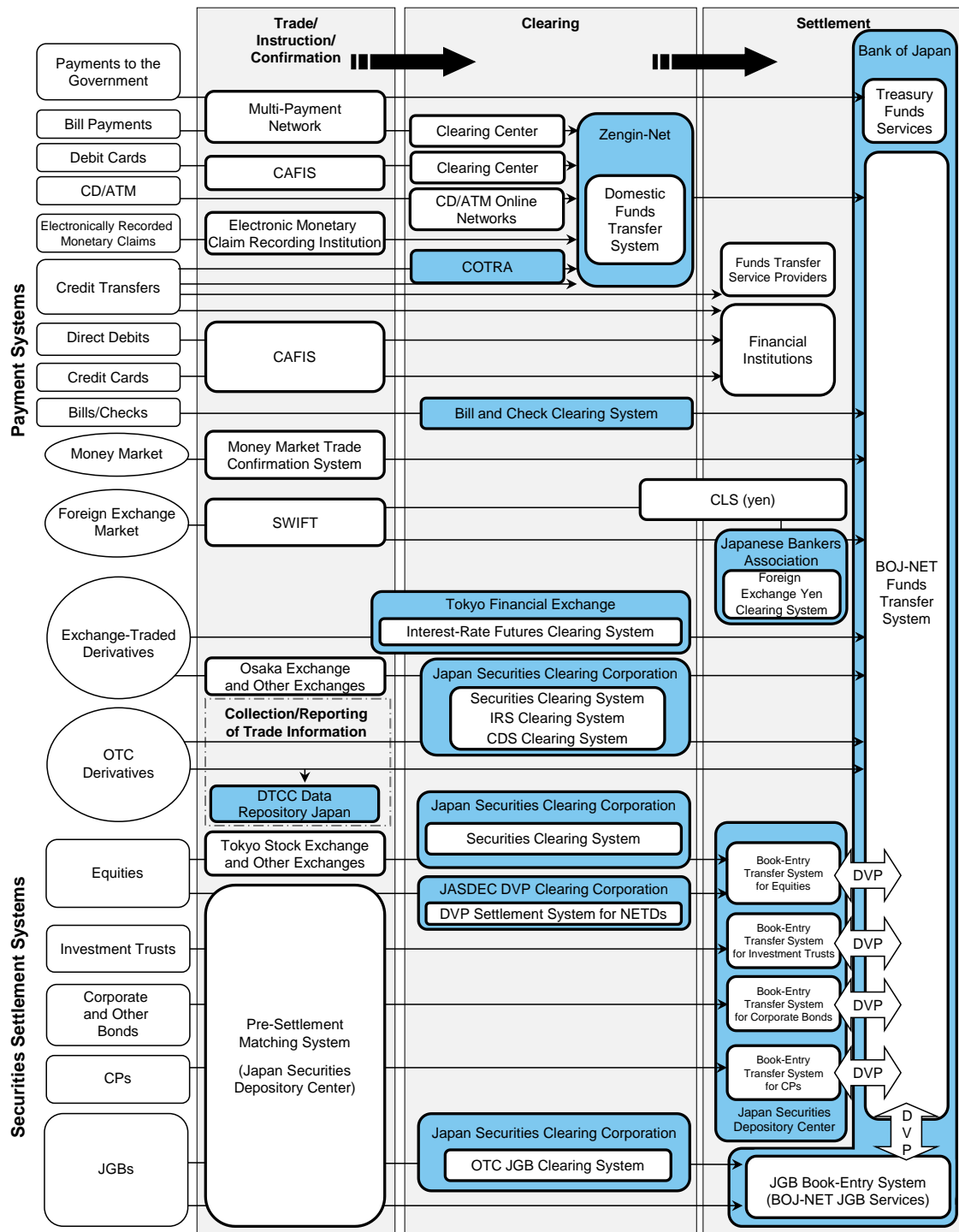


Figure 2. Major private-sector FMs in Japan

<b>Domestic Funds Transfer System (Zengin System)</b>	Payment system operated by the Japanese Banks' Payment Clearing Network (Zengin-Net). It is an interbank clearing system for credit transfers initiated by firms and individuals. Exchange of transfer instructions among financial institutions is processed in the Zengin System.
<b>The Foreign Exchange Yen Clearing System (FXYCS)</b>	Payment system operated by the Japanese Bankers Association (JBA). Settlement and related operations are conducted via the BOJ-NET. The FXYCS settles cross-border credit transfers initiated by firms and individuals as well as the yen leg of foreign exchange transactions between financial institutions.
<b>The Japan Securities Depository Center (JASDEC)</b>	Central securities depository that operates as a securities settlement system. It plays the role of safekeeping and transferring equities, commercial papers (CPs), corporate bonds, investment trusts, and other securities. It also provides electronic matching services for trading data and settlement instructions (pre-settlement matching services) associated with JGBs and other securities transactions executed between institutional investors and securities firms.
<b>JASDEC DVP Clearing Corporation (JDCC)</b>	CCP for equities and other securities that are traded off-exchange between financial institutions. A wholly owned subsidiary of JASDEC.
<b>Japan Securities Clearing Corporation (JSCC)</b>	CCP for equities traded on securities exchanges in Japan, listed derivatives transactions, JGB OTC transactions, and OTC derivatives transactions (interest rate swaps [IRSs] and credit default swaps [CDSs]).
<b>Tokyo Financial Exchange (TFX)</b>	CCP. TFX is a trading exchange for interest rate futures, foreign exchange (FX) futures, and equity index futures. It also provides clearing services for these listed derivatives transactions.

<b>DTCC Data Repository Japan (DDRJ)</b>	Trade repository (TR). Its business operations mainly involve collecting and storing trading data of OTC derivatives transactions conducted between financial institutions and reporting such data to the Financial Services Agency of Japan (JFSA).
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The Bank oversees FMIs pursuant to *The Bank of Japan Policy on Oversight of Financial Market Infrastructures*. Oversight consists of the following activities: monitoring, for example, the design, risk management, and operations of FMIs; assessing them against established safety and efficiency objectives; and inducing change where necessary. Through these activities, the Bank, as the central bank of Japan, seeks to form a common understanding with FMI stakeholders and support their efforts for improvements, thereby ensuring the safety and efficiency of individual FMIs and ultimately the overall payment and settlement systems in Japan.

The Bank adopts the *Principles for Financial Market Infrastructures* (PFMIs), established by the Committee on Payments and Market Infrastructure (CPMI) and the International Organization of Securities Commissions (IOSCO), as the standard for oversight of the BOJ-NET and major private-sector FMIs listed in Figure 2. The Bank maintains its view that private-sector FMIs as a whole are in conformity with the PFMIs and that their safety and efficiency are ensured.

In the past several years, responding to the changing environment surrounding FMIs, each FMI has been working on various initiatives for improvement while ensuring stable system operations and effective risk management. Such initiatives include: shortening securities settlement cycles (reducing the time lag between execution and settlement for over-the-counter (OTC) JGB transactions from T+2 to T+1 <May 2018>; for equities and other securities transactions from T+3 to T+2 <July 2019>; and for corporate bonds transactions from T+3 to T+2 <July 2020>); strengthening business continuity arrangements taking into account lessons learned from system failures and the possibility of natural disasters; and making efforts to introduce new technologies such as application programming interfaces (APIs) and cloud computing. With significant environmental changes likely to continue occurring in the future, each FMI is expected to continue proceeding with various efforts in view

of developments in international discussions. The Bank will continue to support initiatives taken by individual FMIs to enhance their international competitiveness and provide user-friendly services, while promoting appropriate risk management frameworks to ensure that such developments do not result in the FMIs being exposed to excessive risk or giving unfair treatment to some participants.

The following sections describe developments in each FMI since around 2020.

## 1. BOJ-NET

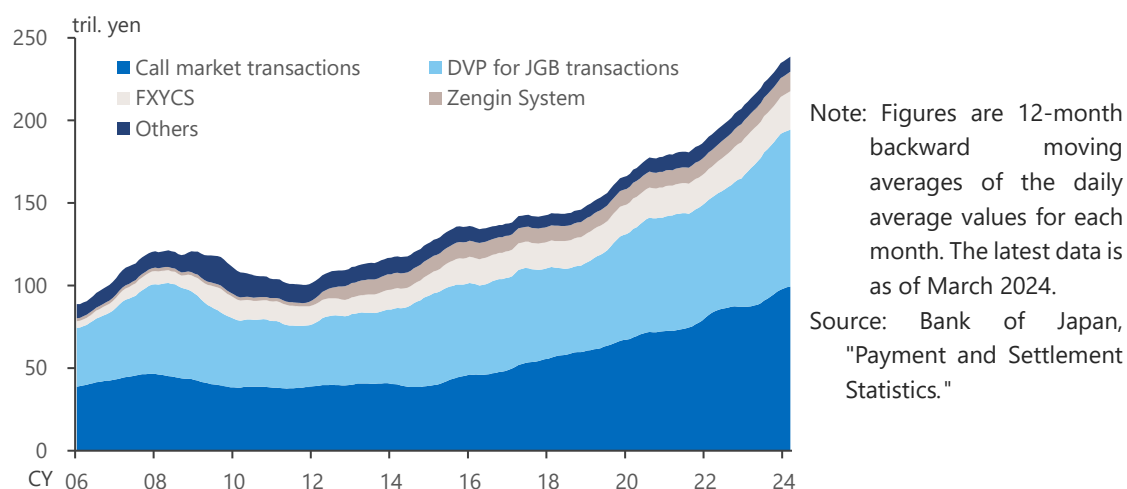
The BOJ-NET, operated by the Bank, comprises the BOJ-NET FTS and the BOJ-NET JGB Services.

The BOJ-NET FTS processes funds transfers through current accounts that participants hold at the Bank. It is used for (i) settlement of funds between financial institutions; (ii) settlement of the yen leg of JGB and other securities transactions; and (iii) settlement of net positions arising from private-sector FMIs. The BOJ-NET JGB Services process the auction and issuance of JGBs as well as the book-entry transfer of JGBs under the JGB Book-Entry Transfer System (i.e., delivery of JGBs among the Bank and participants such as financial institutions). Linking the BOJ NET FTS and the BOJ NET JGB Services has enabled delivery versus payment (DVP) of JGBs, where delivery of securities is executed on the condition that the corresponding payment is executed.

### (1) BOJ-NET Funds Transfer System

The value and volume of transactions settled in the BOJ-NET FTS continue on an increasing trend, with daily averages for 2023 reaching about 235 trillion yen and about 83,000 transactions, respectively. The value of payments settled continues to increase particularly for call loan transactions in the interbank money market, reflecting the continued high level of current account balances at the Bank against the backdrop of monetary easing by the Bank (Figure 3).

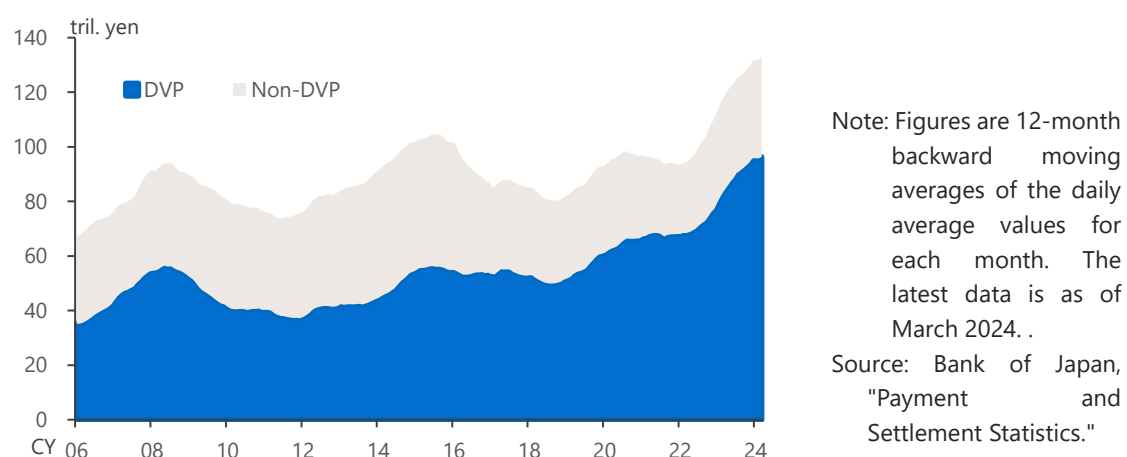
Figure 3. Value of payments settled in the BOJ-NET FTS



## (2) BOJ-NET JGB Services

The value and volume of JGB transfers settled through the BOJ-NET JGB Services have also been on an increasing trend, mainly due to increases in DVP transactions, with daily averages for 2023 reaching about 131 trillion yen and about 32,000 transactions, respectively (Figure 4). Underlying the increase in DVP transactions is the fact that, in recent years, the use of CCP has been increasing in the JGB market, leading to a shift from non-DVP transactions to DVP transactions via CCP. Recently, transactions are on a further rise, partly reflecting the robust demand in JGBs among non-residents.

Figure 4. Value of transactions settled in the BOJ-NET JGB services



The BOJ-NET adopts the ISO 20022 messaging standard for cross-border payments, i.e., transactions arising from the Foreign Exchange Yen Clearing System (FXYCS) and current account transactions related to yen deposits of foreign central banks and other overseas institutions.

In the area of cross-border payments, various initiatives are under way to address the challenges of high cost, low speed, limited access, and insufficient transparency, based on a roadmap published by the G20. Fragmentation of payment messaging standards among jurisdictions has been identified as one of the factors contributing to the low speed and high costs associated with cross-border payments. Against this background, harmonized data requirements for ISO 20022 messages have been developed, and plans for migration have been discussed to promote widespread adoption as a global standard. The ISO 20022 messaging standard has been revised several times to date, and Swift<sup>1</sup> announced that it would begin its migration to the ISO 20022 messaging standard (version 8 <2019 version>) in March 2023 with a period of coexistence with the current message format (MT message format<sup>2</sup>) until November 2025.

In July 2022, the Bank newly established the ISO 20022 Working Group under the Forum Towards Making Effective Use of the BOJ-NET and has been exchanging views with participating members such as financial institutions using the BOJ-NET. Based on discussions within the working group, the Bank announced in January 2024 that the upgrade to version 8 of the ISO 20022 messaging standard for cross-border transactions on the BOJ-NET will take place in November 2025. Subsequently, in March 2024, the Bank also announced that, in upgrading to version 8, the messaging

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<sup>1</sup> Abbreviation for the “Society for Worldwide Interbank Financial Telecommunication.” Swift operates a financial communications network that exchanges messages for cross-border payments and other transactions. The SWIFT financial communications network is used by financial institutions and FMI operators across the globe.

<sup>2</sup> MT refers to a message type that has been adopted by and currently used by Swift. It is designed based on operational processes that include visual confirmation of the message content by the human eye, and the amount of information that can be included is limited. The new format, which is compatible with ISO 20022 (version 8), can include more structured information and is more compatible with system processing compared with the current format.

standard will, in principle, conform to Cross-Border Payments and Reporting Plus (CBPR+) usage guidelines, which define how ISO 20022 messages are to be used for cross-border payments. The upgrade is expected to help enhance cross-border payments by increasing the amount of information that can be entered in the message, such as payer and payee information, and by further aligning BOJ-NET messages with international standards that are being widely adopted.

With the aim of making effective use of the BOJ-NET, the Bank will continue to follow international developments, including international messaging standards, and to exchange views with financial institutions using the BOJ-NET.

## 2. Domestic Funds Transfer System (Zengin System)

The Domestic Funds Transfer System is an arrangement for clearing interbank credit transfers. The Zengin-Net operates the arrangement, with transfer instructions processed online using the Zengin System. For large-value payments amounting to 100 million yen or more per transaction, transfer instructions are forwarded to the BOJ-NET FTS and processed on a real-time gross settlement (RTGS) basis via the Bank's current account. With RTGS, funds are transferred real-time at the request of financial institutions on a transaction-by-transaction basis. On the other hand, for small-value payments of less than 100 million yen, the Zengin System calculates net credit or debit positions for each financial institution. The net positions are settled between financial institutions and the Zengin-Net on a deferred net settlement basis via the Bank's current accounts. With the launch of the More Time System<sup>3</sup> in October 2018, real-time credit to the payee's account has become available for small-value payments on a 24/7 basis, including nighttime and holidays.

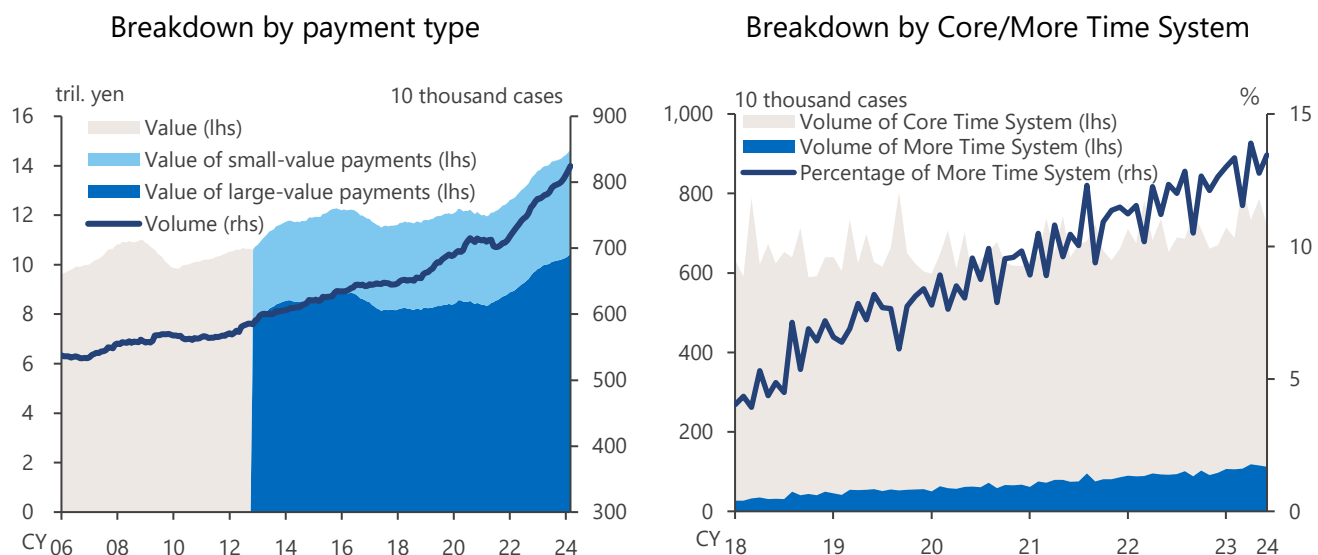
The value and volume handled by the Zengin System are increasing moderately. Looking at the breakdown by payment type, large-value payments account for 70 percent in terms of value, while small-value payments account for more than 99 percent in terms of volume (Figure 5). The increase can be attributed to the increase

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<sup>3</sup> The Zengin System comprises the Core Time System, which operates during the daytime (8:30 to 15:30) on weekdays, and the More Time System, which operates during nighttime (15:30 to 8:30 the following day), weekends, and holidays.

in small-value payments reflecting the launch of the More Time System and the expansion of cashless payments as well as an increase in economic activity.

Figure 5. Value and volume of payments processed in the Zengin System



- Notes: 1. Values and volumes are 12-month backward moving averages of the daily average values for each month. The latest data is as of March 2024.
2. Separate figures for large-value payments and small-value payments are available only for December 2011 onward, after the introduction of RTGS for large-value payments in November 2011. Breakdown by payment size is shown only from November 2012 onward, when the backward moving average was adopted.

Source: Bank of Japan, "Payment and Settlement Statistics."

Note: Figures for volume are 12-month backward moving averages of the daily average values for each month. The latest data is as of March 2024.

Source: Bank of Japan, "Payment and Settlement Statistics."

In October 2021, the Zengin-Net abolished the conventional interbank fees, which had been set by financial institutions at their own discretion, and replaced them with a common interbank fee called "Domestic Funds Transfer System Operational Costs." The newly established fee is determined by the Zengin-Net and reflects costs incurred by financial institutions in processing incoming credit transfers. As a result of this change, for many financial institutions, the interbank fee for credit transfers of less than 30,000 yen has dropped from 117 yen per transaction to 62 yen per transaction. In addition, in October 2022, the Zengin-Net expanded eligibility for participation in the Zengin System, which was previously limited to deposit-taking institutions, to include non-bank funds transfer service providers. At the same time, the Zengin-Net made the decision to develop a new connectivity method using an API gateway. These changes are expected to enhance the transparency of Zengin-Net operations and contribute to reducing costs and improving convenience for participants, including new participants.

The Zengin-Net is currently considering the details of the 8th Generation Zengin System. In the "Basic Policy for the Next-generation Zengin System" published in March 2023, the Zengin-Net stated that it will adopt an open system architecture with aims such as improving flexibility in the selection of development vendors. The new system will be formed based on a two-layer structure, consisting of a Mission Critical Area, which provides core functions such as exchange of payment instructions and funds clearing, and an Agile Area, which provides additional functionalities and services. For the Agile Area, the Zengin-Net is considering taking the opportunity of the system renewal to introduce new technologies, such as cloud services, on the premise of cost effectiveness while also ensuring an adequate level of safety.

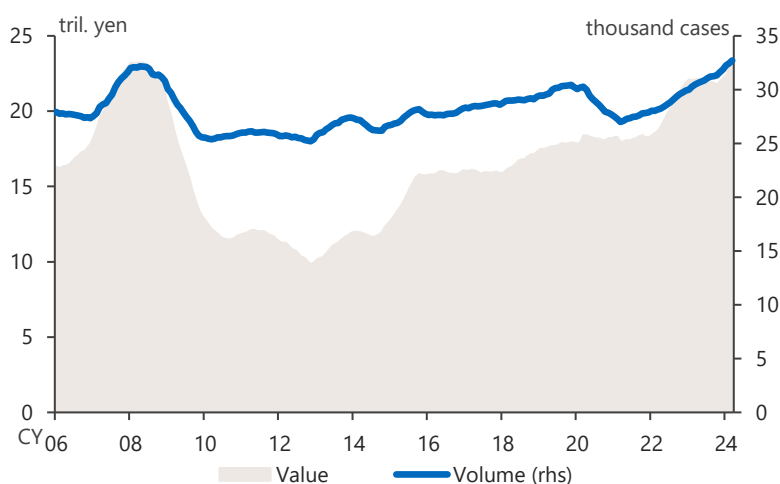
In October 2023, a major system failure occurred in the Zengin System, affecting millions of customers. The system failure had a far-reaching impact -- the largest since the launch of the system in 1973 -- and highlighted various issues for improvement in areas such as vendor management and business continuity arrangements. Based on the lessons learned from the system failure, the Zengin-Net has been pushing forward with multiple initiatives to prevent recurrences and is expected to further enhance its robustness as an FMI.

### 3. Foreign Exchange Yen Clearing System (FXYCS)

The Foreign Exchange Yen Clearing System (FXYCS) is an arrangement for processing cross-border yen-denominated transfers to and from Japan as well as settlement of yen funds resulting from transactions in the foreign exchange market. While the FXYCS is operated by the Japanese Bankers Association (JBA), the JBA entrusts operational processing such as transfer of payment instructions to the Bank, and the FXYCS is operated as part of the BOJ-NET FTS. As most of the payments processed in the FXYCS are large in volume, payments are settled on an RTGS basis.

In the wake of the global financial crisis in 2008, the value handled by the FXYCS decreased significantly as financial and economic activities became sluggish, but has subsequently been recovering moderately, reflecting developments such as increases in economic activity and transactions by financial institutions (Figure 6).

Figure 6. Value and volume of payments processed in FXYCS



Note: Values and volumes are 12-month backward moving averages for the daily average values for each month. The latest data is as of March 2024.

Source: Bank of Japan, "Payment and Settlement Statistics."

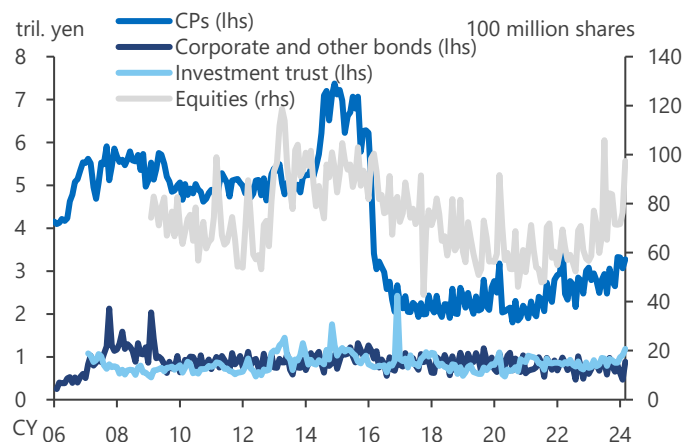
In the area of cross-border payments, Swift is scheduled for full migration to the ISO 20022 message format by November 2025. Messages sent among financial institutions via Swift are converted to payment instructions for the BOJ-NET's FXYCS before being sent to the FXYCS. The JBA is therefore taking various steps to accommodate this change, including an update of the message format used under the system.

#### 4. Japan Securities Depository Center (JASDEC)

Japan Securities Depository Center (JASDEC) is a central securities depository that operates a securities settlement system for the safekeeping and transferring of equities, commercial papers (CPs), corporate bonds, investment trusts, and other securities. A link between the JASDEC system and the BOJ-NET FTS has enabled DVP settlement for these types of securities.

After the Bank introduced Quantitative and Qualitative Monetary Easing (QQE) with negative interest rates in January 2016, it became difficult to manage funds with positive interest rates in the money market. As a result, market participants reduced their repo funding using CPs, thereby leading to a significant decline in the value of CPs processed in JASDEC. Thereafter, however, CP settlements have been on a moderate increasing trend due to an increase in CP issuance reflecting firms' growing funding needs. Meanwhile, the number of equity shares settled has been increasing since 2020, mainly reflecting the increase in equity market activity as a result of market fluctuations stemming from the spread and waning of the novel coronavirus (COVID-19). The value settled for investment trusts and corporate bonds has been largely unchanged (Figure 7).

Figure 7. Value of transactions settled by JASDEC



Notes: 1. Daily averages per month. The latest data is as of March 2024. Figures include both DVP settlement and non-DVP settlement. Values for "CP," "Corporate and other bonds," and "Investment trusts," and the number of shares for "Equities," are presented.

2. Data for the months in which each transfer system was launched are excluded.

3. Figures for "CPs" and "Corporate and other bonds" are aggregates of underwriting, redemption, retirement by purchase, and book-entry transfer. Figures for "Equities" and "Investment trusts" are aggregates of new records, deletions, and book-entry transfers.

Source: Japan Securities Depository Center.

Since October 2023, JASDEC -- from the perspective of improving its services and enhancing user convenience -- has made arrangements including shortening of the period between the listing approval date and the listing date, as well as allowing for a more flexible listing schedule. From April 2024, as part of measures aimed at increasing the trading of unlisted equities, it enabled unlisted equities issued by certain issuers, for example, to be handled in the Book-Entry Transfer System for Equities and DVP Settlement System for Non-Exchange Transaction Deliveries (NETDs). In January 2024, JASDEC also reduced fees such as the account management fee to contribute to the new Nippon Individual Savings Account (NISA) program and other government-led measures for encouraging a shift from savings to investment.

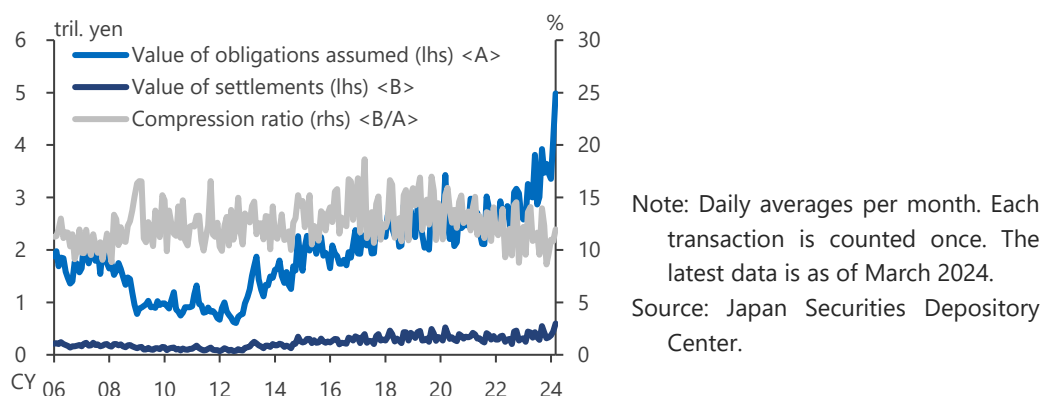
In order to strengthen business continuity arrangements, JASDEC has taken various measures, including relocation of its system backup center to a remote area in May 2021, relocation of its head office to a more disaster-resistant building with a seismically isolated structure in October 2021, and establishment of a second center for system operations in January 2024. Currently, JASDEC is developing procedures

that would come into effect in the event of a system failure, namely, ones in which various settlement deadlines are extended temporarily so that settlement is completed by the end of the day to the greatest extent possible. The new procedures are scheduled to be applied in a phased manner by around March 2025.

## 5. JASDEC DVP Clearing Corporation (JDCC)

JDCC, a wholly owned subsidiary of JASDEC, is a CCP (financial instruments clearing organization) that provides clearing services for equities and other securities that are traded off-exchange between financial institutions. The value of obligations assumed by JDCC continues to increase, reflecting stock price rises since end-2012, market fluctuations stemming from the spread and waning of COVID-19, and an international expansion in the use of CCP (Figure 8).

Figure 8. Value of transactions processed by JDCC



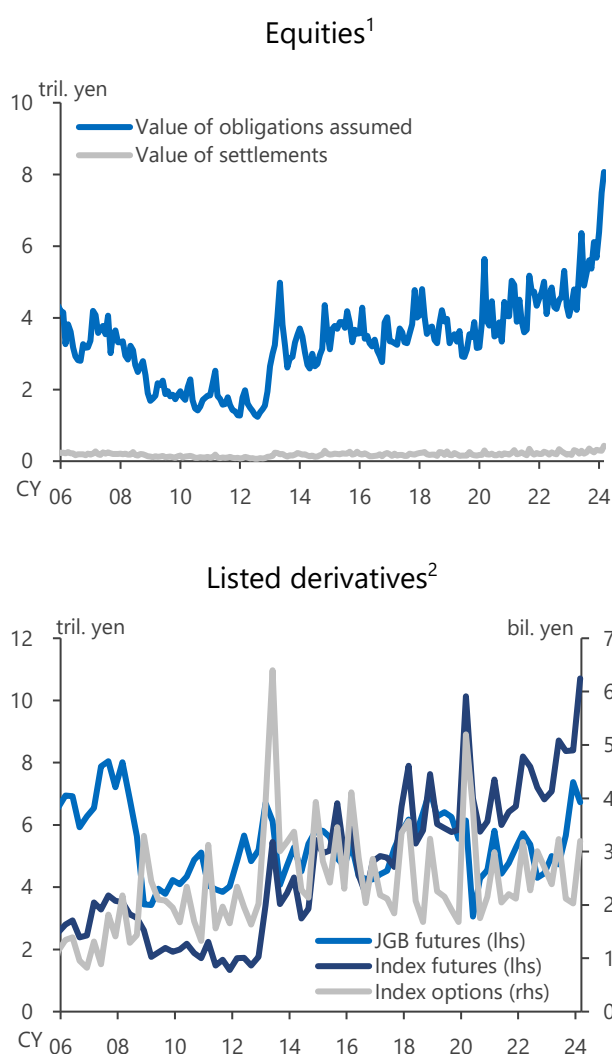
## 6. Japan Securities Clearing Corporation (JSCC)

JSCC is a CCP that provides clearing services for equities traded on securities exchanges, listed derivatives transactions, OTC JGB transactions, and OTC derivatives transactions (CDSs and IRSs).

The amount of obligations assumed by JSCC for equities transactions has been increasing mainly on the back of developments including stock price rises since end-2012. The value of obligations assumed by JSCC for listed derivatives transactions, such as for index futures, has also been increasing due to an increase in index-based trading (Figure 9). As for OTC derivatives transactions, the amount of obligations

assumed by JSCC for IRS transactions is on an increasing trend mainly to accommodate the growing need for hedging in view of expectations for a rise in interest rates amid continued monetary easing. The amount of obligations assumed by JSCC for OTC JGB transactions has been increasing due to a growing share of the use of CCPs since around 2014 and the continued high level of arbitrage trading including repos (Figure 9).

Figure 9. Value of transactions processed by JSCC

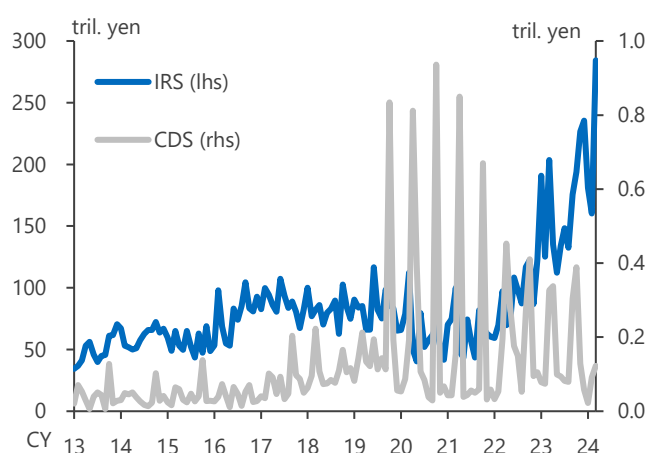


Notes: 1. Daily averages per month. The latest data is as of March 2024.

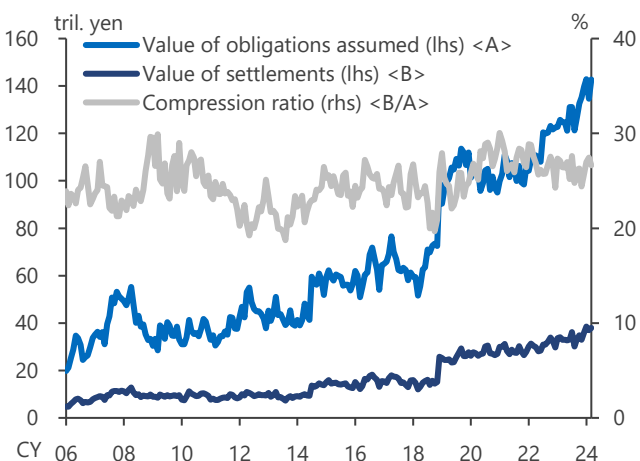
2. Average daily notional value assumed each quarter. The latest data is as of Q1 of 2024. Figures for "JGB futures" show the amount for 10-year JGB futures. Figures for "Index futures" show the aggregate amount of Nikkei 225 futures, Nikkei 225 mini, and TOPIX futures. Figures for "Index options" show the amount for Nikkei 225 options. Transactions processed by the Osaka Securities Exchange, whose clearing functionality for exchange-traded derivatives was later integrated into JSCC, are counted.

Sources: Japan Securities Clearing Corporation; Japan Exchange Group.

### OTC derivatives transactions<sup>3</sup>



### OTC JGB transactions<sup>4</sup>



Notes: 3. Daily averages per month. Each transaction is counted once. The latest data is as of March 2024. For term repo transactions with subsequent collateral allocations, transactions with unwinding and rewinding of obligations within the term are included.

4. Total notional outstanding for the month. The latest data is as of March 2024.

Source: Japan Securities Clearing Corporation.

As part of efforts by the Japan Exchange Group (JPX) and Tokyo Commodity Exchange (TOCOM) to develop a comprehensive exchange that enables one-stop trading in various products, in July 2020, JSCC merged with Japan Commodity Clearing House (JCCH) and added listed commodity derivatives such as precious metals, rubber, agricultural products, and energy futures contracts to its clearing service coverage. In September 2022, Osaka Exchange (OSE) and TOCOM introduced holiday trading of derivatives such as Nikkei 225 futures and Platts Dubai crude oil futures to increase user convenience, including the expansion of trading opportunities for participants. In May 2023, JSCC added 3-month Tokyo Overnight Average Rate (TONA) futures<sup>4</sup> to its clearing products. In March 2024, with the aim of reducing the collateral burden on participants, JSCC expanded applicable products for cross margining of IRS clearing, from two products -- JGB futures contracts and IRSs -- to three, by adding interest rate futures (3-month TONA futures).

While such improvements in services may be considered necessary from the perspective of maintaining international competitiveness, it should be borne in mind that these measures should be implemented in a way that does not expose CCPs to excessive risk. In this regard, JSCC continues to review the margin calculation method and other arrangements to ensure that an appropriate risk management framework is maintained.

In view of improving resilience in the event of participant default, JSCC participated in the global fire drill held in November 2023 by CCP Global, a global association of CCPs. The drill aims to test whether each CCP can effectively respond to the potential default of a hypothetical global financial institution that participates in CCPs across the globe. The findings of the exercise are expected to be appropriately reflected in future efforts by JSCC.

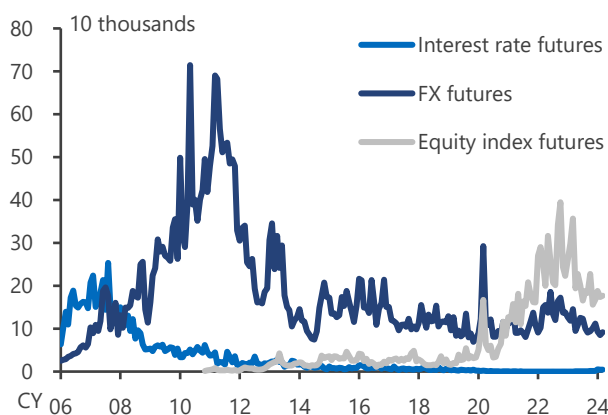
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<sup>4</sup> TONA is an overnight interest rate for unsecured money lending and borrowing in the call market. Specifically, it is the rate at which funds are received and paid on the contract date and at which repayment is conducted on the next business day. 3-month TONA futures are contract for difference (CFD) futures contracts that use uncollateralized overnight call rates, published by the Bank of Japan, as underlying assets.

## 7. Tokyo Financial Exchange (TFX)

TFX is a financial instruments exchange that lists derivatives products such as interest rate futures, foreign exchange (FX) futures, and equity index futures. It also provides clearing services for these listed derivatives transactions. The trading volume of interest rate futures on TFX has been sluggish amid the prolonged low interest environment (Figure 10). However, since 2020, trading of FX futures and equity index futures has been active, especially among retail traders, due to the increased volatility of exchange rates and stock prices stemming from the spread and waning of COVID-19.

Figure 10. Trading volume on TFX



Note: Daily averages per month. The latest data is as of March 2024.  
Source: Tokyo Financial Exchange.

TFX, as a financial instruments exchange, expanded its instruments lineup in March 2023 by listing 3-month TONA futures as a response to the Yen Interest Rate Benchmark Reform. Moreover, in November 2023, partly with the aim of diversifying revenue streams, TFX announced a plan to launch a trading platform for bank loan receivables in fiscal 2025, which will enable financial institutions that are buyers or sellers of loan receivables to share information on loan asset transactions.

## 8. DTCC Data Repository Japan (DDRJ)

DDRJ is the sole TR in Japan designated by the JFSA. Financial institutions that have conducted OTC derivatives transactions are mandated to report their trading data to

the JFSA. DDRJ plays the role of providing the JFSA with the trading data of OTC derivatives transactions reported by financial institutions and other market participants.

Previously, only a small share of transactions was reported through DDRJ, as financial institutions had the option of reporting through DDRJ or directly to the JFSA, and as transactions cleared by CCPs were reported to the JFSA by the CCPs. However, as part of international efforts to harmonize key data elements of OTC derivatives transactions, the Financial Instruments and Exchange Act was amended in 2020 to expand reporting fields of OTC derivatives transactions and to consolidate the reporting of OTC derivatives transactions to DDRJ. The Act became effective on April 1, 2024.

### (Box 1) Launch of “COTRA”

In October 2022, a new payment system called COTRA, short for Cooperative Transfer System, went live. With the growing use of cashless payment instruments in Japan, payments are expected to become smaller in value and more frequent. COTRA aims to provide a low-cost and convenient payment infrastructure for such payments and ensure interoperability among banks and nonbank funds transfer service providers (hereafter “financial institutions”).

Payments eligible for COTRA (COTRA transfers) are credit transfers between individuals amounting to 100,000 yen or less. As with conventional interbank credit transfers, COTRA transfer provides real-time availability of funds to the payee's account on a 24/7 basis. In addition, customers using COTRA transfer can (1) link their mobile phone number/email address with their account information, (2) send text messages along with funds, and (3) receive immediate confirmation on the completion of payments to the payee's account. There is no dedicated web/mobile application for COTRA, and customers initiate COTRA transfers using banks' online banking applications or via mobile payment applications such as Bank Pay.

Figure 11. Flow of payment for a COTRA transfer

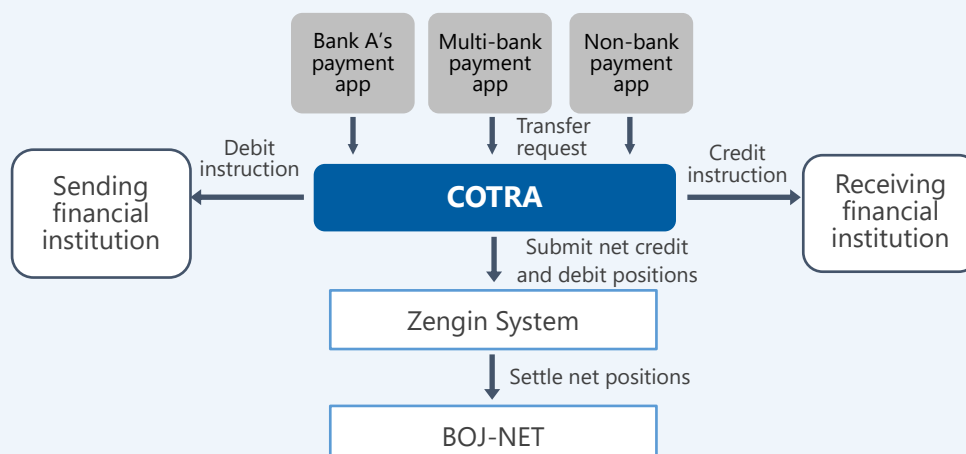


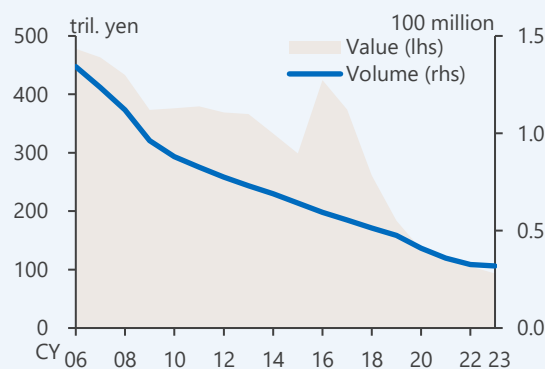
Figure 11 shows the flow of payment for a COTRA transfer. When a customer requests a COTRA transfer through an eligible web/mobile application, a debit instruction is sent to the sending financial institution and a credit instruction is sent to the receiving financial institution via COTRA. The net credit and debit positions between financial institutions are submitted to the Zengin System twice a day and are combined with the net positions between banks in the Zengin System, with settlement ultimately taking place via the BOJ-NET.

COTRA has been steadily expanding its customer base since the launch of its operations, with 293 banks providing the payment service as of August 2024. While customer fees for COTRA transfers are to be set by each individual financial institution, all financial institutions currently provide the service free of charge.

## (Box 2) Digitization of Bill and Check Clearing Systems

In Japan, bills and checks have been used for many years, mainly for payments between firms. With the increase in the use of other payment methods such as internet banking and electronically recorded monetary claims, however, the value and volume processed have been declining over the years (Figure 12). Under these circumstances, the following measures for digitization have been taken for bills and checks.

Figure 12. Value and volume of bills and checks processed in Japan



Notes: 1. The total annual volume and value of bills and checks cleared in Japan. The latest figures are as of 2023.

2. In November 2022, all clearing activities at local clearing houses were consolidated to clearing at the Electronic Clearing House. Figures for 2022 represent the sum of the volumes and values cleared at both conventional clearing houses and the Electronic Clearing House.

Source: Japanese Bankers Association.

### (1) Launch of the Electronic Clearing House

In November 2022, the Electronic Clearing House (ECH) operated by the JBA started its operations, digitizing the clearing process of bills and checks between banks. Previously, bills and checks were cleared physically. After the receiver of funds deposited a bill/check to his/her bank, the depositing bank presented the paper-based bill/check to the drawer's bank at a local clearing house, where net credit and debit positions between banks were calculated. At the ECH, banks exchange electronic image data of bills and checks, which contributes to reducing processing costs and continuing clearing operations in the event of natural

disasters that may prevent physical delivery. With the launch of the ECH, 179 local clearing houses ceased operations.

## (2) Digitization of bill and check functions

Efforts are underway to promote the full digitization of bill and check functions -- that is, a shift from bills and checks to digital means of payment, such as credit transfers via online banking and electronically recorded monetary claims. The shift is expected to reduce operational costs for both firms and financial institutions and to facilitate integration with other IT-based financial services. A working group established by the JBA on full digitization of the bill and check functions has set a goal of reducing the number of bills and checks cleared at the ECH to zero by the end of fiscal 2026 (March 2027). In order to achieve this goal, financial institutions are gradually reducing their bill and check services, for example, by not allowing the issuance of bills and checks for customers with newly opened current accounts, as well as working to improve the convenience of electronic payment services.