

The Role of the Bank of Japan in Payment and Settlement Systems

I. Introduction

The Bank of Japan performs various roles in the payment and settlement field in order to fulfill its responsibility to ensure the safety and efficiency of Japan's overall payment and settlement system.¹

The Bank provides the economy with the settlement assets with the lowest credit risk, in the form of banknotes and deposit money. Banknotes are widely used for face-to-face settlement of small-value transactions, while deposits held with the Bank² are mainly used to settle large-value transactions between financial institutions. Besides the two forms of money provided by the central bank, deposits held with commercial banks are also used as settlement assets, particularly for retail payments.

Since the volume and value of transactions between financial institutions are very large in total, smooth interbank settlement of funds is critical for maintaining the safety and efficiency of the nation's payment and settlement system and hence for its overall economic activity. The Bank therefore operates its own funds transfer system, which settles payment obligations between financial institutions using deposits held with the Bank as settlement assets.

In addition, the Bank oversees private-sector clearing systems that play a significant role in interbank payments, and also other payment systems it does not operate, with a view to preventing systemic disruption. In overseeing such payment systems, the Bank closely monitors their safety and efficiency in accordance with the "Core Principles for Systemically Important Payment Systems" (Core Principles; see Annex 1),³ and encourages the system operators to make necessary improvements.

The Bank also plays an important role in the securities settlement field. The safety and efficiency of securities settlement systems is essential for that of Japan's overall payment and settlement system because the completion of a securities transaction in most cases requires a transfer of funds in parallel with the transfer of securities. The Bank operates the settlement system for Japanese government bonds and bills (JGBs) and oversees securities settlement

systems it does not operate, such as those for stocks. As the oversight standards for securities settlement systems, the Bank employs the "Recommendations for Securities Settlement Systems" (Recommendations; see Annex 2)⁴ and, where the system has payment system aspects, also the Core Principles.

Section II of this paper describes the Bank's role as a provider of settlement assets and an operator of payment and settlement systems. Section III discusses its role as the overseer of systems it does not operate. Section IV then highlights some of the Bank's recent activities in the area of payment and settlement systems.

II. The Bank's Provision of Settlement Assets and Its Operation of Payment and Settlement Systems

A. Issuance of Banknotes

The Bank issues Bank of Japan notes (banknotes),⁵ which are widely used primarily in face-to-face settlement of small-value transactions. As the country's sole issuer of banknotes, the Bank has the responsibility to ensure that they are readily available to the public, and that public confidence in them is maintained. The Bank endeavors to ensure that, through financial institutions, banknotes circulate smoothly throughout the nation to meet the needs of the public. When they return to the counters at the Bank's head office or branches, the Bank examines their volume/value, verifies their authenticity, and checks whether they are sufficiently clean for further circulation. The Bank also implements the best possible measures to prevent counterfeiting and altering of banknotes.

B. Provision of Current Accounts and Operation of a Funds Transfer System

1. Current accounts held with the Bank and the operation of its funds transfer system

The Bank provides financial institutions with current accounts, which are, like banknotes, settlement assets with the lowest credit risk.

1. In this paper, the term "payment and settlement systems" refers to arrangements for clearing and settling payments and securities transactions between participants according to certain standard procedures. This includes operational infrastructures such as computer systems, as well as various rules and contracts that govern the procedures.

2. Deposits held in current accounts with the Bank.

3. Developed by the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries. See *Core Principles for Systemically Important Payment Systems*, Bank for International Settlements (BIS), January 2001.

4. Developed by the CPSS and the Technical Committee of the International Organization of Securities Commissions (IOSCO). See *Recommendations for Securities Settlement Systems*, BIS, November 2001.

5. See Chapter V of the Bank of Japan Law.

The Bank operates a payment system for providing funds transfer services through current accounts held by banks and other account holders.⁶ The system is one of the core payment systems in Japan in terms of both the value and the nature of payments it handles—it processes about 80 trillion yen daily to settle various types of large-value payments by financial institutions that are providing payment services for the economy in general.

For example, interbank payments such as those arising from call money transactions and from JGB and other securities trades are settled by transferring funds between current accounts held with the Bank. Net obligations of participants in private-sector clearing systems such as the Domestic Fund Transfer System (Zengin System) and the Foreign Exchange Yen Clearing System are also settled between current accounts held with the Bank. In addition, payments to and receipts from the Bank for the Bank's monetary policy operations and credit extension, as well as those related to treasury funds services and JGB issuance/redemption, are credited to or debited from current accounts with the Bank.

In 1988, the Bank introduced the Bank of Japan Financial Network System (BOJ-NET), an online system for transferring funds and JGBs. The BOJ-NET is available for account holders satisfying certain criteria, and most of the major users of the Bank's services have access to it.

Since 2001, when the Bank introduced the new real-time gross settlement (RTGS) system for funds and JGBs,⁷ the Bank has been providing its account holders with intraday credit in the form of overdrafts, in order to facilitate smooth settlement of funds under the new

system.⁸ The intraday overdrafts are free of charge but need to be fully collateralized.

2. Institutions holding current accounts with the Bank

The Bank provides current accounts to the following types of institutions: (1) entities that play a major role in Japan's financial markets with respect to settlement of funds and securities (e.g., banks and securities companies); (2) major brokers of money market transactions⁹; and (3) operators of payment and settlement systems that meet certain requirements.¹⁰ The access criteria have been set in accordance with the Bank's objective stipulated in Article 1 of the Bank of Japan Law,¹¹ and are published as "Criteria for Parties Eligible to Hold Current Accounts with the Bank and Have Access to the Bank's Lending" and "Detailed Criteria for Parties Eligible to Hold Current Accounts with the Bank."¹²

As one of the access criteria, the Bank requires that the applicant's business and financial condition be sound and its operational capabilities adequate. In addition, financial institutions holding current accounts with the Bank are subject to on-site examination and off-site monitoring. Based on the information obtained on their business and financial condition, management of risks associated with settlement, daily funding, and risk profiles, the Bank encourages them to make necessary improvements in their overall banking operation.

Institutions holding current accounts with the Bank that initiate payments using the BOJ-NET are required to have operational capability adequate for online processing.¹³ The Bank also has a strong interest in such institutions' business continuity plans including establishment of backup facilities.

6. Funds transfer services provided by the Bank are part of its "regular business" stipulated in Article 33 of the Bank of Japan Law.

7. For details of the new RTGS system, see Section IV.A.1, "Introducing the new RTGS system."

8. In order to facilitate smooth settlement of JGB transactions on a delivery-versus-payment (DVP) basis under the new RTGS system, the Bank has established a liquidity-saving facility called simultaneous processing of DVP and collateralization (SPDC), which enables participants to pay for JGBs by drawing intraday overdrafts against the incoming JGBs.

9. Currently, only *tanshi* companies (money market brokers) fall into this category.

10. The operators of payment and settlement systems that hold current accounts with the Bank are (1) the Tokyo Bankers Association, which operates the Domestic Fund Transfer System (Zengin System), the Foreign Exchange Yen Clearing System, and the Tokyo Clearing House; (2) other regional bankers' associations, which operate regional bill and check clearing houses; (3) the Tokyo Stock Exchange, which operates a DVP system for stocks traded on the exchange; (4) the Osaka Securities Exchange, which operates a DVP system for stocks traded on the exchange; and (5) the Tokyo International Financial Futures Exchange, which operates a system that clears payments arising mainly from financial futures trades. While the Japan Bond Settlement Network Co., Ltd. (JB Net) does not hold a current account with the Bank, it operates an online network system that links its participants, registrars, and the Bank. Payments for DVP settlement of corporate and other bond transactions are settled through participants' current accounts held with the Bank.

11. Article 1 of the Bank of Japan Law stipulates that the Bank's objective, in addition to price stability, is "to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of an orderly financial system."

12. These documents are available only in Japanese.

13. Institutions holding current accounts with the Bank that do not use the BOJ-NET initiate payments using paper-based instructions.

3. Types of payments to be settled through current accounts with the Bank

One reason the Bank provides funds transfer services is to ensure the safety of the overall payment and settlement system by settling types of payments with potential to trigger systemic disruption if not settled when due.¹⁴

For instance, a failure to settle net obligations of participants in a clearing system for interbank payments could cause, through transmission of the adverse effect, systemic disruption to the nation's overall payment and settlement system, in particular where the clearing system is considered to be a "systemically important payment system." Therefore, it is the Bank's view that net obligations of participants in systemically important payment systems should preferably be settled through current accounts with the Bank.¹⁵ Clearing systems that the Bank considers to be systemically important include the Domestic Fund Transfer System (Zengin System) and the Foreign Exchange Yen Clearing System.

In addition, individual large-value payments between financial institutions that are not processed by clearing systems can also be of systemic significance because a participant's inability to settle a large-value payment could cause a sudden liquidity shortage which cannot be resolved through normal money market trades and trigger systemic disruption. Thus, it is generally believed that this type of payment should be settled through current accounts with the Bank. In practice, interbank payments for call money transactions and securities transactions such as JGB trades are settled through current accounts with the Bank.

C. Operation of the JGB Settlement System

1. The JGB Registration System and the JGB Book-entry System

The Bank operates the JGB settlement system, which consists of the JGB Registration System and the JGB Book-entry System.¹⁶ Under the JGB Registration System, JGB holders register their JGBs directly with

the Bank, the sole registrar, and the Bank settles JGB transactions by changing the names of JGB holders on its registration book. Under the JGB Book-entry System, JGB holders deposit JGBs with financial institutions such as banks and securities companies, which then redeposit their customers' JGBs together with their own at the Bank, the central securities depository. JGB transactions are settled by book entry on the JGB accounts at the Bank and at financial institutions that participate in the system. For both systems, JGB settlements are processed online using the BOJ-NET, but procedures using paper-based transfer instructions are also available.

The daily average value of JGBs settled through the JGB Registration System and the JGB Book-entry System together is about 40 trillion yen. While physical certificates can be held under the current legal framework, in practice they account for only 0.3 percent of the outstanding amount of JGBs and almost all JGB transactions are settled through the two systems.

2. Objectives of the Bank's operation of the JGB settlement system

The value of individual JGB transactions is large and so are the aggregate volume and value of transactions settled each day. JGBs are actively traded through such transactions as outright and repo trades between financial institutions, and are used for the Bank's monetary policy operations and credit extension. Therefore, prompt intraday settlement of JGB transactions is extremely important for the smooth functioning of financial markets.

The Bank, as the operator of the JGB settlement system, has achieved safe and efficient settlement of JGBs and has contributed to enhanced confidence in the JGB market. The Bank settles a large volume and value of JGB transactions promptly and securely on a delivery-versus-payment (DVP) basis.¹⁷ There is a significant advantage in the Bank providing both its funds transfer and the JGB settlement services, as settlement of funds and that of JGBs are closely

14. This is consistent with the Bank's policy that it provides current accounts to entities whose failure to settle could cause, by transmission of its adverse effect through a network of financial institutions, systemic disruption in the nation's overall payment and settlement system.

15. See Core Principle VI. Regarding securities settlement systems, see Recommendation 10.

16. The JGB Registration System was established based on the Law concerning Government Bonds, and the Bank is entrusted with the related operations by the government based on Article 36 of the Bank of Japan Law. The Bank operates the JGB Book-entry System with the authorization of the competent ministers based on Article 39 of the Bank of Japan Law.

17. DVP is a mechanism linking securities transfers and funds transfers which ensures that delivery occurs if, and only if, payment occurs.

interrelated. For example, the cash legs of JGB transactions account for more than 30 percent of total funds transfers made through current accounts with the Bank. JGBs are also heavily used as collateral for the Bank's intraday overdrafts and other credit extension, as well as for the Bank's monetary policy operations. In addition, the fact that the Bank provides JGB settlement services together with related services with which the Bank is entrusted such as issuance, redemption, and interest payments of JGBs makes the JGB market as a whole more efficient than it would otherwise be.

The JGB settlement system operated by the Bank mostly meets international standards that have been prepared for securities settlement systems, and the Bank's provision of the JGB settlement services is supported by a wide range of parties including market participants and the government, which is the issuer of JGBs. The JGB Book-entry System has hitherto been operated under general private law. From January 27, 2003, it is scheduled to be operated under the Law concerning Book-Entry Transfer of Corporate and Other Debt Securities enacted in June 2002,¹⁸ provided that certain conditions, such as designation by the competent ministers, are fulfilled.¹⁹

3. Participants in the JGB settlement system

Under the JGB Registration System, which was established in 1906 with the aim of protecting the rights of the investors, any JGB holder can request the Bank as the registrar to register their JGBs.

The JGB Book-entry System was established by the Bank in 1980 to make JGB settlement more efficient as the volume of JGB transactions was growing rapidly. It is intended for use by entities that need to process a large volume of transactions in a timely and efficient manner. Therefore, participants in the system are in principle entities that engage in custody and settlement of JGBs for their customers. The Bank has published criteria for participation in the system as "Establishment of Requirements for Admission as a Participant in the JGB Book-Entry System" and "Detailed Criteria with Regard to the Applicant's Financial Condition."²⁰

D. Standards for the Bank's Operation of Its Payment and Settlement Systems

The Bank designs and operates its funds transfer and JGB settlement systems in accordance with the Core Principles and the Recommendations. Based on its self-assessment, the Bank considers that they comply with both standards.

The Bank ensures effective governance of its systems within the following institutional framework. As laid down in the Bank of Japan Law, important issues concerning its payment and settlement systems are discussed and decided by the Policy Board, and the decisions are released in the Bank's publications, such as the *Outline of Business Operations* for each fiscal year and the *Monthly Report of the Policy Board of the Bank of Japan*.²¹ Research and policy planning to enhance the safety and efficiency of the Bank's systems are conducted in a section of the Bank separate from the one in charge of daily system operations. When offering new services or modifying existing ones, the Bank consults with and solicits comments and opinions from parties concerned through public consultation or participant surveys, so that their opinions are reflected in the changes. The Bank's operation of its own payment and settlement systems is audited annually by the Bank's Executive Auditors. The Bank undergoes assessment by the Financial Sector Assessment Program of the International Monetary Fund and the World Bank.

E. Operating Hours and Pricing Policy

1. Operating hours of the Bank's payment and settlement systems

The Bank sets the operating hours of its funds transfer and JGB settlement systems basically according to the trading hours of relevant markets.

When necessary, the Bank extends the operating hours of its systems giving due consideration to market conditions and the needs of users. For example, until the introduction of RTGS for JGB issuance in June 2002, the Bank had extended the operating hours of its JGB settlement system on days JGBs

18. Under the Law, which will come into effect on January 6, 2003, stock corporations will be able to operate JGB book-entry systems upon designation by the competent ministers.

19. See "Conversion to the New JGB Book-entry System Based on the New Legal Framework," available on the Bank's Web site (<http://www.boj.or.jp/en/index.htm>).

20. Both documents are available on the Bank's Web site (<http://www.boj.or.jp/en/index.htm>).

21. Both publications are available only in Japanese.

were issued.²² The decision on the extension was made based on comments and suggestions the Bank received through public consultation. Also, to support private-sector initiatives to reduce settlement risk in foreign exchange transactions, the Bank has extended since May 2002 the operating hours of its funds transfer system by two hours to 19:00, increasing the overlap with other central banks' payment systems.²³ In addition, the Bank extends the operating hours of its systems when requested by the Tokyo Bankers Association, the operator of the Domestic Fund Transfer System (Zengin System), on days when a large volume of transactions is expected, as on the last business day of the month.

2. Pricing policy for the Bank's settlement services

The Bank currently charges the users of its settlement services based on the following pricing policy. The Bank bears the costs of development and maintenance of its own funds transfer and JGB settlement systems, because they are public infrastructures supporting the nation's financial market and it is the Bank's responsibility to make necessary investments with regard to those systems in response to changes in the environment, such as advances in information technology. On the other hand, the Bank charges users who transmit payment instructions online for the costs of the connection to the BOJ-NET and of telecommunications, in the form of monthly fixed fees and transaction fees, respectively. This is based on the fact that users of online services can enjoy the additional benefit of a reduced operational burden compared with those with paper-based access.²⁴

III. The Bank's Oversight of Payment and Settlement Systems

A. Oversight of Payment Systems

1. Objective of oversight

Japan's major payment systems comprise those operated by the private sector, such as the Domestic Fund Transfer System (Zengin System), the Foreign Exchange Yen Clearing System, and bill and check clearing systems, and the funds transfer system operated by the Bank. They support Japan's economic activity by complementing each other (see Annex 3 for an outline of major payment and settlement systems in Japan).

In addition to its efforts to enhance the safety and efficiency of its own funds transfer system, the Bank closely monitors the safety and efficiency of payment systems it does not operate, and encourages the operators of these systems to make improvements where necessary.²⁵ This activity of the Bank is usually referred to as "oversight."²⁶

The objective of the Bank's oversight activity is to ensure the safety and efficiency of Japan's overall payment and settlement system. Oversight is conducted as one of the activities to "ensure smooth settlement of funds among banks and other financial institutions" (Paragraph 2, Article 1 of the Bank of Japan Law).

The focus of the Bank's oversight is the safety of the systems—the Bank ensures, through adequate risk management measures in their design and operation, that the systems do not become a source of systemic disruption. The Bank also gives due consideration to the efficiency of the systems, in order to avoid a situation where a safe payment system is not sufficiently used because it does not satisfy market demands in terms of efficiency.

22. On days interest-bearing JGBs were issued, the operating hours were extended by an hour and a half, until 18:00 for JGB settlements and 18:30 for funds transfers. On days JGBs other than interest-bearing JGBs were issued, they were extended by an hour, until 17:30 and 18:00, respectively.

23. Only for participants that have applied for extended access to the system.

24. In order to promote online processing, the Bank also charges for paper-based payment instructions and for requests for credit using Bank of Japan checks.

25. There are cases where a bank provides payment services to other banks by transferring funds between their accounts on its books. These services are usually provided through bilateral arrangements between the bank and its customer banks, and differ from payment systems, which are operated based on multilateral arrangements. However, depending on factors such as the number of banks using the services and the size and nature of transactions handled, they could possess some characteristics of a payment system. In such cases, it is appropriate for the Bank to oversee these services.

26. As explained earlier, the Bank conducts on-site examinations and off-site monitoring of financial institutions holding current accounts with it. While oversight aims to ensure appropriate risk management in the design and operation of payment and settlement systems, on-site examinations and off-site monitoring focus rather on individual participants. Nevertheless, in assessing financial institutions' financial condition and their management of various risks, the Bank also examines them, where necessary, from the perspective of the safety of Japan's overall payment and settlement system. In this regard, on-site examinations and off-site monitoring, and oversight by the Bank complement each other.

2. Standards for oversight

The Bank uses the Core Principles as the standards in its oversight of payment systems. The intensity of the Bank's oversight depends on the extent to which the system could affect the safety and efficiency of the overall payment and settlement system.

For systemically important payment systems in Japan, the Bank evaluates their compliance with the Core Principles and encourages system operators to take necessary measures to remedy any deficiency.²⁷ As for payment systems that are not systemically important, the Bank encourages system operators to take measures in line with the Core Principles as appropriate, depending on the size and nature of the risks associated with each system.²⁸ For example, the Bank pays adequate attention to payment systems that are widely used, even if they pose relatively little systemic risk.²⁹

Even if a system has been evaluated as compliant with the Core Principles at a particular point in time, changes in its environment such as those in financial markets, information technology, and the value and volume of transactions processed, could affect its compliance. The Bank therefore monitors and evaluates systemically important payment systems on a continuous basis.

B. Oversight of Securities Settlement Systems

The Bank also closely monitors the safety and efficiency of securities settlement systems it does not operate, and encourages system operators to make improvements where necessary. This is because, as stated earlier, securities settlement is closely interrelated to “settlement of funds among banks and other financial institutions” (Paragraph 2, Article 1 of the Bank of Japan Law). First, securities are highly liquid assets and heavily traded in exchange for funds among financial institutions. Second, the value of the cash legs of securities transactions is very large. And third, securities

are often used for the Bank's monetary policy operations and to collateralize the Bank's credit extension.

The Bank oversees securities settlement systems with attention to not only the mechanisms for securities delivery but also those for payment, where a system has payment system aspects.³⁰

As stated earlier, the standards employed in the Bank's oversight of securities settlement systems are the Recommendations and the Core Principles. The Bank encourages their operators to take adequate measures to ensure their observance of each of the Recommendations and the Core Principles, in differing degrees depending on the extent to which each system could affect the safety and efficiency of the overall payment and settlement system.

C. Oversight of Payment and Settlement Systems with Cross-Border Aspects

As financial transactions become increasingly global, payment and settlement systems tend to have cross-border aspects. There are cases, for example, where non-resident banks participate in Japan's payment and settlement systems,³¹ or where payment and settlement systems handle multiple currencies and operate over several jurisdictions. Systems with cross-border aspects have the potential to affect the safety of payment and settlement systems in more than one country, as settlement failure in one country could have a systemic effect on systems in other countries and result in serious disruptions. To prevent such systemic disruption, the Bank oversees payment and settlement systems with cross-border aspects in cooperation with the central banks of the countries where the systems or their participants are located, and with the central banks issuing the currencies handled by the systems.³²

As the oversight standards for payment and settlement systems with cross-border aspects, the Bank employs standards set out in the

27. Whether a payment system is systemically important or not is determined based on factors such as the size and nature of the individual payments and their aggregate value. Besides its own funds transfer system, the Bank currently considers the Domestic Fund Transfer System (Zengin System), the Foreign Exchange Yen Clearing System, and the Tokyo Clearing House to be systemically important.

28. Paragraph 3.0.2 of the *Core Principles for Systemically Important Payment Systems* states, “The Core Principles may also be useful in assessing and understanding the characteristics of systems which pose relatively little systemic risk and it may be desirable for such systems to comply with some or all of the Core Principles.”

29. Paragraph 6.11 of the *Core Principles for Systemically Important Payment Systems* states, “Where a payment system is not systemically important, it can still be appropriate to apply many or all of the Core Principles. This is particularly likely if the system is widely used and users have no ready substitute methods of making the same payments.”

30. For example, securities settlement systems often provide clearing services for funds.

31. Such participation is referred to as “remote access.”

32. See Responsibility D of the central bank in Annex 1.

Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries (the “Lamfalussy Standards”),³³ the Core Principles, and the Recommendations.

D. Oversight Tools

Oversight tools used by central banks vary from country to country depending on the legal and institutional framework and historical background. The tools used include establishment of system rules and regulations, consultation on or approval of changes in system rules, as well as moral suasion.

The Bank mainly makes use of moral suasion as its oversight tool.³⁴ For payment and settlement systems that settle participants’ net obligations through current accounts with the Bank, however, the Bank, in addition to examining their operational capabilities and risk management measures according to its access criteria,³⁵ is involved, where necessary, in the process of making changes to the arrangements of these systems through consultation or approval procedures.³⁶ The Bank places particular importance on the oversight of these systems, because if they are not operated appropriately they could adversely affect settlements through the Bank’s own funds transfer system, and ultimately the safety and efficiency of the payment and settlement system as a whole.

Examples of the Bank’s oversight activities are as follows:

- The Bank collects and analyzes information on existing systems and those at the design stage with respect to risk management and operational reliability. The Bank encourages operators of these systems to enhance the safety and efficiency of their systems where necessary.
- The Bank periodically monitors payment and settlement systems to see if there have been changes in the size or nature of the individual payments

processed by the systems or their aggregate value, in order to evaluate whether the systemic importance of the systems has changed.

- The Bank encourages the relevant authorities to formulate and make necessary revisions to laws and other regulations, from the viewpoint of ensuring the safety and efficiency of the payment and settlement systems.

E. Cooperation with Other Central Banks

The Bank participates in cooperative oversight activities based on the framework established among the central banks of the Group of Ten countries. For example, it oversees the Continuous Linked Settlement (CLS) system in cooperation with the relevant central banks.³⁷

At the international fora for central banks such as the CPSS of the Group of Ten countries, central banks study and analyze developments in payment and settlement systems, and formulate international standards to be used in their oversight activities. The Core Principles and the Recommendations are among the fruits of such international cooperation in which the Bank is involved.

IV. The Bank’s Recent Activities in the Area of Payment and Settlement Systems

A. Enhancing the Safety and Efficiency of the Bank’s Payment and Settlement Systems

1. Introducing the new RTGS system

On January 4, 2001, the Bank abolished the designated-time settlement mode and made RTGS the sole settlement mode for transfer of funds and JGBs. Since the changeover, all transfers of funds and JGBs have been settled on an RTGS basis in principle, and thus the possible adverse effects of financial institutions’ inability to settle on Japan’s

33. *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries*, BIS, November 1990. The report sets out standards for the design and operation of cross-border and multicurrency netting and settlement schemes.

34. Specifically, moral suasion includes activities such as persuading operators of private-sector payment and settlement systems to improve the safety and efficiency of their systems, and expressing the Bank’s views on payment and settlement system issues at relevant meetings. See also Section IV.B, “The Bank’s Oversight Activities.”

35. For payment systems, see “Criteria for Parties Eligible to Hold Current Accounts with the Bank and Have Access to the Bank’s Lending” and “Detailed Criteria for Parties Eligible to Hold Current Accounts with the Bank.” For securities settlement systems, see “Establishment of Requirements for Admission as a Participant in the JGB Book-Entry System” and “Detailed Criteria with Regard to the Applicant’s Financial Condition.”

36. Operators of the Domestic Fund Transfer System (Zengin System), Foreign Exchange Yen Clearing System, and bill and check clearing systems (those that settle participants’ net obligations through current accounts with the Bank) are required to consult with and obtain the approval of the Bank when making changes to system design such as changes to risk management measures. The Bank also requires securities settlement systems that participate in the JGB settlement system to provide information on their operational capability and risk management measures.

37. The Continuous Linked Settlement (CLS) system is a cross-border payment system for multiple currencies designed to reduce settlement risk in foreign exchange transactions by using a payment-versus-payment (PVP) mechanism.

overall payment and settlement system have been significantly reduced.³⁸

2. Improving the network infrastructure of the BOJ-NET

In January 2002, the Bank released for public comment a proposal for further improving the network infrastructure of the BOJ-NET, to accommodate to innovations in network technology and to the standardization of message formats. Specific plans include (1) improving computer-to-computer connections, (2) enabling PC-based connection, and (3) ensuring flexibility with regard to message format by adjusting the system to accept formats based on the international standard. Following public consultation, the Bank decided in March 2002 to implement its proposal.³⁹

B. The Bank's Oversight Activities

1. Encouraging improvements in risk management measures

The Bank has been encouraging operators of systemically important payment systems with end-of-day net settlement to improve their risk management measures. The Bank has advised these system operators to establish arrangements that, at a minimum, ensure the timely completion of daily settlements in the event of inability to settle by the participant with the largest single settlement obligation, such as collateral or guarantee arrangements and arrangements for securing sufficient liquidity.⁴⁰ Following dialogue with the Bank, the Foreign Exchange Yen Clearing System and the Domestic Fund Transfer System (Zengin System) reviewed their systems and implemented new risk management measures in December 1998 and January 2001, respectively, so as to be able to cope with an inability to settle by the participant with the largest single settlement obligation.⁴¹ To further improve their risk management, both systems are currently examining measures to ensure that they are

capable of completing settlement even in the event of inability to settle by the two participants with the largest single settlement obligations.

Similarly, the Bank also requires securities settlement systems that provide clearing services for funds to implement measures to ensure timely settlement.⁴²

2. Encouraging and cooperating with the private sector for implementation of DVP and PVP mechanisms

After introducing in 1994 a DVP mechanism for JGB settlement using the BOJ-NET,⁴³ the Bank has cooperated with private-sector securities settlement systems to introduce DVP mechanisms. In 1998, DVP was achieved for corporate and other bonds by linking JB Net with the BOJ-NET. The Bank also participated in the discussions for introducing a DVP mechanism for stocks traded on the Tokyo Stock Exchange, which was achieved in May 2001. In addition, the Bank is actively participating in relevant working groups to achieve DVP for commercial paper and other securities, and is preparing to make necessary changes to the BOJ-NET.

In the cross-border payments arena, the CLS system was established to reduce settlement risk in foreign exchange transactions through a payment-versus-payment (PVP)⁴⁴ mechanism, and went into full operation in September 2002. The Bank, in cooperation with the relevant foreign central banks, has been supporting the private sector's efforts by examining details of the project and advising on risk management measures.

3. Monitoring the performance of payment and settlement systems

The Bank periodically monitors the performance of major payment and settlement systems, and releases data on the volume and value of transactions processed and other information about the systems in the monthly publication "Payment and Settlement Statistics."

38. For the background to the decision to make RTGS the sole settlement mode and developments in the new RTGS system, see "Real-Time Gross Settlement (RTGS) in Japan: An Evaluation of the First Six Months," Bank of Japan, November 2001. The paper is available on the Bank's Web site (<http://www.boj.or.jp/en/index.htm>).

39. A Japanese-language paper on the Bank's plan to improve the network infrastructure of the BOJ-NET is available on the Bank's Web site (<http://www.boj.or.jp>).

40. See Core Principle V.

41. Information on the risk management measures implemented by the Domestic Fund Transfer System (Zengin System) and the Foreign Exchange Yen Clearing System are available on the Web site of the Japanese Bankers Association (<http://www.zenginkyo.or.jp/en/index.htm>).

42. See Recommendation 9 and Core Principle V.

43. Real-time DVP for JGB transactions was achieved with the introduction of the new RTGS system in 2001.

44. PVP is a mechanism for foreign exchange transactions which ensures that a final transfer of one currency occurs if and only if a final transfer of the other currency or currencies takes place.

In addition, given that the systems are increasingly dependent on information technology and telecommunications networks, the Bank follows developments in technology that may affect their safety and efficiency. The Bank also pays attention to issues related to hardware and software disruptions.

The Bank took initiatives in addressing the Year 2000 problem as part of such activities. Specifically, in cooperation with the operators of major payment and settlement systems, the Bank examined and encouraged the Year 2000 readiness of financial institutions and private-sector systems through surveys and industry-wide tests of connectivity between their systems and the BOJ-NET.

4. Participating in payment and settlement system reform initiatives

The Bank has been participating in the discussion on major reform of Japan's securities settlement

system. From the viewpoint of enhancing the safety and efficiency of securities settlement systems, the Bank has been expressing its views on such issues as the importance of introducing a DVP mechanism at the earliest stage possible, and the best legal framework for securities settlement.

5. Organizing the Payment System Forum

The Bank established the Payment System Forum in July 2000 to exchange views and opinions with operators of major payment and settlement systems on practical issues concerning payment and settlement systems in Japan.⁴⁵ The Bank has organized four meetings of the forum to date. Issues discussed at the forum include developments in the new RTGS system and business continuity plans for various contingencies.

45. Information on the Payment System Forum is available in Japanese on the Bank's Web site (<http://www.boj.or.jp>).

ANNEX 1: CORE PRINCIPLES AND CENTRAL BANK RESPONSIBILITIES

Core Principles for systemically important payment systems

- I. The system should have a well founded legal basis under all relevant jurisdictions.
- II. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.
- III. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.
- IV.* The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.
- V.* A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.
- VI. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.
- VII. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.
- VIII. The system should provide a means of making payments which is practical for its users and efficient for the economy.
- IX. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.
- X. The system's governance arrangements should be effective, accountable and transparent.

* Systems should seek to exceed the minima included in these two Core Principles.

Responsibilities of the central bank in applying the Core Principles

- A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.
- B. The central bank should ensure that the systems it operates comply with the Core Principles.
- C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.
- D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

ANNEX 2: RECOMMENDATIONS FOR SECURITIES SETTLEMENT SYSTEMS

1. Legal framework

Securities settlement systems should have a well founded, clear and transparent legal basis in the relevant jurisdictions.

2. Trade confirmation

Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.

3. Settlement cycles

Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.

4. Central counterparties (CCPs)

The benefits and costs of a CCP should be evaluated. Where such a mechanism is introduced, the CCP should rigorously control the risks it assumes.

5. Securities lending

Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.

6. Central securities depositories (CSDs)

Securities should be immobilised or dematerialised and transferred by book entry in CSDs to the greatest extent possible.

7. Delivery versus payment (DVP)

CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.

8. Timing of settlement finality

Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.

9. CSD risk controls to address participants' failures to settle

CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.

10. Cash settlement assets

Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.

11. Operational reliability

Sources of operational risk arising in the clearing and settlement process should be identified and minimised through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.

12. Protection of customers' securities

Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.

13. Governance

Governance arrangements for CSDs and CCPs should be designed to fulfil public interest requirements and to promote the objectives of owners and users.

14. Access

CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.

15. Efficiency

While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.

16. Communication procedures and standards

Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.

17. Transparency

CSDs and CCPs should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using the CSD or CCP services.

18. Regulation and oversight

Securities settlement systems should be subject to transparent and effective regulation and oversight. Central banks and securities regulators should cooperate with each other and with other relevant authorities.

19. Risks in cross-border links

CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlements.

ANNEX 3: MAJOR PAYMENT AND SETTLEMENT SYSTEMS IN JAPAN

1. Volume and Value of Transactions Handled in the Systems¹

Table 1
Payment Systems

	Volume (thousands)	Value (trillions of yen)
BOJ-NET Funds Transfer System ²	21	77.4
Domestic Fund Transfer System (Zengin System) ³	4,959	9.9
Foreign Exchange Yen Clearing System ⁴	39	28.0
Bill and check clearing systems ⁵	290	2.6

Table 2
Securities Settlement Systems

	Volume (thousands)	Value (trillions of yen)
BOJ-NET JGB Services ²	12	42.4
Depository and Book-entry Transfer System for Stocks ⁶	147	2.4
JB Net ⁷	0.6	0.3

Notes: 1. The volume and value of transactions are the daily average in calendar 2001, except for the Depository and Book-entry Transfer System for Stocks, where the volume and value are the daily average in fiscal 2001.

2. Source: Bank of Japan.

3. Source: Japanese Bankers Association.

4. Source: Tokyo Bankers Association.

5. Figures for the Tokyo Clearing House only. Source: Tokyo Bankers Association.

6. Value estimated based on data released by the Japan Securities Depository Center (JASDEC) and others.

7. Source: Japan Bond Settlement Network Co., Ltd.

2. Outline of Private-Sector Systems

Domestic Fund Transfer System (Zengin System)	Used for clearing domestic funds transfers for third parties, where not only sending banks and receiving banks but also payer customers and/or payee customers such as individuals and firms are involved. Operated by the Tokyo Bankers Association.
Foreign Exchange Yen Clearing System	Used for clearing of interbank yen payments resulting from cross-border financial transactions including foreign exchange transactions, yen-denominated bond transactions, and export-import payments. Managed by the Tokyo Bankers Association.
Bill and check clearing systems	Used for clearing payments arising from bills and checks drawn by individuals or firms. Clearing houses serve their respective geographical areas, and are managed by their respective regional bankers' associations.
Depository and Book-entry Transfer System for Stocks	Book-entry system for listed stocks and over-the-counter registered stocks, including stocks under supervision. ¹ Operated by the Japan Securities Depository Center (JASDEC).
JB Net	An online network system linking its participants, registrars, and the Bank of Japan that enables online transmission of transfer requests for corporate and other bonds. ² Operated by the Japan Bond Settlement Network Co., Ltd.

Notes: 1. Stocks that are scheduled to be delisted but are still being traded for a certain period to protect investors.

2. Other bonds include municipal bonds, government-guaranteed bonds, and bank debentures.