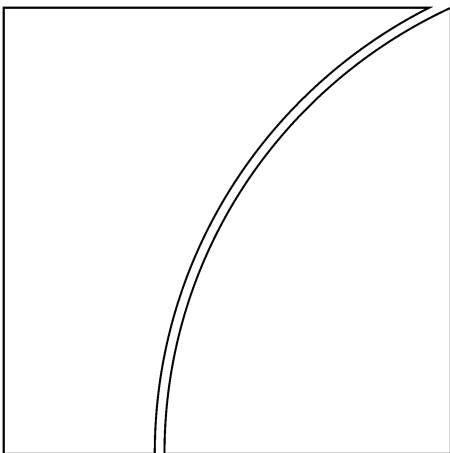


Committee on Payment and
Settlement Systems

Technical Committee of the
International Organization of
Securities Commissions



Assessment methodology for “Recommendations for Securities Settlement Systems”

November 2002



BANK FOR INTERNATIONAL SETTLEMENTS



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Foreword

Securities settlement systems (SSSs) are an increasingly important component of the domestic and global financial infrastructure. It is for this reason that the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries and the Technical Committee of the International Organisation of Securities Commissions (IOSCO) established the Task Force on Securities Settlement Systems in December 1999 to develop recommendations for the safety and soundness of SSSs.

In November 2001 the CPSS-IOSCO Recommendations for Securities Settlement Systems were published. The November 2001 report sets out and discusses 19 recommendations for SSSs that identify minimum standards that SSSs should meet. The recommendations are designed to cover systems for all types of securities, for securities issued in both industrialised and developing countries, and for domestic as well as cross-border trades. These recommendations have been included in the Key Standards for Sound Financial Systems highlighted by the Financial Stability Forum. The CPSS and the Technical Committee of IOSCO encourage national authorities responsible for the regulation and oversight of SSSs to assess whether markets in their jurisdiction have implemented the recommendations and to develop action plans for implementation where necessary.

This report aims to set out a clear and comprehensive methodology for use in these assessments. The methodology is primarily intended for use in self-assessments by national authorities or in peer reviews of such self-assessments. It is also intended to serve as guidance for the international financial institutions (IFIs, ie the International Monetary Fund and the World Bank) undertaking their Financial Sector Assessment Program (FSAP) assessments and for other forms of technical assistance, possibly including financing of reform efforts by the World Bank. In this regard, IFIs took part in developing this assessment methodology. Further, we hope that the methodology may also prove useful to private market participants who may be conducting their own assessments of the safety and efficiency of SSSs on the basis of the SSSs' observance of the recommendations.

The CPSS and the Technical Committee of IOSCO are grateful to the members of the Task Force and its Co-Chairmen, Patrick Parkinson of the Board of Governors of the Federal Reserve System and Shane Tregillis of the Monetary Authority of Singapore, for their work in completing this report in a timely manner.

Tommaso Padoa-Schioppa, Chairman
Committee on Payment and Settlement Systems

David Knott, Chairman
Technical Committee, IOSCO

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1. Introduction

1.1 In November 2001 the Bank for International Settlements published a report entitled *Recommendations for Securities Settlement Systems (RSSS)*. This report was prepared by the Task Force on Securities Settlement Systems, which was created for that purpose in December 1999 by the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries and the Technical Committee of the International Organisation of Securities Commissions (IOSCO). It sets out and discusses 19 recommendations for securities settlement systems (SSSs), implementation of which is intended to enhance the safety and efficiency of those systems. Subsequently, the Financial Stability Forum included the recommendations in its list of Key Standards for Sound Financial Systems. Among the Key Standards, the recommendations for SSSs have been grouped with the CPSS's *Core Principles for Systemically Important Payment Systems (CPSIPS)* under the common subject of Payment and Settlement Systems. The Key Standards also include IOSCO's *Objectives and Principles of Securities Regulation*.

1.2 The November 2001 report emphasises the need for a concerted effort to implement the recommendations. While primary responsibility for implementation lies with the designers, owners, and operators of SSSs, which most often are private sector entities, the report stresses the need for central banks, securities regulators, and other relevant national authorities to promote implementation by undertaking self-assessments of whether systems in their jurisdiction have implemented the recommendations and by identifying steps necessary for completing implementation where initially the recommendations are not fully observed. The CPSS and the Technical Committee of IOSCO indicated that they also saw value in external assessments of implementation, including assessments by the international financial institutions (IFIs, ie the International Monetary Fund and the World Bank), in particular as part of their Financial Sector Assessment Program (FSAP).

1.3 The purpose of this report is to develop a clear and comprehensive methodology for assessing whether the recommendations have been implemented. The methodology is intended primarily for use in self-assessments by national authorities or in peer reviews of such self-assessments. It also is intended to serve as guidance for FSAP assessments and for other forms of technical assistance, possibly including financing of reform efforts by the World Bank. The methodology may also prove useful to private market participants who may be conducting their own assessments of the safety and efficiency of SSSs on the basis of the SSSs' observance of the recommendations. For example, a CSD or CCP may wish to perform its own self-assessment of those recommendations that are directly applicable to its operations. Or, broker-dealers or custodians may wish to use the recommendations to assess the risks to which they are exposed through participation in an SSS.

1.4 This report must be read in conjunction with the November 2001 report. It avoids repetition of the discussions of the recommendations that were contained in the earlier report and is not intended to amend or expand upon those discussions. The earlier report included key questions pertaining to the recommendations, as a first step towards development of an assessment methodology and as a potential framework for meeting the transparency recommendation (Recommendation 17). In this report, the key questions have been amended fairly extensively to align them more closely with the key issues that must be evaluated in order to determine the extent to which the recommendations have been implemented.

1.5 The next section of this report discusses the determination of the appropriate scope of an assessment. The core of the report is Section 3, which discusses how to assess implementation. For each recommendation, it (1) identifies the key issues that need to be evaluated to determine the extent to which the recommendation has been implemented, (2) identifies the key questions that must be asked to evaluate the key issues, and (3) discusses the relationship between the answers to the key questions and the assignment of an assessment category that summarises the extent of implementation. Where appropriate, explanatory notes addressing specific assessment issues are included. Section 4 provides guidance on development of a formal action plan for implementation where that is appropriate, including a discussion of how to set priorities and advice on how to engage the private sector in implementation efforts. Annex 1 provides a template for an Assessment Report and Annex 2 provides a template for public disclosure of information relevant to the assessment of the safety and efficiency of an SSS based on answers to the key questions.

2. Determination of the scope of an assessment

2.1 Before beginning an assessment, careful consideration needs to be given to its appropriate scope. Securities regulators, central banks, and other relevant authorities must work together to determine the range of securities to be covered and to identify the institutions that perform critical functions in the SSS. If any of those institutions are located in other jurisdictions or if the domestic central securities depositories (CSDs) involved have established links to settle cross-border trades, they will need to consider how best to cooperate with authorities in those relevant jurisdictions to obtain essential information without imposing unnecessary costs on the institutions involved.

2.2 In some countries trades in all securities are settled through the same settlement system. Consequently, in those countries an assessment of that system would cover all securities. However, in other countries different types of securities may be settled through different SSSs. For example, government securities may be cleared and settled through a CSD and a central counterparty (CCP) that are different from the CSD and CCP used to clear and settle equity securities. Or different stock exchanges within a country may operate their own distinct settlement systems. Authorities must clearly specify the range of securities covered by an assessment. Also, where there is more than one SSS, it may not be possible initially to assess all the SSSs at the same time and the authorities will need to set priorities. In general, priority should be given to the SSS that processes the highest average daily value of trades, because weaknesses in the largest systems are most likely to pose the greatest threat to financial stability and to entail the most significant opportunity costs from inefficiencies. However, if authorities are aware of significant weaknesses in a smaller SSS (for example, a failure to achieve delivery versus payment (DVP) or a lengthy settlement cycle), they may wish to assess that smaller system first. Other considerations, such as whether the system is used for monetary policy operations, may influence the order in which multiple SSSs are assessed, so that the order will not necessarily be indicative of the authorities' views of the relative weakness of the various systems. Where there are multiple markets and SSSs within a jurisdiction, no assessment may be necessary for very small markets with a separate SSS and a volume and value of trades that are very small relative to the aggregate activity in the jurisdiction.

2.3 Even if all securities traded in a country are settled through the same SSS, derivatives may be settled through a separate system. Exchange-traded derivatives are nearly always cleared and settled through a CCP, which may be organised as a department of the exchange or as a separate legal entity. Where it is a separate legal entity, that entity may act as CCP for multiple derivatives exchanges and possibly also for securities trades. The RSSS were not designed to be applied to derivatives and do not address comprehensively the risks they face or the risk management procedures they typically employ. Nonetheless, many of the recommendations, notably those on CCPs, legal framework, operational reliability, governance, access, transparency, and regulation and oversight, are relevant to clearance and settlement of exchange-traded derivatives. Where derivatives are settled through a CCP that also acts as counterparty to securities trades, the assessment of the SSS for those securities may need to address the CCP's management of risks with respect to those derivatives transactions. This is especially the case if collateral requirements and financial support arrangements apply to portfolios that include both securities and derivatives. But the recommendations need not be applied to exchange-traded derivatives that are cleared and settled by a separate CCP. In the future, international standards that would be applicable to CCPs for both securities and derivatives may need to be developed.

2.4 Because institutional arrangements for securities settlements are quite diverse internationally, the RSSS focus on the functions to be performed rather than the institutions that perform them. While several of the recommendations are addressed explicitly to CSDs, CCPs, or both, other recommendations are relevant to stock exchanges (as operators of trade confirmation systems or issuers of settlement guarantees), settlement banks, or custodians. In systems in which securities are held in an indirect holding system and in which custody services are highly concentrated, the distinction between the functions of a CSD and those of custodians has become blurred. If the trade counterparties (or the intermediaries through which they settle their trades) use the same custodian and the custodian holds the counterparties' securities in the same omnibus account at the CSD, those trades may be settled on the books of the custodian and not on the books of the CSD. If a significant share of settlements takes place on the books of any custodian, authorities should consider whether that custodian's policies and procedures are consistent with some of the recommendations, notably those addressing delivery versus payment, timing of settlement finality, CSD risk controls, cash settlement assets, custody risk, securities lending, and operational reliability.

2.5 Some institutions that perform critical functions in an SSS may be located in other jurisdictions. As noted earlier, some CCPs act as counterparties to trades in multiple markets, sometimes including markets in two or more countries. Also, if an SSS offers multicurrency settlement, it may conduct cash settlements using banks in other jurisdictions. In some cases, securities issued and traded in one country are settled solely through a CSD in another country. Finally, many CSDs have established cross-border links with other CSDs. When such links are used to settle cross-border trades, implementation of the recommendation on risks in cross-border links should be assessed. Even when such links are used solely to settle domestic trades in foreign securities, assessments of the recommendations on the legal framework and the protection of customers' securities may require the authorities to include the linked foreign CSDs (or CCPs) within the scope of the assessment. However, as noted earlier, whenever a foreign institution is included within the scope of the assessment, the authorities should cooperate with authorities in that country to obtain the necessary information about the institution.

2.6 An assessment report (see the template in Annex 1) should begin by identifying precisely the securities that are covered. It should then provide a description of the architecture of the settlement system for those securities (and any covered derivatives) that identifies the institutions that perform critical functions in the system. The description should include sufficient data to understand clearly the scale and scope of the system's operations, including data on the value of the securities held in the system and the average and peak values of securities settled within the system. The introductory section of the assessment report should also describe the process followed in conducting the assessment and identify the main sources of information that were utilised. The report should then provide a recommendation by recommendation assessment of implementation. An assessment report should conclude with steps for achieving full observance of any recommendations that are not fully observed, identifying specific actions to be taken and the parties that are best positioned to implement the recommended steps.

3. Assessment of implementation

3.1 The degree of implementation of each recommendation should be summarised by the assignment of one of five assessment categories: Observed, Broadly observed, Partly observed, Non-observed, or Not applicable. (Only a few of the recommendations may not be applicable in certain circumstances and an assessor should make clear why the recommendation is not applicable.) The remainder of this section provides guidance on how to assign a rating category for each of the recommendations. For each recommendation the guidance identifies the key issues relevant to implementation. These include the issues identified in the recommendations themselves as well as certain important issues that were identified in the discussions of the recommendations in the November 2001 report. For each key issue, the guidance identifies a key question, the answer to which should clearly demonstrate whether and how the key issue has been addressed by an SSS.

3.2 The guidance then indicates how the answers to the key questions should be translated into an assessment category. This guidance on the assignment of rating categories is not intended to be applied in a purely mechanical fashion. In some instances, an SSS may not strictly meet the assessment criteria for observance of a recommendation but may successfully address the safety or efficiency objectives that underlie the recommendation and the key issues and key questions. Nonetheless, the guidance is intended to establish a presumption as to what the appropriate rating should be, given the circumstances indicated by the answers to the key questions. Moreover, assessors should take a conservative approach to the assignment of ratings - when in doubt about observance, assign the lower category of observance. Whenever an assessor chooses to assign a different rating than is indicated by the guidance, the assessment report should explain clearly why a different rating category was deemed more appropriate. This approach is intended to foster discipline in the ratings process while allowing some flexibility to deal with special circumstances. The guidance also includes explanatory notes to clarify certain issues that seem likely to arise in the course of an assessment.

3.3 In some cases an SSS may be in the midst of significant transition at the time it is being assessed. An assessment should focus on the system as it is, not on how system operators plan or hope it to be. Plans to improve the system should be reflected in the section of the assessment report that presents the assessor's comments on necessary future actions to achieve observance of the

recommendations. In these comments the assessor should set out whether once in place the planned improvements would be sufficient to justify a higher rating category.

Recommendation 1: Legal framework

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

Key issues

1. As a general matter, the laws, regulations, rules and procedures, and contractual provisions governing the operation of SSSs should be clearly stated, understandable, public and accessible to system participants.
2. The legal framework should demonstrate a high degree of legal assurance for each aspect of the settlement process.
3. The rules and contracts related to the operation of the SSS should be enforceable in the event of the insolvency of a system participant.
4. The operators should identify the relevant jurisdictions and address any conflict of laws issues for cross-border systems.

Key questions

1. Are the laws, regulations, rules and procedures, and contractual provisions governing securities settlement arrangements public and readily accessible to system participants?
2. (i) Does the legal framework demonstrate a high degree of legal assurance that:
 - (a) transactions are enforceable?
 - (b) customers' assets are adequately protected (particularly against the insolvency of custodians and intermediaries)?(ii) Does the legal framework demonstrate a high degree of assurance that there is a clear and effective legal basis for:
 - (a) arrangements for the immobilisation or dematerialisation of securities and the transfer of securities by book entry?
 - (b) netting arrangements?
 - (c) securities lending arrangements (particularly the ability to obtain a security interest in assets)?
 - (d) finality of settlement?
 - (e) arrangements for achieving delivery versus payment?(iii) Has a court in the jurisdiction ever failed to uphold the legal basis of these activities/arrangements? And if so, for what reasons?
3. Are the rules of the system and contracts between system participants enforceable notwithstanding the insolvency of a participant?
4. (i) Is there a significant level of cross-border participation in the SSS? If so, please describe and answer Question 4(ii).
(ii) Are other jurisdictions relevant for determining the adequacy of the legal framework? How has this been determined? Has the legal framework been evaluated for the other relevant jurisdictions? Are there conflict of laws issues and, if so, have they been addressed?

Assignment of an assessment category

1. Observed
 - (a) The laws, regulations, rules and procedures, and contractual provisions governing the operation of SSSs are public and accessible to system participants. (Q1)
 - (b) The legal framework demonstrates a clear legal basis and a high degree of legal assurance for each aspect of the settlement process. (Q2)
 - (c) The rules and contracts are enforceable in the event of the insolvency of a system participant. (Q3)
 - (d) The operators of cross-border systems have identified the relevant jurisdictions and taken steps to address conflict of laws issues; or it is not necessary to address conflict of laws issues in assessing risk because cross-border participation in the system (such as non-domestic participants or assets) is at an insignificant level. (Q4)
2. Broadly observed
 - (a) 1a, 1b and 1c are satisfied with only very minor exceptions that do not risk undermining the safety and soundness of the system. (Q1, 2, 3)
 - (b) 1d is not satisfied. (Q4)
3. Partly observed
 - (a) The legal framework does not demonstrate a high degree of legal assurance for some aspects of the settlement process that, while important and posing some risks, do not jeopardise the overall safety and soundness of the system. (Q2)
 - (b) Or: there are some limited cases where rules and contracts may not be fully enforceable in the event of the insolvency of a system participant. (Q3)
4. Non-observed
 - (a) Aspects of the settlement process are not supported by the legal framework and this poses risks to the overall safety and soundness of the system. (Q2)
 - (b) Or: there is no demonstrated assurance that the rules and contracts are enforceable in the event of the insolvency of a system participant. (Q3)

Explanatory note

1. In the case of cross-border transactions the relevant jurisdictions for the legal assessment are set out in paragraph 3.6 of the report.
2. The general emphasis of an assessment should be for the assessor to be reasonably confident that there are no obvious gaps or problems with the legal basis for the SSS. The various components of the legal framework (eg securities law, contract law, commercial law, bankruptcy law, etc) should not be inconsistent with or override the rules or procedures of the SSS or its ability to meet these recommendations.
3. The assessor should obtain supporting evidence in the form of relevant statutory provisions, rules of the CSD and CCP, relevant legal opinions, regulations and policy statements and any inconsistent judgments from courts, if applicable.
4. A weakness in the legal framework that poses some risk but does not jeopardise the safety and soundness of the system would be one that the system operator or regulator can demonstrate can be appropriately mitigated by other means.
5. The legal framework is clearly insufficient if the courts of the jurisdiction do not function adequately, property rights are not respected, contracts are not enforceable, or there is no procedural due process. A system would also be non-observed if its domestic law is seriously inadequate and does not support the operation of the system upon the insolvency of a participant (eg by allowing the unwinding of settlements post-insolvency as a result of preference or zero hour rules).

Recommendation 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.

Key issues

1. Confirmation of trades between direct market participants should occur no later than T+0.
2. Settlement instructions should be matched prior to settlement.
3. Where confirmation of trades by indirect market participants is required by regulators, clearing systems, or market operators, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.

Key questions

1. What percentage of trades between direct market participants is submitted to a trade confirmation system on the trade date (T+0)? How soon after submission are problems communicated to the appropriate parties?
2. Does the CSD require settlement instructions to be matched prior to settlement?
3. Are there trade confirmation procedures that are capable of comparing trade information between direct and indirect market participants by T+1? Is use of the system mandatory? For what types of indirect market participants? Of those trades involving indirect market participants for which confirmation is required, what percentage is confirmed by T+0, by T+1, by the contractual settlement date?

Assignment of an assessment category

1. Observed
 - (a) A high percentage of trades between direct market participants is confirmed on T+0. (Q1)
 - (b) Settlement instructions are matched prior to settlement. (Q2)
 - (c) Where confirmation of trades by indirect market participants is required, a high percentage is confirmed no later than T+1. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: 1c is not satisfied. (Q3)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) But: 1b is not satisfied. (Q2)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)

Explanatory note

1. In many markets, the use of electronic trading systems obviates the need for direct market participants to confirm the terms of the trade.
2. This recommendation does not require confirmation by indirect market participants, but in some markets such confirmation is required by regulators, clearing systems or market operators. Generally, indirect market participants for whom confirmations are required include institutional investors and cross-border customers.

3. It is sometimes difficult for all the trades to be confirmed by the deadlines. However, a high percentage of trades should be confirmed by the deadlines to meet the recommendation. For confirmation of trades between direct market participants, "a high percentage" means 98% or more. For confirmation of trades between direct and indirect market participants, "a high percentage" means 90% or more. If centralised systems are in place, assessors should obtain data about the performance of the systems. If trades are matched or compared bilaterally rather than through a centralised system, it may be difficult to determine the degree of observance of the recommendation based only on such data. Qualitative information about performance should be obtained, however, and used to assess observance.
4. Where 24-hour trading is conducted, confirmation within 24 hours after each trade is regarded as compliant with T+0. Where trading is conducted during a limited time window, confirmation before resumption of the next day's trading is regarded as compliant with T+0 trade confirmation.
5. The CSD need not require that settlement instructions be matched prior to free-of-payment transfers.

Recommendation 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.

Key issues

1. Rolling settlement should occur no later than T+3.
2. Frequency and duration of settlement failures should be monitored.
3. Risk implications of fail rates should be analysed and actions taken that reduce the rates or mitigate the associated risks.
4. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.

Key questions

1. Are trades settled on a rolling basis of T+3 or shorter?
2. What percentage of trades (by number and value) fails to settle on the contractual date? What is the average duration of fails (by number and value)?
3. Do market practices, regulations or SSS rules provide incentives for counterparties to settle their obligations on the contractual date? What forms do these incentives take, for example are penalties assessed for failing to settle? What steps, if any, are taken to mitigate the risks of fails? Are fails required to be marked to market? Are open positions required to be closed out at market prices if the duration of the fail exceeds a specified number of business days? What entity or entities establish, monitor and enforce these requirements?
4. If settlement is on an account period basis or on a rolling basis at T+3 or longer, have the benefits and costs of a rolling cycle or a shorter settlement cycle been evaluated? If so, by whom? Has the evaluation been documented? What was the conclusion? Did the conclusion differ depending on the type of security?

Assignment of an assessment category

1. Observed
 - (a) Rolling settlement occurs no later than T+3. (Q1)
 - (b) Fails are not a significant source of added risk or risks from fails are effectively mitigated. (Q2, 3)
 - (c) If T+3, a cost-benefit analysis of a shorter settlement cycle has been performed. (Q4)

2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2, 3)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) 1b is not satisfied. (Q2, 3)
4. Non-observed
 - (a) Settlement on an account period basis or settlement on a rolling basis longer than T+3. (Q1)

Explanatory note

1. The amount of risk posed by fails will be a function of the volatility of the security being settled, the length of time before the fail is resolved and the size of the transaction. This risk can be mitigated by marking failed positions to market and collateralising exposures that arise. Some systems also place limits on the time that a failure can remain outstanding before the system itself buys and delivers the security.
2. The cost-benefit analysis should, at minimum, include assessment of the risks involved under T+3, the potential benefit of reducing risks under the shorter settlement cycle, the steps to compress the settlement cycle, and any preconditions necessary for a shorter cycle. The cost-benefit analysis preferably should take into account the risks of an increase in the settlement fail rate if a shortening of the settlement cycle is implemented. Alternatively, the study could demonstrate that the risks of T+3 do not pose a danger to the settlement system (for example, if the risks are small relative to the capital of participants). In some instances, the risks associated with T+3 settlement may be large but the costs of a shorter settlement may also be large. A solution in such cases may be to mitigate the risks of T+3 settlement rather than to shorten the settlement cycle.
3. In assessing whether fails are a significant source of risk, fails should not exceed 5% by value.

Recommendation 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.

Key issues

1. The balance of the benefits and costs of a CCP should be carefully assessed.
2. The legal basis for any netting arrangements should be sound and transparent.
3. A CCP should institute risk controls sufficient to withstand severe shocks, including defaults by one or more of its participants.
4. Adequacy of resources to absorb financial losses should be monitored; resources should be accessible and rules should specify clearly how defaults will be handled and how losses will be shared.

Key questions

1. Has a CCP mechanism (or an indemnification arrangement) been introduced? If so, what types of securities and market participants are covered? If no such mechanism has been introduced, have the benefits and costs of such a mechanism been evaluated? If so, by whom? Has the assessment been documented? What was the conclusion?
2. What are the netting arrangements for a CCP (by novation or otherwise)? Do the netting arrangements have a sound and transparent legal basis? Is netting enforceable against the participants in insolvency?

3. Does the CCP impose financial and operational standards for participation? How does the CCP manage its credit risk vis-à-vis participants? Does it require participants to collateralise their exposures? How often are collateral requirements recomputed and collateral collected? How does the CCP manage its liquidity risk? Does the CCP have in place agreements permitting it to borrow against collateral? In assessing its credit and liquidity risk, does the CCP evaluate its ability to withstand the default of more than one of its participants?
4. Has a participant ever defaulted? If so, how did the CCP handle the default? What are the financial resources of the CCP? How does the CCP assess the adequacy of the size and liquidity of its financial resources? Does it require participants to contribute to a clearing or guarantee fund? Does the CCP have legally enforceable interests in or claims on the assets in the fund? Does the CCP have transparent and enforceable loss allocation rules?

Assignment of an assessment category

1. Observed
 - (a) If there is no CCP, the balance of the benefits and costs of a CCP has been assessed carefully and benefits do not exceed costs. (Q1)
 - (b) If a CCP is in place, the legal basis for any netting arrangements is sound and transparent (Q2) and rigorous risk control is achieved. (Q3, 4)
2. Broadly observed
 - (a) If a CCP has been introduced, netting arrangements are sound and transparent. (Q1, 2)
 - (b) While the CCP is able to withstand severe shocks, including defaults by one or more of its participants, some risk control measures should be strengthened. (Q3, 4)
3. Partly observed
 - (a) If a CCP has been introduced, netting arrangements are sound and transparent. (Q1, 2)
 - (b) But: some risk control measures could be strengthened, particularly those related to the ability to handle multiple defaults. (Q3, 4)
4. Non-observed
 - (a) There is no CCP and the balance of the benefits and costs of a CCP has not been assessed. (Q1)
 - (b) If a CCP is in place, netting arrangements do not have a sound and transparent legal basis or risk control measures are insufficient to withstand a default by its largest participant. (Q2, 3, 4)

Explanatory note

1. The evaluation of whether a CCP could withstand severe shocks should consider its ability to cope with defaults by its very largest participants.
2. For securities markets where volume and value are relatively small, the cost and benefit analysis does not need to be extensive.
3. In some markets many of the benefits of a CCP are achieved by establishing an entity that indemnifies market participants against losses from counterparty defaults without actually acting as CCP (see 3.17 in the report). The recommendation applies to such an indemnification arrangement.
4. If there is no CCP, the recommendation will be observed or not observed depending upon whether a cost benefit analysis has been done. If the assessor was concerned about the quality of this analysis, however, the assessor might consider use of the broadly or partly observed categories.

Recommendation 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.

Key issues

1. Impediments (legal and tax, for example) to the development and functioning of securities lending should be removed.
2. Securities lending and borrowing should be encouraged as a method for expediting securities settlement (such as reducing settlement failures).
3. Supervisors and overseers should have policies and procedures to ensure that risks stemming from securities lending activities are appropriately managed by entities subject to their oversight.

Key questions

1. Are markets or facilities for securities lending (or repurchase agreements and other economically equivalent transactions) clearly supported by legal, regulatory, accounting and tax systems?
2. Are there markets or facilities for securities lending (or repurchase agreements and other economically equivalent transactions)? If any, are they used as a method to expedite securities settlement? How wide is the range of securities and participants involved in the markets?
3. Do supervisors and overseers review risk management procedures for securities lending? Do they have policies with respect to these activities?

Assignment of an assessment category

1. Observed
 - (a) There are no impediments to the development and functioning of securities lending. (Q1)
 - (b) Securities lending activities are available as a method for expediting securities settlement (such as reducing settlement failures). (Q2)
 - (c) Supervisors have policies and procedures related to securities lending arrangements and review these arrangements to ensure that risks are appropriately monitored and controlled. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: 1c is not satisfied. (Q3)
3. Partly observed
 - (a) 1b is satisfied. (Q2)
 - (b) 1a is not satisfied, but authorities are making efforts to remove the impediments. (Q1)
4. Non-observed
 - (a) 1a is not satisfied or 1b is not satisfied. (Q1, 2)
5. Not applicable

Explanatory note

1. An assessor should take into account that securities lending may be available but is not used to expedite settlement owing to low fail rates or other mechanisms available to market

participants to deal with settlement issues. In such cases, the appropriate assessment category may be “Not applicable”.

2. The lending of securities by a CSD to its participants is not necessarily inconsistent with the requirement that debit balances in securities be prohibited (Recommendation 9). If a CSD acts as principal in securities lending transactions, however, it must have appropriate risk controls.

Recommendation 6: Central securities depositories (CSDs)

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

Key issues

1. Immobilisation or dematerialisation and transfer by book entry in CSDs should be implemented to the greatest extent possible.
2. In jurisdictions that operate a direct holding system but in which the CSD is not the official registrar of the issuer, a transfer of securities in the CSD should result automatically in the transfer of legal title to the securities in the official register of the issuer.

Key questions

1. Are securities issued on a dematerialised basis or as a physical certificate? If the latter, are they immobilised in a CSD to facilitate settlement? What percentage of securities issued domestically is either immobilised or dematerialised, and what is the trend? Is the transfer of securities carried out by book entry or does it require any form of physical delivery?
2. Is there a lag between settlement and registration and what are the implications of the time lag for finality? If the CSD is not the official registrar, does the transfer of securities in the CSD result in the transfer of securities in the official register?

Assignment of an assessment category

1. Observed
 - (a) Immobilisation or dematerialisation is achieved (at least for the securities held by the most active market participants) and securities are transferred by book entry in CSDs. (Q1)
 - (b) If the system is a direct holding system in which the CSD is not the official registrar, a transfer of securities in the CSD results in transfer of legal title. (Q2)
2. Broadly observed
 - (a) A CSD exists that allows securities to be transferred by book entry. (Q1)
 - (b) But: some of the most active market participants do not have their securities immobilised or dematerialised. (Q1)
 - (c) 1b is satisfied. (Q2)
3. Partly observed
 - (a) Immobilisation or dematerialisation and book entry transfer in CSDs is not achieved for significant numbers of the most active market participants. (Q1)
 - (b) 1b is not satisfied. (Q2)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)

Explanatory note

1. The “most active market participants” are those that account for the highest daily average value of trades.

Recommendation 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.

Key issues

1. The technical, legal and contractual framework should ensure DVP.
2. The great majority of securities transactions between direct participants of the CSD by value should actually be settled on a DVP basis.

Key questions

1. Does the technical, legal and contractual framework ensure that delivery of securities takes place if, and only if, payment is received? If so, how?
2. What proportion of trades between direct participants of the CSD (by value) is settled on a DVP basis?

Assignment of an assessment category

1. Observed
 - (a) The technical, legal and contractual framework ensures DVP. (Q1)
 - (b) Ninety-five per cent or more of the trades between direct participants of the CSD (by value) are actually settled on a DVP basis. (Q2)
2. Broadly observed
 - (a) 1a is satisfied. (Q1)
 - (b) Ninety per cent or more of the trades between direct participants of the CSD (by value) are actually settled on a DVP basis. (Q2)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) Fifty per cent or more of the trades between direct participants of the CSD (by value) are actually settled on a DVP basis. (Q2)
4. Non-observed
 - (a) 1a is not satisfied or less than 50% of trades between direct participants of the CSD (by value) are actually settled on a DVP basis. (Q1, 2)

Explanatory note

1. In some instances there is a CSD that achieves DVP but the majority of trades by value are settled by free transfers rather than by use of the DVP mechanism. Such a situation would not meet the standard for observed or broadly observed.
2. This recommendation relates to the settlement of purchases and sales of securities: free transfers of securities may occur for other reasons, for example satisfaction of collateral requirements. Free transfers for these purposes are not inconsistent with the recommendation.
3. DVP can be achieved through various models (three can be differentiated) providing different timing of settlement finality. Whatever model is used, it is essential that the technical, legal

and contractual frameworks ensure that such transfer of securities is final if and only if the corresponding transfer of funds is final.

Recommendation 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.

Key issues

1. The timing of settlement finality should be defined clearly and final settlement should occur no later than the end of the settlement day.
2. Intraday or real-time finality should be provided where necessary to reduce risks (monetary policy, payment system operations, settlement of back-to-back transactions, intraday margin call by CCPs, safe and efficient cross-border links between CSDs).
3. The unilateral revocation of unsettled transfer instructions late in the settlement day should be prohibited.

Key questions

1. Does the CSD permit final settlement of securities transfers by the end of the settlement day? Is the timing of settlement finality clearly defined for transactions within the CSD and for transactions over a link to another CSD?
2. Does the CSD permit final settlement of DVP transfers on a continuous basis throughout the day or at certain designated times during the day? If the latter, at what times do transfers become final? Is there a need for intraday or real-time finality to reduce risks? Do central banks use the SSS in monetary policy operations or to collateralise intraday credit extensions in a payment system? Do active trading parties or CCPs have a need for intraday or real-time finality to manage their risks effectively? Is there a need for intraday or real-time finality to facilitate settlement through links to other CSDs? Is there a need for intraday finality to facilitate the smooth functioning of some markets (for example, repurchase agreement markets)?
3. Does the CSD prohibit the unilateral revocation of unsettled transfer instructions late in the settlement day? Does the CSD receive provisional transfers of securities from any other CSDs? If so, does it prohibit retransfer of these securities until they become final? If not, what would be the consequences of an unwind of such provisional transfers for the CSD's participants?

Assignment of an assessment category

1. Observed
 - (a) The timing of settlement finality is clearly defined and final settlement occurs no later than the end of the settlement day. (Q1)
 - (b) Intraday or real-time finality is provided where necessary or there is no need for intraday finality to reduce risks. (Q2)
 - (c) The unilateral revocation of unsettled transfer instructions late in the settlement day is prohibited. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: 1c is not satisfied. (Q3)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) But: 1b and 1c are not satisfied. (Q2, 3)

4. Non-observed
 - (a) 1a is not satisfied. (Q1)

Explanatory note

1. Intraday or real-time settlement of securities transactions is being demanded in a growing number of markets. However, the risks and the resulting demands for intraday finality are not equally pressing in all markets. Where intraday finality is unnecessary to reduce risks, an end-of-day net settlement system with robust risk controls (Recommendation 9) may offer the best combination of safety and efficiency, and therefore may be assessed as having satisfied criterion 1b.
2. In assessing the observance of the recommendation, it is essential to know the time when the transaction is settled, not the time when the transaction is entered into the system.

Recommendation 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.

Key issues

1. A CSD that extends intraday credit to participants should, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. Risk controls should be imposed to control potential losses and liquidity pressures from participants' failures to settle.
2. Overdrafts or debit balances in securities should not be permitted.
3. The probability and potential impact of multiple settlement failures should be evaluated relative to the costs to ensure settlement in such an event.

Key questions

1. Does the CSD ensure that timely settlement can be completed in the event of an inability to settle by the participant with the largest obligation? If so, how? Are the credit exposures of the CSD fully collateralised? If not, what measures are in place to address risks stemming from granting uncollateralised credit? Are limits imposed on credit extensions by the CSD? Does the CSD have sufficient liquidity resources to ensure timely settlement?
2. Does the CSD permit overdraft or debit balances in securities?
3. Does the CSD evaluate the probability of multiple failures? Can settlement be completed in that event? If not, has the CSD evaluated the cost of ensuring settlement in the event of multiple failures?

Assignment of an assessment category

1. Observed
 - (a) The CSD, at a minimum, ensures timely settlement in the event that the participant with the largest payment obligation is unable to settle. Rigorous risk controls, in particular collateral requirements and limits, are imposed to control potential losses and liquidity pressures from participants' failures to settle. (Q1)
 - (b) Overdrafts or debit balances in securities are not permitted. (Q2)
 - (c) The CSD has evaluated the additional costs to participants of greater certainty of settlement against the probability and potential impact of multiple settlement failures. (Q3)

2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) The CSD cannot ensure timely settlement in the event of multiple defaults and it has not evaluated the costs of ensuring settlement in such events. (Q3)
3. Partly observed
 - (a) 1a is partially satisfied but there are some weaknesses in risk controls such as inadequate measures to address risks from uncollateralised credit. (Q1)
 - (b) 1b is satisfied. (Q2)
4. Non-observed
 - (a) Numerous weaknesses in risk controls imply that the CSD does not satisfy 1a. (Q1)
 - (b) Or: 1b is not satisfied. (Q2)
5. Not applicable if the CSD does not extend intraday credit and the CSD does not operate a net settlement system.

Explanatory note

1. If a central bank grants credit in its own currency to CSD participants, such credit extension need not be limited because its liquidity resources are unlimited. The central bank may nonetheless choose to contain its risks vis-à-vis participants by setting limits and fully collateralising its credit exposures.
2. For exposures to be fully collateralised, the CSD must have the capacity to value (mark to market) the securities posted as collateral and apply haircuts to the collateral values.
3. If a CSD extends credit to issuers for corporate actions (for example, advances to issuers to fund dividend or interest payments), the CSD should institute risk controls for these exposures.
4. If a CSD acts as principal in securities lending activities, it must have appropriate risk controls for that activity.
5. The risk control measures referred to in Recommendation 9 also apply to the implicit intraday credit extended to the participants of a net settlement system (DVP models 2 and 3) operated by a CSD, even though the CSD does not itself extend intraday credit to participants.

Recommendation 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.

Key issues

1. The settlement agent should be a central bank, or if it is a private bank, steps should be taken to protect CSD members from potential losses and liquidity pressures that would arise from its failure.
2. The operator of the CSD or regulators or overseers of the CSD should monitor the concentration of exposures and evaluate the financial condition of the settlement banks.
3. The proceeds of securities settlements should be available for recipients to use, at a minimum on the same day, and ideally intraday.
4. The payment system used for interbank transfers among settlement banks should observe the Core Principles for Systemically Important Payment Systems (CPSIPS).

Key questions

1. Is the settlement agent the central bank that issues the currency? If the central bank is settling in a foreign currency, what steps has it taken as settlement agent to ensure that the settlement assets pose little or no credit or liquidity risk? If the central bank is not used, what steps have been taken to protect CSD members from failure of the cash settlement agent? Is the CSD itself organised as a limited purpose bank? Does it strictly limit any risks associated with non-settlement activities?
2. Are settlement banks subject to prudential supervision by government authorities? Who determines which institutions can be used as settlement institutions? What are the criteria? If multiple settlement institutions can be used in principle, how many are used in practice? How concentrated are payment flows? On an average day, what percentage of total payments is credited to accounts at the institution that accounts for the largest share of payment flows? What is the financial condition of that institution (for example, its capital ratios and its credit ratings)? Are the concentration of exposures and the financial condition of the settlement banks monitored and evaluated? If so, by whom?
3. How quickly can recipients use the proceeds of securities settlements? On the same day? Intraday?
4. Does the payment system used for interbank transfers among settlement banks observe CPSIPS?

Assignment of an assessment category

1. Observed
 - (a) If a private bank is used as the settlement agent for any currency, steps are taken to protect CSD members from potential losses and liquidity pressures that would arise from its failure. The settlement agent is the central bank of issue, or if the central bank acting as settlement agent is not the central bank of issue, steps are taken to ensure that the settlement asset poses little or no credit or liquidity risk to CSD members. (Q1)
 - (b) Exposures to settlement banks are not concentrated or the financial condition of settlement banks is monitored and evaluated by regulators and overseers in liaison with banking supervisors. (Q2)
 - (c) The proceeds of securities settlements are available for recipients to use, at a minimum on the same day, and ideally intraday. (Q3)
 - (d) The payment system used for interbank transfers among settlement banks substantially observes the CPSIPS. Any deviations from full observance of those principles do not cause any material credit or liquidity risks for CSD participants. (Q4)
2. Broadly observed
 - (a) 1a, 1b and 1c are satisfied. (Q1, 2, 3)
 - (b) The payment system used for interbank transfers among settlement banks observes most of the CPSIPS. The deviations from full observance of those principles may cause a limited, but not significant, amount of credit or liquidity risk for CSD participants. (Q4)
3. Partly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) 1c is not satisfied. (Q3)
 - (c) Or: the payment system used for interbank transfers among settlement banks does not observe some of the CPSIPS, with the result that there could be potentially significant credit or liquidity risks for CSD participants. (Q4)

4. Non-observed
 - (a) 1a is not satisfied. (Q1)
 - (b) Or: 1b is not satisfied. (Q2)

Explanatory note

1. If the settlement asset is a claim of a central bank other than the central bank of issue, procedures should be in place to strictly limit the risk that a participant's holdings of the foreign currency might not be readily convertible into claims on the central bank of issue.
2. 1b and 1d should be satisfied when there is a tiered settlement system with multiple settlement banks. Assessors should identify which Core Principles are not observed. If not observed, assessors should be convinced that the deviations do not expose market participants to significant credit or liquidity risk.
3. In assessing whether the settlement agent addresses Key Issue 1, the restrictions on the activities of a private entity serving as settlement agent are more important than whether the entity meets the legal definition of a bank. One widely employed method of addressing the issue is for the CSD to organise itself as a limited purpose bank and become the settlement agent by offering cash accounts to its members.

Recommendation 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.

Key issues

1. System operators should identify sources of operational risk and should establish clear policies and procedures to address those risks.
2. There should be appropriate contingency plans for key systems. Contingency plans and systems should be reviewed and tested regularly and after modifications to the system.
3. There should be adequate management controls and sufficient (and sufficiently well qualified) personnel to ensure that procedures are implemented accordingly. Information systems should be subject to periodic independent audit.
4. All key systems should be reliable, secure, and able to handle stress volume.

Key questions

1. Does the system operator have a process for identifying and managing its operational risks?
2. Does the system operator have contingency plans and backup facilities for the failure of key systems, and are these tested and reviewed regularly with participants taking part? Do contingency plans ensure at a minimum that the status of all transactions at the time of the disruption can be identified with certainty in a timely manner? How long does it take to recover operations through backup systems? Do the procedures provide for preservation of all transaction data? How does the system operator ensure the integrity of messages?
3. Are operational reliability issues reviewed regularly by senior management, including review by persons not responsible for the relevant operations? Are periodic external audits of the IT (information technology) system conducted? Is there an independent internal audit function and does it review operational risk controls?

4. How many times during the last year has a key system failed? What is the most common cause of failures? How long did it take to resume processing? How much transaction data, if any, was lost? Does the system operator have capacity plans for key systems and are key systems tested periodically to determine if they can handle stress volume?

Assignment of an assessment category

1. Observed
 - (a) System operators identify sources of operational risk and establish policies related to it. (Q1)
 - (b) All key systems have appropriate contingency plans and backup facilities, and key systems are reviewed regularly. (Q2)
 - (c) There are adequate management controls and sufficient personnel to ensure that procedures are implemented accordingly and information systems are subject to periodic independent audit. (Q3)
 - (d) There are few system failures, and all key systems are able to handle stress volume. (Q4)
2. Broadly observed
 - (a) 1a, 1b and 1c are satisfied. (Q1, 2, 3)
 - (b) But: more than a few system failures occur, though recovery of operations is adequate. (Q4)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) But: occasional system failures occur and difficulties in recovery of operations indicate that contingency plans or backup facilities need to be upgraded. (Q2, 4)
 - (c) Or: 1c is not satisfied. (Q3)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)
 - (b) Or: there are frequent system failures, and contingency plans and backup facilities are not appropriate. (Q2, 4)

Explanatory note

1. Principle VII of the *Core Principles for Systemically Important Payment Systems* (pages 10 and 39-43 of the CPSIPS report) provides additional details on operational issues, many of which are relevant to SSSs.
2. System operators who outsource operations should ensure that those operations meet the same standards as if they were provided directly.

Recommendation 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.

Key issues

1. Entities holding securities in custody should employ procedures to ensure customer securities are protected, particularly against claims of their creditors.
2. Entities holding securities in custody should regularly reconcile their records to ensure that customer claims can be satisfied and should be subject to mandatory audits.

3. Entities holding securities in custody should be supervised or regulated.

Key questions

1. What arrangements are used to protect customers' securities from theft, loss or misuse and to ensure that they will not become subject to claims of the custodian's creditors (for example, are segregation, insurance, or compensation schemes used)? Are those arrangements based upon specific laws and regulations? In the event of the custodian's insolvency, do those arrangements enable a customer's positions to be moved by a receiver to a solvent intermediary?
2. How often do the entities holding securities in custody reconcile their records? Are the entities holding securities in custody subject to mandatory internal or external audit, or both, to determine if there are sufficient securities to satisfy customer claims?
3. Are the entities holding securities in custody subject to prudential supervision or regulation? Do regulatory reviews examine the procedures and internal controls used in the safekeeping of securities?

Assignment of an assessment category

1. Observed
 - (a) Segregation or other arrangements protect customers' securities; these arrangements are supported by the legal framework. (Q1)
 - (b) The entities holding securities in custody reconcile their records regularly and are subject to mandatory audits. (Q2)
 - (c) All the entities holding securities in custody are supervised or regulated. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) Entities holding 95% or more of securities (by value) in custody are supervised or regulated. (Q3)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) Entities holding securities in custody reconcile their records, but not as frequently as trading volume demands. (Q2)
 - (c) Or: entities holding 90% or more of securities (by value) in custody are supervised or regulated. (Q3)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)
 - (b) Or: entities holding securities in custody do not reconcile their records. (Q2)
 - (c) Or: entities holding more than 10% of securities (by value) are not supervised or regulated. (Q3)

Recommendation 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.

Key issues

1. Governance arrangements should be clearly specified and transparent.
2. Objectives and major decisions should be disclosed to owners, users and public authorities.

3. Management should have the incentives and skills needed to achieve objectives and is fully accountable for its performance.
4. The board should contain suitable expertise and take account of all relevant interests.

Key questions

1. What are the governance arrangements of the CSD or CCP? What information is publicly available regarding the system, its ownership and its board and management structure, and the process by which major decisions are taken and management made accountable?
2. Are the system's public interest, financial and other objectives clearly articulated and public? What are they? Do the system's objectives reflect the needs of users as well as owners? How is the public interest taken into account? Can the system's participants or the public influence the system's decision-making process? How are major decisions communicated to owners and users?
3. What steps are taken to ensure that management has the incentives and skills needed to achieve the system's objectives and is accountable for its performance?
4. How is the composition of the board determined? What steps are taken to ensure that board members have the necessary skills, and represent or take into account in their deliberations the full range of shareholder and user interests as well as the public interest?

Assignment of an assessment category

1. Observed
 - (a) Governance arrangements are clearly specified and information about them is publicly available. (Q1)
 - (b) Objectives and major decisions are disclosed to owners, users and public authorities. (Q2)
 - (c) Management has the incentives and skills needed to achieve objectives and is fully accountable for its performance. (Q3)
 - (d) The board contains suitable expertise and takes account of all relevant interests. (Q4)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: either 1c or 1d is not satisfied. (Q3, 4)
3. Partly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: neither 1c nor 1d is satisfied. (Q3, 4)
4. Non-observed
 - (a) 1a is not satisfied or 1b is not satisfied. (Q1, 2)

Explanatory note

1. If the CSD or CCP is wholly owned by another entity, the governance arrangements of that entity should also be examined to see that it does not have adverse effects on the CSD's or CCP's observance of this recommendation.
2. Governance arrangements are likely to be effective when decision-takers have the skills, information and incentives to take decisions which promote the objectives of owners and users and fulfil public interest requirements, but these aspects are difficult to observe directly. The assessment categories are therefore based on indirect, but more measurable, aspects of governance such as whether the decision-making processes are transparent. If, however, there was clear evidence of the lack of effectiveness of the governance

arrangements, an assessor could take that into account in assigning an assessment category provided that the evidence was set out in the explanation of the assessment.

Recommendation 14: Access

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

Key issues

1. Criteria should be objective, clearly stated and publicly disclosed.
2. Criteria that limit access on grounds other than risks to the CSD or CCP should be avoided.
3. Procedures facilitating the orderly exit of participants that no longer meet membership criteria should be clearly stated and publicly disclosed.

Key questions

1. Are access rules/criteria objective and clearly disclosed to all potential applicants?
2. Are the same rules applied regardless of the identity, type and location of the applicant? If not, what variations apply and why? Can differential restrictions on access to the system be justified in terms of the need to limit risks to the system operator or to other users?
3. Under what conditions can participants terminate their membership? What arrangements does the system have in place to facilitate the exit of members who no longer meet the participation requirements? Are these arrangements publicly disclosed?

Assignment of an assessment category

1. Observed
 - (a) Criteria are objective, clearly stated and publicly disclosed. (Q1)
 - (b) Criteria that limit access on grounds other than risks to the CSD or CCP are avoided. (Q2)
 - (c) Procedures facilitating the orderly exit of participants are clearly stated and publicly disclosed. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: 1c is not satisfied. (Q3)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) But: some non-risk-related criteria are employed. (Q2)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)
 - (b) Or: non-risk-related criteria are employed that affect a broad set of potential applicants. (Q2)

Recommendation 15: Efficiency

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

Key issues

1. The system operator or other relevant party should have in place the mechanisms to review regularly costs and pricing of the securities settlement system.
2. The system operator or other relevant party should have in place the mechanisms to review regularly the service levels and operational reliability of the securities settlement system.

Key questions

1. Does the system operator have in place procedures to control costs (for example, by benchmarking its costs and charges against other systems that provide a similar service and to analyse the reasons for significant differences)? Does the system operator have in place procedures to regularly review its pricing levels against its costs of operation?
2. Does the system operator regularly review its service levels, including by regularly surveying its users? Does the system operator have in place procedures to regularly review operational reliability, including its capacity levels against projected demand?

Assignment of an assessment category

1. Observed
 - (a) The system operator or other relevant party has in place various procedures to review pricing and costs, and do so regularly. (Q1)
 - (b) And the system operator regularly reviews its operational reliability and service levels, including by regularly surveying its users. (Q2)
2. Broadly observed
 - (a) Either 1a or 1b is satisfied. (Q1, 2)
3. Partly observed
 - (a) The system operators have procedures to review capacity, pricing, costs and services but do not *regularly* review them. (Q1, 2)
4. Non-observed
 - (a) The system operators do not have in place procedures to review capacity, pricing and costs, nor do they have procedures to review service levels. (Q1, 2)

Explanatory note

1. In assessing the efficiency of settlement systems, the needs of users and costs imposed on them must be carefully balanced with the requirement that the system meets appropriate standards of safety and security.
2. Efficiency in systems is very difficult to assess. Assessors should talk to as many market participants as possible about their views on the system's efficiency and on whether the system meets the needs of its users. It is also important to determine whether the pricing structure allows the system to cover fixed and variable costs.

Recommendation 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.

Key issues

1. International communication procedures and standards relating to securities messages, securities identification processes and counterparty identification should be applied for cross-border transactions.

Key questions

1. Does the securities settlement system use international communication procedures or standards or is it able to easily convert domestic procedures and standards into the relevant international communication procedures and standards for cross-border securities transactions?

Assignment of an assessment category

1. Observed
 - (a) The system uses international communication procedures or domestic ones that can be easily converted into the relevant international communication procedures and standards for cross-border transactions. (Q1)
2. Broadly observed
 - (a) The system uses communication procedures that can be converted into the relevant international communication procedures and standards with some difficulty. (Q1)
3. Partly observed
 - (a) The system uses communication procedures that can be converted into the relevant international communication procedures and standards with considerable difficulty. (Q1)
4. Non-observed
 - (a) The system uses communication procedures that cannot be converted into the relevant international communication procedures and standards. (Q1)

Explanatory note

1. Countries establishing or fundamentally reforming their securities settlement system should consider the benefits of adopting international procedures and standards from the outset in the design of their domestic systems.

Recommendation 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.

Key issues

1. Market participants should have the information necessary to evaluate the risks and costs of participating in the system.
2. The CPSS/IOSCO Disclosure Framework or the answers to the key questions should be completed and disclosed.
3. Information should be accessible, for example through the internet. Information should be available in a language commonly used in financial markets as well as the domestic language.
4. The accuracy and completeness of disclosures should be reviewed periodically by the CSD or CCP.

Key questions

1. Does the CSD or CCP make clear disclosures to market participants about its rules, regulations, relevant laws, governance procedures, risks, steps taken to mitigate risks, the rights and obligations of participants and the cost of participating in the system?
2. Has the system completed and disclosed the questionnaire set out in the CPSS/IOSCO disclosure framework or the answers to the key questions set out in this assessment methodology? Have the authorities responsible for regulation and oversight publicly

disclosed their answers to the key questions regarding implementation of the recommendations?

3. How is this information made available? In what language or languages? In what form?
4. What steps are taken by the CSD or CCP to ensure that the disclosures are complete and accurate? Are there regular reviews to ensure they remain current?

Assignment of an assessment category

1. Observed
 - (a) Market participants are provided with a full and clear description of their rights and obligations, the cost of participating in the system, the rules, regulations and laws governing the system, its governance procedures, any risks arising either to participants or to the operator, and any steps taken to mitigate those risks. (Q1)
 - (b) The CPSS/IOSCO Disclosure Framework or the answers to the key questions have been completed and disclosed. (Q2)
 - (c) Information is easily accessible, for example through the internet. Information is available in a language commonly used in financial markets as well as the domestic language. (Q3)
 - (d) The accuracy and completeness of disclosures are regularly reviewed by the CSD or CCP. (Q4)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) But: 1c or 1d is not satisfied. (Q3, 4)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) But: 1b is not satisfied. (Q2)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)

Recommendation 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.

Key issues

1. The system should be subject to effective regulation and oversight.
2. The responsibilities as well as roles and major policies of the securities regulator and the central bank should be clearly defined and publicly disclosed.
3. The securities regulator and the central bank should have the ability and the resources to carry out regulation and oversight policies effectively.
4. Securities regulators and central banks should cooperate with each other and with other relevant authorities both within and outside the country.

Key questions

1. How is the system regulated/overseen? Describe the laws that authorise and govern the system's operation, the applicable regulatory bodies and their respective authority concerning the system's operation.

2. Are the responsibilities of the securities regulator, central bank and, where relevant, banking supervisor clearly defined with respect to securities settlement systems? Are their roles and major policies disclosed publicly? Are they written in plain language so that they can be fully understood by designers, operators and participants of securities settlement systems, and other relevant parties?
3. What is the regulatory and oversight framework based on? Is it a statute-based approach where specific tasks, responsibilities and powers are assigned to specific public authorities? Or a non-statute-based approach? Do the securities regulator and the central bank have experienced staff, proper resources and funding to carry out regulatory and oversight functions effectively?
4. Is there a framework for cooperation between the securities regulator and the central bank, such as for the exchange of information and views on securities settlement systems? Is there such a framework for cooperation with relevant authorities both within and outside the country?

Assignment of an assessment category

1. Observed
 - (a) The system is subject to effective regulation and oversight. (Q1)
 - (b) The responsibilities as well as roles and major policies of the securities regulator and the central bank are clearly defined and publicly disclosed. (Q2)
 - (c) The securities regulator and the central bank have the ability and the resources to carry out regulation and oversight policies effectively. (Q3)
 - (d) Securities regulators and central banks cooperate with each other and with other relevant authorities. (Q4)
2. Broadly observed
 - (a) 1a, 1b and 1c satisfied. (Q1, 2, 3)
 - (b) But: the framework for cooperation between the securities regulator and the central bank and with other relevant authorities is not in place or does not work well. (Q4)
3. Partly observed
 - (a) 1a is satisfied. (Q1)
 - (b) 1b or 1c is satisfied. (Q2, 3)
4. Non-observed
 - (a) 1a is not satisfied. (Q1)
 - (b) Or: 1b and 1c are not satisfied. (Q2, 3)

Explanatory note

1. Although the discussion of key issues and key questions makes reference to central banks and securities regulators, where relevant, banking supervisors would also be within the scope of this recommendation.
2. Regulators or overseers can consider a variety of approaches to achieve cooperation such as information sharing arrangements, coordination of regulatory and oversight responsibilities for specific matters, and other cooperation arrangements.
3. The central bank should ensure that the systems it operates observe the recommendations. (See Responsibility B in the CPSIPS report.)

Recommendation 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.

Key issues

1. CSDs should design links to ensure that settlement risks are minimised or contained. A CSD should evaluate the financial integrity and operational reliability of any CSD with which it intends to establish a link.
2. DVP should be achieved and provisional transfers across the link should be prohibited, or, at a minimum, their retransfer prohibited, until the first transfer is final.
3. Any credit extensions between CSDs should be fully secured and subject to limits. Liquidity management arrangements should be implemented to address operational inefficiencies and potential defaults.

Key questions

1. What kinds of links are in operation (see explanatory note)? Has the CSD done a risk analysis of the design of the link and the financial and operational integrity of the linked CSD?
2. How is DVP achieved? Does the link permit provisional transfers of securities across the link? If so, is the retransfer of these securities prohibited until the first transfer is final?
3. If the CSD extends credit to a linked CSD, are credit extensions to the linked CSD fully secured and subject to limits? Are risk controls and liquidity resources adequate to address liquidity risks posed by the link?

Assignment of an assessment category

1. Observed
 - (a) A risk analysis of the design of the link is undertaken. (Q1)
 - (b) The link achieves DVP and provisional transfers across the link are prohibited, or, at a minimum, their retransfer is prohibited, until the first transfer is final. (Q2)
 - (c) Credit extensions between CSDs are fully secured and adequate liquidity management arrangements are implemented. (Q3)
2. Broadly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) Credit extensions to the linked CSD are fully secured but liquidity management arrangements are not adequate. (Q3)
3. Partly observed
 - (a) 1a and 1b are satisfied. (Q1, 2)
 - (b) 1c is not satisfied. (Q3)
4. Non-observed
 - (a) 1a is not satisfied or 1b is not satisfied. (Q1, 2)
5. Not applicable

Explanatory note

1. Legal risk and custody risk of cross-border links are covered in Recommendation 1 and Recommendation 12, respectively. The rules of each CSD and the terms of any associated contracts should be supported by the legal framework, including insolvency law, in each jurisdiction in which the linked CSDs operate. Issues associated with the protection of customer securities should be addressed in the design and operation of links to settle cross-border links, particularly the need to reconcile holdings to determine that they are accurate and current.
2. CSDs may perform different sets of functions, including the provision of depository, credit, securities lending, collateral management, custodian and settlement services. Links may

also provide these functions, and the choice of functions determines the design of the link, as does the structure of the CSDs themselves and the legal framework applicable in the respective jurisdictions.

3. Issues raised in cross-border links may also be relevant for some linked systems within a jurisdiction.
4. One can distinguish among different types of links:
 - (a) Direct links - Direct links occur where a CSD opens an account with another CSD. The report distinguishes links that are reciprocal (permit participants in either system to settle in the other system) from links that permit settlement only in one direction.
 - (b) Indirect links - Indirect links are established when a CSD uses the securities held in another CSD via an intermediary (a custodian bank, for example) that has an account in that CSD. This intermediary acts as depository on behalf of the first CSD.
 - (c) Relayed links - Relayed links are agreements for the transfer of securities involving three CSDs - the investor CSD, the issuer CSD and the middle CSD. Transactions take place between participants in the issuer CSD and in the investor CSD. Although the issuer and the investor CSD are not directly linked (that is, they do not hold accounts with each other), a third CSD, the middle CSD, acts as an intermediary for the transaction between them.

All those links may allow for both DVP and free-of-payment settlement. Links are further distinguished on a basis of settlement of the cash side of transactions.

5. This recommendation does not apply to links that are used solely to settle trades between participants in the same CSD, because risks of such trades are covered in other recommendations.

4. Guidance on the development of an action plan¹

4.1 *Self-assessment.* As part of their responsibility for regulation and oversight, central banks, securities regulators and, where relevant, banking supervisors should promote implementation of the recommendations for SSSs by conducting self-assessments. Following completion of a self-assessment, authorities and SSS operators will need to develop plans to remedy deficiencies that have been identified. Whether to develop a formal action plan will depend upon the severity of the deficiencies and the extent to which remedial actions are already under way.

4.2 *Scope of reform.* As the RSSS make clear, many of the recommendations are directed at the private sector operators of the system, and these entities have primary responsibility to ensure that the recommendations relevant to their operations are implemented. In many cases, the roles of the authorities will be limited to monitoring progress, helping establish goals and time lines, and facilitating progress through changes in their own policies. In some cases, however, national authorities may need to play a more active role, working with operators and participants of the SSS to set priorities and to effect improvements. This may be particularly important when major components of the system are being reassessed, for example when establishment of a CCP is being considered, or when significant changes in the legal structure are needed.

4.3 In such circumstances, authorities may need to develop a more formal action plan to enable all of the relevant parties to coordinate their actions, to ensure that implementation of various changes is staged appropriately, and to ensure that competitive concerns among private sector participants do not slow progress. A formal action plan may be especially necessary when changes to the payment system are needed to enable or facilitate implementation of recommendations related to the SSS. The

¹ This section draws on the assessment experience of the IFIs and of Task Force members involved in assessment programmes. It also draws on Section 10 of the CPSIPS report.

plan may also involve coordination with authorities in other jurisdictions when cross-border issues are addressed.

4.4 The type of the action plan prepared will depend on the scope of reform needed. In some instances, changes to the system will be incremental, and the scope of the plan will be more focused and limited. In others, fundamental changes will be deemed desirable, perhaps involving building an entirely new SSS. Where fundamental changes are being implemented, the action plan will of necessity be more extensive and formal to build the case for desired actions, to present the actions to be taken, and to ensure proper coordination of actions. Some jurisdictions undertaking fundamental changes may find it helpful to establish a coordinating body composed of the relevant regulatory and oversight bodies as well as system operators and market participants to prepare the action plan and to monitor subsequent progress.

4.5 *Implementation plan: priorities.* There is no simple recipe for developing an action plan, but some basic steps may be useful to consider. Authorities should identify the areas in which less-than-full observance of recommendations leads to major risks within the SSS. The CPSS and IOSCO Technical Committee have not assigned degrees of importance to the recommendations because the recommendations as a group contribute to the creation of a safe and efficient SSS. However, in devising an action plan, authorities, system operators and market participants will inevitably be forced to come to an understanding on priorities based upon their judgments as to the deficiencies that pose the greatest risks or opportunity costs for the system. In most instances, the priorities are likely to be the risk controls for the CSDs and CCPs that are central to many SSSs, achievement of DVP, and a sound legal foundation.

4.6 *Implementation plan: actions needed.* Having identified priority areas, authorities should then determine the types of actions needed in each area. Many of these actions will fall into the categories of legislation, regulatory change, process or contract changes by private sector entities, or shifts in supervisory policies. In each case, the party best positioned to initiate that action should be identified. Generally, public sector entities will need to take the lead on legislation, regulatory and supervisory changes. Throughout this process, the authorities will need to consult closely with SSS operators and market participants.

4.7 *Implementation plan: timing.* A reasonable time frame in which an action could be accomplished should also be specified. Some steps to remedy deficiencies in SSSs can be taken more quickly than others. Legislative change is often a lengthy and difficult process. When changes to the legal framework are required, the process of initiating legislation should begin as soon as possible. Other changes to the SSS, for example decisions about the purchase of new technology and its installation and testing, can also be a lengthy process. Authorities may see value in intermediate steps that move a system part of the way towards the goal of observance by mitigating risks that have been identified in the system until full observance can be accomplished. For instance, while legislative changes are pending, progress towards the desired objectives may be achieved through agreements under contract law if contract law would support such agreements. Because some actions may take years to implement, the action plan should distinguish between final and intermediate objectives in terms of observance of the recommendations. The experience of other countries that have made similar types of reforms may also be useful in helping determine reasonable time frames and how to sequence projects.

4.8 *Implementation plan: cost considerations.* Major reforms of SSSs, including changes in the infrastructure, may require significant funding. The RSSS report notes in several recommendations the need to evaluate costs and benefits, and it explicitly recognises that benefits may not exceed costs for implementing some features in the SSS. In that event, the RSSS suggest other risk mitigation techniques be explored. It is important that the authorities, system operators, and market participants work together to credibly estimate the range for the total cost of the reform. The experiences of other jurisdictions may be informative in this process. Costs are inevitably uncertain and estimates will need to be revised as the action plan is implemented. The estimates should include at least the explicit and implicit costs of implementation (equipment purchase, software, etc), staffing (including training), monitoring of the reform, and hiring of consultants.

4.9 *Implementation plan: infrastructure decisions.* If the action plan relates to the creation or complete restructuring of the SSS, it will need to include plans for the infrastructure of the SSS. Decisions about the choice of infrastructure will probably depend on factors such as: the size and role of the financial markets; the types of technology available and their costs; the infrastructure of the

payment system and the safety of the banking system; and the country's infrastructure for basic services such as electric power and telecommunications.

4.10 The size and role of the financial markets is one of the main factors determining the type of infrastructure best suited for a country. SSS reforms can be helped by new technology, but there should be no presumption that the most sophisticated and expensive technology is necessarily the most appropriate solution. Technology should always support business needs of the potential users of the system and broader public policy needs such as the conduct of monetary policy.

4.11 An early decision will probably be whether to develop the infrastructure from the ground up, for instance by means of cooperation between the SSS operators and an IT service provider, or to purchase a turnkey infrastructure. This decision will depend upon the relevant expertise in a country, and the appropriateness of the alternatives. While developing a completely new infrastructure could prove to be costly, a turnkey infrastructure may not include some features that participants feel to be very important in their particular environment. However, if one opts for a turnkey infrastructure, customising portions could also complicate future upgrading of the system. In any case, because most parts of the SSS are interdependent, SSS operators and market participants will need to coordinate their efforts.

4.12 The action plan for the SSS should also take into consideration the infrastructure of the payment and banking systems. Factors external to the SSS such as the type of payment systems available to settle the cash side of securities transactions will affect decisions on how to achieve DVP, for example. Similarly, the banking system presents its own set of risks for the SSS that must be taken into account in planning decisions related to the cash settlement asset. In some instances, jurisdictions may opt to reform both the securities settlement system and the payment system jointly in order to limit the instances in which features of one system constrain choices in the other.

4.13 The country's infrastructure must also be compatible with and support the choice of SSS infrastructure. If basic services such as telecommunications and electrical power are not reliable, for example, the SSS may be little used or embody large operational risk.

4.14 *Implementation plan: expertise.* Countries that are undertaking major revisions in their SSS may also have limited expertise in some of the areas needing change. Part of the action plan may thus entail developing or acquiring expertise in SSSs. The knowledge base can be increased through review of the various reports that have been published by the CPSS and IOSCO, as well as other public and private institutions and organisations. Participation in international seminars and workshops and contacts with foreign authorities that have experience in developing SSSs may also be part of the action plan.²

² In several cases, countries reforming their securities settlement system have received technical assistance from the CPSS, IOSCO or the IFIs.

Annex 1

Template for the self-assessment report on the observance of the recommendations for securities settlement systems

(Securities covered by the assessment)

I. Introduction

General

1. Identify the systems being assessed, the entity or entities conducting the self-assessment, and the objective and context of the assessment.

Scope of the assessment

2. Identify the securities that are covered by the assessment and the institutions that perform the critical functions in the system for these securities.

3. Identify any significant entity or entities in the jurisdiction that provide clearance and settlement services associated with these securities that are not covered by the assessment. State why that entity or those entities was/were excluded from the scope of the assessment.

Institutional and market structure

4. Provide a general description of the securities markets and the structure of trade execution, clearing and settlement of securities transactions. The description should include sufficient data to understand clearly the scale and scope of the system's operations, including data on the value of the securities held in the system and the average and peak values of securities settled within the system.

Description of regulatory structure and practices

5. Provide a description of the regulatory framework relating to SSSs in the jurisdiction and a brief description of the oversight, regulatory and supervisory bodies with competence over SSSs.

Information and methodology used for assessment

6. Identify the main sources of information used in making the assessment, eg written documentation (other self-assessments, third-party assessments, surveys, questionnaires, reports, studies, and other public or non-public documents, including relevant laws, regulations, or regulatory or industry guidance) or oral discussions with oversight, regulatory or supervisory bodies (eg the central bank, securities regulator, banking supervisor or other domestic authorities) and relevant industry associations (eg central securities depository, central counterparty, stock exchange, custodian, securities broker, or end user associations).

7. Discuss the process followed in conducting the assessment. Mention any practical difficulties in applying the assessment methodology such as lack of information or cooperation and any factors limiting the assessment process or its scope.

II. Assessment of observance

Executive summary of the recommendation by recommendation assessment

8. Provide an executive summary of the detailed assessment report reflected in Tables 2-3 below. In this executive summary:

- summarise the principal conclusions of the assessment regarding the major topics covered by the recommendations, ie legal risk, pre-settlement risk, settlement risk, operational risk, custody risk, and other issues;
- summarise any actions proposed or ongoing in the assessed jurisdiction to achieve full observance of the recommendations and the manner in which the level of observance would be improved if those actions were completed; and
- summarise the steps recommended by the assessor to achieve full observance of the recommendations and the manner in which the level of observance would be improved if those steps were completed.

9. Conclude the executive summary with a table collating the results of the recommendation by recommendation assessment of observance by reference to the assessment categories:

Table 1

Collation of assessment results by assessment category

Assessment category	Recommendations
Observed	eg Recommendations 1, 3, 6, 8
Broadly observed	
Partly observed	
Non-observed	
Not applicable	

Recommendation by recommendation assessment of observance

10. Provide a table with a detailed recommendation by recommendation assessment of the observance of each of the recommendations. The detailed assessment of each recommendation should include three parts:

- *Key questions.* In this part, provide answers to the key questions relating to the recommendation as set out in Section 3. Include other factual information relevant to the assignment of assessment categories for that recommendation. Responses should reflect the actual practices followed by SSS system operators and participants and the competent domestic authorities in their oversight, regulation, or supervision of SSSs or their participants. The answers to the key questions should indicate how the assessor arrived at the response to the question. Accordingly, “yes” or “no” responses to the key questions will rarely (if ever) be sufficient. Additionally, the information or material used to support the answer should be described in reasonable detail so that a party not involved in the assessment could understand the response.
- *Assessment.* In this part, assign each recommendation to one of five assessment categories: *Observed*, *Broadly observed*, *Partly observed*, *Non-observed* or *Not applicable*. All explanations relating to the assignment of the assessment category should appear in this part. Guidance on the assignment of these assessment categories has been provided in

Section 3, where assessment categories have been linked to the answers to the key questions. The guidance also includes explanatory notes to clarify certain issues that seem likely to arise in the course of an assessment. The assignment of an assessment category with respect to a recommendation should be based on the current situation existing in the jurisdiction without regard to any proposed or ongoing actions.

- *Comments.* In this part, describe the actions that system operators, participants, or domestic authorities have proposed or that are ongoing in the jurisdiction to improve observance of the recommendations and the proposed timetable for their completion. Explain how the proposed action would lead to an improvement in the observance of the recommendation and whether completion of the proposed action would prompt the assignment of a higher assessment category relating to the recommendation.

Table 2

Recommendation by recommendation assessment of observance

Legal risk

Recommendation 1

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

Answers to key questions	
Assessment	
Comments	

Pre-settlement risk

Recommendation 2

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.

Answers to key questions	
Assessment	
Comments	

Recommendation 3

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.

Answers to key questions	
Assessment	
Comments	

Table 2 (continued)

Recommendation by recommendation assessment of observance

Recommendation 4

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.

Answers to key questions	
Assessment	
Comments	

Recommendation 5

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.

Answers to key questions	
Assessment	
Comments	

Settlement risk

Recommendation 6

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

Answers to key questions	
Assessment	
Comments	

Recommendation 7

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

Answers to key questions	
Assessment	
Comments	

Recommendation 8

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.

Answers to key questions	
Assessment	
Comments	

Table 2 (continued)

Recommendation by recommendation assessment of observance**Recommendation 9**

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.

Answers to key questions	
Assessment	
Comments	

Recommendation 10

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.

Answers to key questions	
Assessment	
Comments	

Operational risk**Recommendation 11**

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.

Answers to key questions	
Assessment	
Comments	

Custody risk**Recommendation 12**

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.

Answers to key questions	
Assessment	
Comments	

Table 2 (continued)

Recommendation by recommendation assessment of observance**Recommendation 13**

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

Answers to key questions	
Assessment	
Comments	

Other issues**Recommendation 14**

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

Answers to key questions	
Assessment	
Comments	

Recommendation 15

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

Answers to key questions	
Assessment	
Comments	

Recommendation 16

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

Answers to key questions	
Assessment	
Comments	

Recommendation 17

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.

Answers to key questions	
Assessment	
Comments	

Table 2 (continued)

Recommendation by recommendation assessment of observance

Recommendation 18

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.

Answers to key questions	
Assessment	
Comments	

Recommendation 19

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.

Answers to key questions	
Assessment	
Comments	

Actions to achieve observance

11. List in Table 3 actions the assessor recommends to achieve full observance of the recommendations. If a system has plans for improvements under way and implementation of those plans would be sufficient to achieve observance, that should be noted (although those plans will not be reflected in the current assignment of ratings). Any specific obstacles to observance should be noted. Explain the manner in which the recommended action would lead to an improvement in the level of observance of the recommendation. Identify the domestic institution competent to take each recommended action. Only list recommendations for which specific steps are being recommended.

12. In some instances, the self-assessment may reveal that major changes to systems are necessary, and preparation of a formal action plan that goes beyond the discussion in this part of the self-assessment may be desirable. Such a plan can more formally lay out the priorities for changes to the system and the ways in which steps to remedy deficiencies should be sequenced. A more detailed discussion of preparation of a formal action plan can be found in Section 4.

Table 3

Actions to achieve observance

Reference recommendation	Actions to achieve observance
eg Recommendation 1	

Annex 2

Template for disclosure based on Key Questions

1. Market participants should be provided with sufficient information to identify and evaluate the risks and costs to which they are exposed as a result of participation in the clearing, settlement and custodial infrastructure of the securities markets (see Recommendation 17). Completion of the answers to the key questions in Section 3 will serve not only as a basis for assessment of implementation of the recommendations but as a basis for public disclosure to provide them with the complete and accurate information they need.
2. In 1997, the CPSS and IOSCO published *Disclosure Framework for Securities Settlement Systems*. Around 70 systems in more than 40 countries have responded to the Disclosure Framework and the BIS website has served as the clearing house for the public disclosure of the responses (www.bis.org/publ/cpss20resp.htm). The key questions in Section 3³ address all of the important issues covered by the Disclosure Framework. If operators of the clearing, settlement and custodian infrastructure, such as CSDs and CCPs, publicly disclose the answers to the key questions, they need not complete the Disclosure Framework.
3. In addition to operators of that infrastructure, national authorities which conduct a self-assessment and complete an assessment report as set out in Annex1 may choose to publicly disclose their answers to the key questions. While authorities might feel reluctant to publish the results of their self-assessment of the extent to which the recommendations have been implemented, they could have good reason to publish their answers to the key questions. For example, authorities might think it appropriate to disclose their answers if they believe the answers to the key questions by system operators (or the information in the Disclosure Framework) are not totally accurate, complete or correct. It is useful to provide market participants with fair and objective information that would build confidence in the safety and efficiency of the system. It can also impose effective discipline on operators of the infrastructure, encouraging them to improve transparency.
4. Whoever completes and discloses the answers to the key questions, information should be complete, accurate and regularly reviewed. It should be readily accessible to market participants, in particular through the internet. It is strongly encouraged that the answers be posted on the respective websites of responding institutions in order that information can be updated easily and in a timely manner. The BIS is prepared to be the clearing house for such disclosures by providing links to these websites.
5. Below is a template for disclosure based on the key questions. In preparing the answers, the following should be noted.
 - (a) Identify the scope of the assessment (the range of securities that are covered in the answers). If prepared by an operator of the system, identify the functions in the settlement process performed by the operator.
 - (b) Indicate the date when the answers are completed and make sure that the information provided in the answers is current when completed.
 - (c) Answer all the questions in the order presented and restate the questions themselves when providing the answers. If a question is not applicable, indicate that this is the case and explain why it is not applicable. If necessary, cross-reference information given elsewhere if this is helpful in avoiding duplication.
 - (d) The glossary included in the November 2001 report defines the meaning of terms as used in the questions. Make sure that the use of terminology in the answers is consistent with these definitions. If a term used in the answers is system-specific or used in a way that could be misunderstood, provide a clear explanation of how the term is used.

³ The November 2001 report included key questions pertaining to each of the recommendations (Section 5) as a first step towards development of an assessment methodology. In this regard, the key questions have been amended fairly extensively (see 1.4 in this report). The amended key questions should be used as a basis for public disclosure.

- (e) Include charts and diagrams wherever they would be helpful. All charts and diagrams should be accompanied by a description that enables them to be understood.
- (f) In cases where multiple responses to a question are possible, for example if the SSS offers multiple approaches to settlement processing, provide a response covering each of the alternatives and indicate the extent to which each alternative response is relevant.
- (g) Do not simply refer to or quote rules or regulations as a response to the questions. As a supplement to a response, however, feel free to indicate where relevant rules or regulations may be found.
- (h) Where questions ask about the timing of events, provide responses relative to the local time zone(s) where the system is located.
- (i) Update the answers as soon as possible after significant changes occur so that the information provided continues to be complete and accurate. Review the answers periodically (at least annually) so that they do not fail to be updated.
- (j) Indicate contact details in case market participants or other relevant parties have enquiries concerning the answers.
- (k) When the answers are posted on the website of the responding institution, inform the BIS of the website address by sending an email to cpss@bis.org. The BIS will provide a link to the website. If the website address changes, the BIS should be notified.

**Answers to the Key Questions
for CPSS-IOSCO Recommendations for Securities Settlement Systems**

[Jurisdiction]

[Securities]

Responding institution: [name] as [national authority / operator of infrastructure]

Function(s): [regulator / central bank / CSD / CCP / confirmation service provider / ...]

The information provided in the answers is accurate as of [date].

This response can be found at [website address].

Any enquiries should be sent to [contact details].

Recommendation 1: Legal framework

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

Key Questions

- 1 Are the laws, regulations, rules and procedures, and contractual provisions governing securities settlement arrangements public and readily accessible to system participants?

[Provide answers here]

- 2 (i) Does the legal framework demonstrate a high degree of legal assurance that:
- (a) transactions are enforceable?
 - (b) customers' assets are adequately protected (particularly against the insolvency of custodians and intermediaries)?

(a) ...

[Provide answers here]

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:
:

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