

**PAYMENT SYSTEMS AND STORED VALUE FACILITIES
ORDINANCE**

**Application of Principles for Financial Market Infrastructures
to Designated Clearing and Settlement Systems**

A Guideline issued by the Monetary Authority
under Section 54(1)(a)

Purpose

To adopt the relevant requirements as specified in the Principles for Financial Market Infrastructures that the Monetary Authority (“MA”) intends to follow in his oversight of the clearing and settlement systems (“CSSs”) designated under the Payment Systems and Stored Value Facilities Ordinance (“PSSVFO”).

Classification

A statutory guideline issued by the MA under the PSSVFO, section 54(1)(a)

Previous guidelines superseded

This is a new guideline.

Application

To all designated CSSs under the PSSVFO.

Date

20 May 2016

STRUCTURE

INTRODUCTION

1. Purpose
2. Background
3. Terminology

POLICY FRAMEWORK

4. International standards
5. Application of the PFMI to designated CSSs owned and operated by the HKMA
6. Application of the PFMI to designated CSSs
 - 6.1 Legal basis
 - 6.2 Governance
 - 6.3 Framework for the comprehensive management of risks
 - 6.4 Credit risk
 - 6.5 Collateral
 - 6.6 Liquidity risk
 - 6.7 Settlement finality
 - 6.8 Money settlements
 - 6.9 Physical deliveries
 - 6.10 Central securities depositories
 - 6.11 Exchange-of-value settlement systems
 - 6.12 Participant-default rules and procedures
 - 6.13 General business risk
 - 6.14 Custody and investment risks
 - 6.15 Operational risk
 - 6.16 Access and participation requirements
 - 6.17 Tiered participation arrangements
 - 6.18 FMI links
 - 6.19 Efficiency and effectiveness
 - 6.20 Communication procedures and standards
 - 6.21 Disclosure of rules, key procedures, and market data

ANNEX

Matrix of applicability of PFMI to specific types of designated CSSs under the PSSVFO

INTRODUCTION

1 Purpose

- 1.1 The purpose of this Guideline is to adopt the relevant requirements as specified in the Principles for Financial Market Infrastructures that the MA¹ intends to follow in his oversight of the designated CSSs under the PSSVFO.

2 Background

- 2.1 The Committee on Payments and Market Infrastructures of the Bank for International Settlements (“CPMI”) and the International Organization of Securities Commissions (“IOSCO”) published a joint report “Principles for Financial Market Infrastructures” (“PFMI”)² in April 2012. The PFMI update, harmonise and strengthen the risk management and related standards applicable to financial market infrastructures (“FMIs”) which include systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories. The PFMI are the latest international standards designed to ensure that the FMIs supporting the global financial markets are robust and thus well placed to withstand financial shocks.
- 2.2 Paragraph 1.23 of the PFMI states that, in general, the PFMI are applicable to FMIs that operated by central banks and those operated by the private sector, but recognises that there are exceptional cases where the PFMI are applied differently to central bank-operated FMIs due to requirements in relevant law, regulation or policy. The CPMI and IOSCO issued a short note “Application of Principles for financial market infrastructures to central bank FMIs”³ in August 2015 to elaborate this point. The note

¹ The office of the MA is known as the Hong Kong Monetary Authority (HKMA), and the MA is the Chief Executive of the HKMA. The MA is appointed under the Exchange Fund Ordinance to assist the Financial Secretary in performing his functions under the Exchange Fund Ordinance and to perform such other functions as are assigned by other Ordinances or by the Financial Secretary.

² The joint report is available on the BIS website: <http://www.bis.org/publ/cpss101a.pdf>

³ The note is available on the BIS website: <http://www.bis.org/cpmi/publ/d130.pdf>

provides guidance on how the PFMI apply to FMIs that are owned and operated by central banks, and further clarifies the interaction between the PFMI and central bank policies.

3 Terminology

- 3.1 Unless otherwise specified, terms used in this Guideline follow those used in the PSSVFO and the PFMI.

POLICY FRAMEWORK

4 International standards

- 4.1 The HKMA has committed to comply with international regulatory standards on overseeing FMIs, including the designated CSSs. On 28 March 2013, the HKMA announced its policy intention to adopt the PFMI, including the twenty-four principles and the five responsibilities, for the FMIs under its purview, and the PFMI came into effect on same day. The HKMA considers that observance of the PFMI fosters the safety and efficiency of the designated CSSs.
- 4.2 The designated CSSs, including the deemed designated CSSs specified in Schedule 2 to the PSSVFO, should endeavour to observe the PFMI requirements on a continuing basis and take remedial measures and/or mitigating controls agreed with the HKMA to address any gaps with the PFMI requirements within a reasonable timeframe. The MA will take into account the observance of the PFMI requirements in determining whether the settlement institution and/or system operator of a designated CSS has complied with the statutory obligations under the PSSVFO. The PFMI that are applicable to specific types of designated CSSs are outlined at Annex.
- 4.3 The MA may, from time to time, revise this Guideline to take into account any related supplemental guidance issued by CPMI-IOSCO relating to his exercise of any power or performance of any function assigned to him under the PSSVFO.

5 Application of the PFMI to designated CSSs owned and operated by the HKMA

5.1 In general, the PFMI requirements are applicable to the designated CSSs owned and operated by the HKMA, as well as those operated by the private sector. Among the designated CSSs, the Hong Kong Dollar Clearing House Automated Transfer System (Hong Kong dollar CHATS) and the Central Moneymarkets Unit (CMU) are operated and owned by the HKMA. The HKMA applies the same PFMI requirements to all designated CSSs. However, as noted in paragraph 2.2, there are exceptional cases where certain areas of the PFMI are applied differently to the designated CSSs owned and operated by the HKMA due to requirements in relevant law, regulation, or policy. For example, the HKMA may have separate public policy objectives and responsibilities for monetary and liquidity policies that take precedence. The exceptional cases where the PFMI may be applied differently are:

5.1.1 where a designated CSS is operated as an internal function of the HKMA, the requirements in paragraphs 6.2.3 to 6.2.4 on governance are not intended to constrain the composition of the HKMA's governing body or that body's roles and responsibilities;

5.1.2 where the HKMA owns and operates a designated CSS as one of the services which the HKMA has undertaken to provide, the HKMA's ability to ensure continuity of operations of the designated CSS as necessary in extreme financial circumstances means that the requirements to prepare recovery and orderly wind-down plans do not apply; however, if the HKMA were to decide to terminate the service, the HKMA would seek to do so in a transparent and orderly manner. In addition, since intervention by a resolution authority is not relevant, requirements in paragraph 6.3.4 to support resolution planning or intervention by a resolution authority in the operation or ownership of the designated CSS do not apply;

- 5.1.3 the requirement in paragraphs 6.13.2 to 6.13.4 to hold ring-fenced liquid net assets funded by equity to cover business risk and support a recovery or wind-down plan does not apply to designated CSSs that are owned and operated by the HKMA given the HKMA's inherent financial soundness. Similarly, the requirement in paragraph 6.13.5 to maintain a plan to raise additional equity does not apply.
- 5.2 Regardless of the form of any involvement of the HKMA in FMIs, nothing in this Guideline is intended to constrain the HKMA's policies on:
- 5.2.1 to whom the HKMA is prepared to offer accounts and on what terms (cf paragraphs 6.16.1 to 6.16.3);
 - 5.2.2 provision of credit by the HKMA, or the terms of or limits on such provision (cf paragraphs 6.4.1 to 6.4.4);
 - 5.2.3 what the HKMA accepts as eligible collateral in its lending operations (cf paragraphs 6.5.1 to 6.5.6);
 - 5.2.4 maintaining financial stability including managing participant defaults (cf paragraphs 6.12.1 to 6.12.4);
 - 5.2.5 the HKMA's investment strategy (including that for reserves management) or the disclosure of that strategy (cf paragraphs 6.14.1 to 6.14.4);
 - 5.2.6 the HKMA's choices on implementation of monetary policy.

6 Application of the PFMI to designated CSSs

6.1 Legal basis

A designated CSS should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

- 6.1.1 The legal basis should provide a high degree of certainty for each material aspect of a designated CSS's activities in all relevant jurisdictions.

- 6.1.2 A designated CSS should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.
- 6.1.3 A designated CSS should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.
- 6.1.4 A designated CSS should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the designated CSS under such rules and procedures will not be voided, reversed, or subject to stays.
- 6.1.5 A designated CSS conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

6.2 *Governance*

A designated CSS should have governance arrangements that are clear and transparent, promote the safety and efficiency of the designated CSS, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

- 6.2.1 A designated CSS should have objectives that place a high priority on the safety and efficiency of the designated CSS and explicitly support financial stability and other relevant public interest considerations.
- 6.2.2 A designated CSS should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners,

relevant authorities, participants, and, at a more general level, the public.

- 6.2.3 The roles and responsibilities of a designated CSS's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.
- 6.2.4 The board of a designated CSS should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).
- 6.2.5 The roles and responsibilities of management should be clearly specified. A designated CSS's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the designated CSS.
- 6.2.6 The board of a designated CSS (or equivalent) should establish a clear, documented risk-management framework that includes the designated CSS's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.
- 6.2.7 The board of a designated CSS (or equivalent) should ensure that the designated CSS's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major

decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

6.3 *Framework for the comprehensive management of risks*

A designated CSS should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

6.3.1 A designated CSS should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the designated CSS. Risk-management frameworks should be subject to periodic review.

6.3.2 A designated CSS should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the designated CSS.

6.3.3 A designated CSS should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

6.3.4 A designated CSS should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. A designated CSS should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, a designated CSS should also provide relevant authorities with the information needed for purposes of resolution planning.

6.4 *Credit risk*

A designated CSS should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. A designated CSS should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.

6.4.1 A designated CSS should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

6.4.2 A designated CSS should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

6.4.3 A designated CSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see paragraphs 6.5.1 to 6.5.6 on collateral). In the case of a deferred net settlement payment system or deferred net settlement securities settlement system in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such a designated CSS should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.

6.4.4 A designated CSS should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the designated CSS. These rules and procedures should address how potentially uncovered credit losses

would be allocated, including the repayment of any funds a designated CSS may borrow from liquidity providers. These rules and procedures should also indicate the designated CSS's process to replenish any financial resources that the designated CSS may employ during a stress event, so that the designated CSS can continue to operate in a safe and sound manner.

6.5 *Collateral*

A designated CSS that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. A designated CSS should also set and enforce appropriately conservative haircuts and concentration limits.

6.5.1 A designated CSS should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

6.5.2 A designated CSS should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

6.5.3 In order to reduce the need for procyclical adjustments, a designated CSS should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

6.5.4 A designated CSS should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

6.5.5 A designated CSS that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

6.5.6 A designated CSS should use a collateral management system that is well-designed and operationally flexible.

6.6 *Liquidity risk*

A designated CSS should effectively measure, monitor, and manage its liquidity risk. A designated CSS should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the designated CSS in extreme but plausible market conditions.

6.6.1 A designated CSS should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

6.6.2 A designated CSS should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

6.6.3 A designated CSS, including one employing a deferred net settlement mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

6.6.4 For the purpose of meeting its minimum liquid resource requirement, a designated CSS's qualifying liquid resources in each currency

include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If a designated CSS has access to routine credit at the central bank of issue, the designated CSS may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

6.6.5 A designated CSS may supplement its qualifying liquid resources with other forms of liquid resources. If the designated CSS does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if a designated CSS does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. A designated CSS should not assume the availability of emergency central bank credit as a part of its liquidity plan.

6.6.6 A designated CSS should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the designated CSS or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's

potential access to credit from the central bank of issue may be taken into account. A designated CSS should regularly test its procedures for accessing its liquid resources at a liquidity provider.

- 6.6.7 A designated CSS with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.
- 6.6.8 A designated CSS should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. A designated CSS should have clear procedures to report the results of its stress tests to appropriate decision makers at the designated CSS and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, a designated CSS should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the designated CSS, include all entities that might pose material liquidity risks to the designated CSS (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, a designated CSS should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.
- 6.6.9 A designated CSS should establish explicit rules and procedures that enable the designated CSS to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default

among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the designated CSS's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

6.7 *Settlement finality*

A designated CSS should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, a designated CSS should provide final settlement intraday or in real time.

6.7.1 A designated CSS's rules and procedures should clearly define the point at which settlement is final.

6.7.2 A designated CSS should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. A designated CSS should consider adopting real time gross settlement or multiple-batch processing during the settlement day.

6.7.3 A designated CSS should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

6.8 *Money settlements*

A designated CSS should conduct its money settlements in central bank money where practical and available. If central bank money is not used, a designated CSS should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

- 6.8.1 A designated CSS should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.
- 6.8.2 If central bank money is not used, a designated CSS should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.
- 6.8.3 If a designated CSS settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, a designated CSS should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. A designated CSS should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.
- 6.8.4 If a designated CSS conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.
- 6.8.5 A designated CSS's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the designated CSS and its participants to manage credit and liquidity risks.

6.9 *Physical deliveries*

A designated CSS that is a securities settlement system and/or operates a central securities depository should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

6.9.1 A designated CSS that is a securities settlement system and/or operates a central securities depository should have rules that clearly state its obligations with respect to the delivery of physical instruments or commodities.

6.9.2 A designated CSS that is a securities settlement system and/or operates a central securities depository should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

6.10 *Central securities depositories*

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

6.10.1 A designated CSS operating a central securities depository should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

6.10.2 A designated CSS operating a central securities depository should prohibit overdrafts and debit balances in securities accounts.

6.10.3 A designated CSS operating a central securities depository should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a central securities depository should provide incentives to immobilise or dematerialise securities.

6.10.4 A designated CSS operating a central securities depository should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

6.10.5 A designated CSS operating a central securities depository should employ a robust system that ensures segregation between its own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the designated CSS operating a central securities depository should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

6.10.6 A designated CSS operating a central securities depository should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

6.11 *Exchange-of-value settlement systems*

If a designated CSS settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

6.11.1 A designated CSS that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the designated CSS settles on a gross or net basis and when finality occurs.

6.12 *Participant-default rules and procedures*

A designated CSS should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures

should be designed to ensure that the designated CSS can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

6.12.1 A designated CSS should have default rules and procedures that enable the designated CSS to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

6.12.2 A designated CSS should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

6.12.3 A designated CSS should publicly disclose key aspects of its default rules and procedures.

6.12.4 A designated CSS should involve its participants and other stakeholders in the testing and review of the designated CSS's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

6.13 *General business risk*

A designated CSS should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

6.13.1 A designated CSS should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

- 6.13.2 A designated CSS should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity a designated CSS should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.
- 6.13.3 A designated CSS should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, a designated CSS should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.
- 6.13.4 Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the designated CSS to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.
- 6.13.5 A designated CSS should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

6.14 *Custody and investment risks*

A designated CSS should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. A

designated CSS's investments should be in instruments with minimal credit, market, and liquidity risks.

6.14.1 A designated CSS should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

6.14.2 A designated CSS should have prompt access to its assets and the assets provided by participants, when required.

6.14.3 A designated CSS should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

6.14.4 A designated CSS's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

6.15 *Operational risk*

A designated CSS should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the designated CSS's obligations, including in the event of a wide-scale or major disruption.

6.15.1 A designated CSS should establish a robust operational risk-management framework with appropriate systems, policies,

procedures, and controls to identify, monitor, and manage operational risks.

- 6.15.2 A designated CSS's board of directors (or equivalent) should clearly define the roles and responsibilities for addressing operational risk and should endorse the designated CSS's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.
- 6.15.3 A designated CSS should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.
- 6.15.4 A designated CSS should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.
- 6.15.5 A designated CSS should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.
- 6.15.6 A designated CSS should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology systems can resume operations within two hours following disruptive events. The plan should be designed to enable the designated CSS to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The designated CSS should regularly test these arrangements.

6.15.7 A designated CSS should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, a designated CSS should identify, monitor, and manage the risks its operations might pose to other FMIs.

6.16 *Access and participation requirements*

A designated CSS should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

6.16.1 A designated CSS should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

6.16.2 A designated CSS's participation requirements should be justified in terms of the safety and efficiency of the designated CSS and the markets it serves, be tailored to and commensurate with the designated CSS's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, a designated CSS should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

6.16.3 A designated CSS should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

6.17 *Tiered participation arrangements*

A designated CSS should identify, monitor, and manage the material risks to the designated CSS arising from tiered participation arrangements.

- 6.17.1 A designated CSS should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the designated CSS arising from such tiered participation arrangements.
- 6.17.2 A designated CSS should identify material dependencies between direct and indirect participants that might affect the designated CSS.
- 6.17.3 A designated CSS should identify indirect participants responsible for a significant proportion of transactions processed by the designated CSS and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the designated CSS in order to manage the risks arising from these transactions.
- 6.17.4 A designated CSS should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

6.18 *FMI links*

A designated CSS that is a securities settlement system and/or operates a central securities depository should identify, monitor, and manage link-related risks when it establishes a link with one or more FMIs.

- 6.18.1 The requirements in paragraphs 6.18.2 to 6.18.7 are only applicable to designated CSS that is a securities settlement system and/or operates a central securities depository.
- 6.18.2 Before entering into a link arrangement and on an ongoing basis once the link is established, a designated CSS should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that

each designated CSS is able to observe the other requirements in this Guideline.

- 6.18.3 A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.
- 6.18.4 A designated CSS operating a central securities depository which is linked to another central securities depository should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between central securities depositories should be covered fully with high-quality collateral and be subject to limits.
- 6.18.5 Provisional transfers of securities between a designated CSS operating a central securities depository which is linked to another central securities depository should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.
- 6.18.6 A designated CSS operating an investor central securities depository should only establish a link with an issuer central securities depository if the arrangement provides a high level of protection for the rights of the participants of the designated CSS operating an investor central securities depository.
- 6.18.7 A designated CSS operating an investor central securities depository that uses an intermediary to operate a link with an issuer central securities depository should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

6.19 *Efficiency and effectiveness*

A designated CSS should be efficient and effective in meeting the requirements of its participants and the markets it serves.

6.19.1 A designated CSS should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

6.19.2 A designated CSS should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

6.19.3 A designated CSS should have established mechanisms for the regular review of its efficiency and effectiveness.

6.20 *Communication procedures and standards*

A designated CSS should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

6.20.1 A designated CSS should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

6.21 *Disclosure of rules, key procedures, and market data*

A designated CSS should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the designated CSS. All relevant rules and key procedures should be publicly disclosed.

- 6.21.1 A designated CSS should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.
- 6.21.2 A designated CSS should disclose clear descriptions of the system's design and operations, as well as the designated CSS's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the designated CSS.
- 6.21.3 A designated CSS should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the designated CSS's rules and procedures and the risks they face from participating in the designated CSS.
- 6.21.4 A designated CSS should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The designated CSS should provide clear descriptions of priced services for comparability purposes.
- 6.21.5 A designated CSS should complete regularly and disclose publicly responses to the CPMI-IOSCO Disclosure framework for financial market infrastructures. A designated CSS also should, at a minimum, disclose basic data on transaction volumes and values.

**Matrix of applicability of PFMI to specific types of designated CSSs
under the PSSVFO**

| Principle | Payment System | Central Securities Depository | Securities Settlement System |
|--|----------------|-------------------------------|------------------------------|
| Principle 1: Legal basis | ✓ | ✓ | ✓ |
| Principle 2: Governance | ✓ | ✓ | ✓ |
| Principle 3: Framework for the comprehensive management of risks | ✓ | ✓ | ✓ |
| Principle 4: Credit risk | ✓ | | ✓ |
| Principle 5: Collateral | ✓ | | ✓ |
| Principle 6: Margin | | | |
| Principle 7: Liquidity risk | ✓ | | ✓ |
| Principle 8: Settlement finality | ✓ | | ✓ |
| Principle 9: Money settlements | ✓ | | ✓ |
| Principle 10: Physical deliveries | | ✓ | ✓ |
| Principle 11: Central securities depositories | | ✓ | |
| Principle 12: Exchange-of-value settlement systems | ✓ | | ✓ |
| Principle 13: Participant-default rules and procedures | ✓ | ✓ | ✓ |
| Principle 14: Segregation and portability | | | |
| Principle 15: General business risk | ✓ | ✓ | ✓ |
| Principle 16: Custody and investment risks | ✓ | ✓ | ✓ |
| Principle 17: Operational risk | ✓ | ✓ | ✓ |
| Principle 18: Access and participation requirements | ✓ | ✓ | ✓ |
| Principle 19: Tiered participation arrangements | ✓ | ✓ | ✓ |
| Principle 20: FMI links | | ✓ | ✓ |
| Principle 21: Efficiency and effectiveness | ✓ | ✓ | ✓ |
| Principle 22: Communication procedures and standards | ✓ | ✓ | ✓ |
| Principle 23: Disclosure of rules, key procedures, and market data | ✓ | ✓ | ✓ |
| Principle 24: Disclosure of market data by trade repositories | | | |