Committee on Payments and Market Infrastructures

Board of the International Organization of Securities Commissions

Implementation monitoring of PFMI: Level 2 assessment report for Canada

August 2018

BANK FOR INTERNATIONAL SETTLEMENTS

OICU-IOSCO

This publication is available on the BIS website (www.bis.org) and the IOSCO website (www.iosco.org).

ISBN 978-92-9259-187-8 (online)

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1. Executive summary

In April 2012, the Committee on Payments and Market Infrastructures (CPMI)[1] and the International Organization of Securities Commissions (IOSCO) issued the *Principles for financial market infrastructures* (PFMI).[2] The principles within the PFMI (the Principles) set expectations for the design and operation of key financial market infrastructures (FMIs) to enhance their safety and efficiency and, more broadly, to limit systemic risk and foster transparency and financial stability. The Principles apply to all systemically important payment systems (PSs), central securities depositories (CSDs), securities settlement systems (SSSs), central counterparties (CCPs) and trade repositories (TRs) (collectively FMIs). These FMIs clear, settle and record transactions in financial markets. In line with the G20's expectations, CPMI and IOSCO members have committed themselves to implementing and applying the PFMI in their respective jurisdictions.

Following the publication of the PFMI, the CPMI and IOSCO agreed to monitor the implementation of the PFMI in 28 jurisdictions that are members of the Financial Stability Board (FSB), the CPMI or IOSCO.[3] To this end, the CPMI-IOSCO Steering Group[4] established a standing working-level group (the Implementation Monitoring Standing Group (IMSG)) to design, organise and carry out the implementation monitoring assessments.[5]

The implementation monitoring programme has proceeded, so far, at three levels: a Level 1 assessment of the status of the implementation process; a Level 2 assessment of the completeness of the implemented framework and its consistency with the PFMI; and a Level 3 assessment of the consistency in outcomes of such frameworks.[6] While, in the case of the Principles, Level 2 and Level 3 assessments have proceeded separately, in the case of the Responsibilities the IMSG considered it more appropriate and more efficient to carry out a combined Level 2 and Level 3 assessment.[7]

This report presents the CPMI and IOSCO conclusions of a Level 2 assessment of whether, and to what degree, the content of the legal, regulatory and oversight frameworks, including rules and

1 The Committee on Payment and Settlement Systems (CPSS) changed its name to the Committee on Payments and Market Infrastructures (CPMI) on 1 September 2014. Please note that references to reports published before that date use the Committee's old name.

2 The CPSS-IOSCO *Principles for financial market infrastructures* (April 2012) can be found on the websites of the BIS at www.bis.org/cpmi/publ/d101.htm and IOSCO at www.iosco.org/library/pubdocs/pdf/IOSCOPD377.pdf.

3 The 28 jurisdictions participating in the PFMI implementation monitoring exercise are Argentina, Australia, Belgium, Brazil, Canada, Chile, China, the European Union, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

4 The Steering Group comprises a subset of the members of the CPMI and the IOSCO Board, and is responsible for providing operational guidance on behalf of the parent committees on joint CPMI-IOSCO work.

5 The IMSG comprises representatives from a subset of the Steering Group member jurisdictions that reflect a balance of CPMI and IOSCO members and geographical dispersion, as well as a range of supervisors/overseers of domestic and global FMIs.

6 To date, all 28 jurisdictions have completed Level 1 self-assessments of the implementation of both the Principles and the Responsibilities within their jurisdictions, across all FMI types. The IMSG has conducted Level 2 assessments of the implementation of the Principles in respect of CCPs and TRs in the European Union, Japan and the United States, and in respect of all FMI types in Australia, Hong Kong and Singapore. The IMSG has also conducted a Level 3 assessment of the implementation of the Principles (this review focuses on a subset of Principles in the PFMI that relate to financial risk management and recovery practices by CCPs, including certain practices related to governance of risk management, credit risk management, liquidity risk management, margin, collateral policy and investments and default management and recovery planning). The above mentioned reports are available on the CPMI and IOSCO's websites.

7 CPMI-IOSCO, *Assessment and review of application of Responsibilities for authorities*, November 2015, www.bis.org/cpmi/publ/d139.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD514.pdf.

regulations, any relevant policy statements or other forms of implementation applied to systemically important PSs, CSDs/SSSs, CCPs and TRs in Canada are complete and consistent with the Principles. It is concluded that the legal, regulatory and oversight frameworks in Canada are complete and consistent with the Principles with a small number of exceptions. However, it should be noted that Level 2 assessments do not evaluate whether FMIs are in observance with these measures, nor does it assess the effectiveness of the application of the legal and regulatory or oversight framework to FMIs by authorities (for example, through supervisory and oversight practices).

The work on the Level 2 assessment was carried out as a peer review from August 2017 to April 2018. The assessment reflects the status of Canada's legal, regulatory and oversight framework as of 30 June 2017. Accordingly, assessment ratings reflect the implementation measures in place as of 30 June 2017.

1.1 Legal and regulatory framework

The authorities responsible for regulation, supervision and oversight of FMIs in Canada are the Bank of Canada (BoC), the federal Department of Finance, and certain provincial securities regulators.[8] The provincial securities regulators are members of an umbrella organisation, the Canadian Securities Administrators (CSA).[9] PSs are jointly regulated by the BoC and the federal Department of Finance. CCPs and CSDs/SSSs are jointly regulated by the BoC and provincial securities regulators. TRs are regulated by provincial securities regulators.

At the federal level, the key statutes are the Payment Clearing and Settlement Act (PCSA)[10] and the Canadian Payments Act (CP Act).[11] The PCSA sets out the BoC's authority over systemically important PSs, CCPs and CSDs/SSSs. The CP Act addresses the Department of Finance's authority over PSs. At the provincial level, the authority of the provincial securities regulators over CCPs, CSDs/SSSs, and TRs is provided by the provincial securities or derivatives legislation of each responsible authority.

1.2 Key findings of the assessment

Payment systems

The Assessment Team (AT) concluded that all the Principles, except for Principle 7, have been implemented in a complete and consistent manner through the implementation measures of the Canadian authorities.

Central counterparties

The AT concluded that all the Principles, except for Principle 7, have been implemented in a complete and consistent manner through the implementation measures of the Canadian authorities.

[8] The relevant provincial securities regulators for this assessment are: the Autorité des marchés financiers (AMF), Ontario Securities Commission (OSC), British Columbia Securities Commission (BCSC), Manitoba Securities Commission (MSC), and Alberta Securities Commission (ASC).

[9] The CSA is an umbrella organisation of Canada's provincial and territorial securities regulators whose objective is to improve, coordinate and harmonise regulation of the Canadian capital markets. For ease, this report generally refers to the CSA as a whole but it is the individual members that retain statutory authority.

[10] Payment Clearing and Settlement Act, http://laws-lois.justice.gc.ca/PDF/P-4.4.pdf.

[11] Canadian Payments Act, http://laws-lois.justice.gc.ca/eng/acts/C-21/.

Central securities depositories / securities settlement systems

The AT concluded that all the Principles, except for Principle 7, have been implemented in a complete and consistent manner through the implementation measures of the Canadian authorities.

Trade repositories

The AT concluded that many of the Principles have been implemented in a complete and consistent manner through the implementation measures of the Canadian authorities. The AT nevertheless identified some gaps between the regulatory documents and some of the Principles, with different degrees of significance, resulting in ratings of broadly consistent, partly consistent or not consistent.

1.3 Summary response from the assessed jurisdiction's authorities

The Canadian authorities welcome the detailed and rigorous assessment from CPMI and IOSCO and appreciate this opportunity to respond to its conclusions. The Canadian authorities actively supported the development of the PFMIs and continue to support their implementation, both domestically and internationally, as minimum risk management standards.

The Assessment Team has made observations that we will carefully consider as we aim to continuously ensure our regulatory and oversight frameworks clearly reflect best practices. We note for clarity that the elements of the Canadian regime evaluated for consistency with the text of the PFMIs did not include certain other aspects of our regulatory and oversight frameworks, such as supervisory and enforcement powers that grant authorities the ability to review and approve all key elements of an FMI's governance and risk management framework and to induce changes where appropriate. As such, the Canadian authorities are of the view that consideration of all these other features could have positively influenced the outcome of the assessment.

We are pleased to acknowledge the Assessment Team's findings for PSs, CCPs and CSDs/SSSs that the applicable Principles have been implemented in a complete and consistent manner, with the exception of a small number of discrepancies between the text of the BoC-CSA Supplementary Guidance and the PFMIs about the composition of qualifying liquid resources and the treatment of extraordinary expenses in the calculation of liquid net assets funded by equity. While these discrepancies have had no implications for our FMIs given that the BoC Standards and CSA NI 24-102 incorporate the PFMIs in full, we will take steps to address the findings.

With respect to the findings for TRs (and the Trade Repository-related regulatory rules adopted in Canada ("TR Rules")), the Assessment Team identified certain potential regulatory gaps and recommended that some changes be made to ensure full and complete consistency with the PFMIs. While the Canadian authorities do not consider that the noted shortcomings constitute material divergences from the objectives of the PFMIs, and we do continue to expect that TRs adhere to the PFMIs in full, we will consider whether and in what instances it would be appropriate to amend the TR Rules or make other changes to regulatory requirements applicable to TRs to address these findings.

The approach to developing the TR Rules was to transform the policy standards within the PFMI Report into enforceable legal requirements. In doing so, it was imperative that the rule requirements provide clear and appropriate direction to market participants, which are capable of being implemented, and which are not duplicative. While the intent was to fully align the TR Rules with the PFMIs, some changes to, and omissions from, the language of the PFMI principles were necessary where it was determined that a particular principle or key consideration could not be appropriately transformed from a standard into an enforceable rule. Notwithstanding that some minor changes or omissions were necessary, we would note that the PFMI Report provides guidance in respect of TRs that the standards for operational risk are of paramount importance. These operational risk-related standards are rigorously implemented by the TR Rules. Furthermore, the TR Rules' Companion Policy guidance explains that compliance with the entirety of the PFMIs is assessed as part of a review of an application by a TR for recognition/designation and on an ongoing basis. Although not legally binding, this guidance indicates to TRs operating or seeking to operate in a Canadian jurisdiction that the TR Rules will be interpreted and applied in light of all applicable PFMI principles. This guidance also relays the expectation that full compliance with the PFMIs is necessary before a decision granting recognition/designation to a TR would be made. Lastly, as noted generally above, the TR Rules are only a piece of local regulatory regimes; provincial securities legislation and the regulations promulgated thereunder also provide each respective authority with broad oversight powers over a recognised/designated TR, including the ability to prescribe legally enforceable terms and conditions applicable to each such TR. The Canadian authorities are therefore of the view that compliance is expected with the totality of the applicable PFMI principles.

2. Introduction

This report presents the CPMI's and IOSCO's conclusions on the Level 2 assessment of the Principles across all FMI types in Canada. The assessment reflects the status of Canada's legal, regulatory and oversight framework as of 30 June 2017. This assessment was conducted as a peer review from August 2017 to April 2018.[12] Accordingly, the assessment ratings reflect the implementation measures in place as of 30 June 2017.

This assessment is part of the IMSG's effort to conduct Level 2 assessments of the legal, regulatory and oversight frameworks implementing the Principles for all FMI types in the 28 jurisdictions participating in the PFMI implementation monitoring exercise. For practical reasons, the Level 2 assessments are being carried out sequentially for groups of jurisdictions that have reported that final implementation measures for the Principles are in force, corresponding to the highest rating in the Level 1 assessments.[13]

The counterparts for this assessment were the BoC, the federal Department of Finance, and certain provincial securities regulators that are members of the CSA, as these are the authorities responsible for the regulation, supervision and oversight of FMIs in Canada.

2.1 Broader context of the Level 2 assessment

In line with the G20's expectations, CPMI and IOSCO members have undertaken to incorporate the Principles and the Responsibilities included in the PFMI in their legal and regulatory frameworks. The CPMI and IOSCO regard full, timely and consistent implementation of the PFMI as fundamental to ensuring the safety and soundness of FMIs, avoiding regulatory arbitrage, and supporting the resilience of the global financial system.

To that end, the CPMI and IOSCO have been actively monitoring the implementation of the PFMI based on a monitoring framework that has involved assessment at three levels:

(1) Level 1, to assess whether jurisdictions have completed the process of adopting the legislation, regulations and other policies that will enable them to implement the Principles and Responsibilities;

(2) Level 2, to assess whether the content of legislation, regulations and policies (the regulatory framework) is complete and consistent with the Principles and the Responsibilities; and

(3) Level 3, to assess whether there is consistency in the outcomes of implementation of the Principles and Responsibilities.

The Level 1 exercise covered jurisdictions' adoption of both the Principles and Responsibilities, across all FMI types, and was based on a self-assessment by the jurisdictions. The Level 2 and Level 3

[12] The CPMI and IOSCO thank the Assessment Team, which was led by Jochen Metzger (Deutsche Bundesbank) with the participation of Gary Li (The Securities and Futures Commission of Hong Kong), Barbara Lupi (Bank of Italy), Jorge Jimenez (National Banking and Securities Commission of Mexico), Nilima Ramteke (Reserve Bank of India), Eszter Tanai (European Central Bank), Sergio Ricardo Silva Schreiner (Securities and Exchange Commission of Brazil) and Daniel Garrido (Bank of Mexico) as well as Marc Hollanders (Bank for International Settlements) and Josafat De Luna Martínez (IOSCO Secretariat) as supporting members. The CPMI and IOSCO would also like to thank those who provided support to the Assessment Team, including Mark Zanger (Deutsche Bundesbank).

[13] CPMI-IOSCO, *Implementation monitoring of PFMI: Third update to Level 1 assessment report*, June 2016, www.bis.org/cpmi/publ/d145.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD534.pdf.

assessments of the Principles and the Responsibilities, by contrast, have been conducted as peer reviews across jurisdictions and in much greater detail.

The Principles assessments are ongoing, and are being considered separately at Level 2 and Level 3. For the Responsibilities, the IMSG combined the Level 2 and Level 3 assessments into a single exercise. The IMSG focused therefore on both the measures taken by the relevant authority to fulfil the Responsibilities, including its powers and the framework and processes in place to meet the requirements under the Responsibilities (Level 2), and how these measures translated into observed outcomes (Level 3).

The CPMI and IOSCO have conducted five Level 1 assessments since the publication of the PFMI. The initial assessment was published in August 2013[14] and the first update was published in May 2014,[15] followed by the second update in June 2015,[16] the third update in June 2016,[17] the fourth update in July 2017,[18] and the fifth update in July 2018.[19] Overall, the fifth update shows that further progress has been made by the 28 participating jurisdictions in completing the process of adopting legislation, regulations and/or policies to support implementation of the PFMI. The Level 1 assessments also showed that jurisdictions have implemented, or are in the process of implementing, the PFMI in different ways. Depending on the national legal and regulatory or oversight framework some jurisdictions use a policy-based approach (ie rely on a policy statement as the primary tool for adopting the PFMI), some use a rules-based approach (ie rely on rules and/or regulations corresponding to the PFMI) and others combine these two approaches.

In this respect, Canada can be described as having adopted a mixture of policy-based and rules-based approaches for implementing the Principles for the different FMI types.[20] In the Level 1 assessments, Canada reported that the final implementation measures are in force for all FMI types, for both the Principles and the Responsibilities. In the Level 2 and Level 3 assessments of the Responsibilities, Canadian authorities were assessed at the time to observe all relevant Responsibilities across FMI types, except Responsibility D for CCPs, CSDs/SSSs and PSs, for which they were assessed to be broadly observed.

The CPMI and IOSCO will continue to monitor jurisdictions' progress in implementing the Principles and Responsibilities in future assessments.

2.2 Objective and rating

The aim of the Level 2 assessment is to determine whether, and to what degree, the content of the legal and regulatory or oversight framework, including any relevant policy statements or other forms

[14] CPSS-IOSCO, *Implementation monitoring of PFMIs – Level 1 assessment report*, August 2013, www.bis.org/cpmi/publ/d111.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD419.pdf.

[15] CPSS-IOSCO, *Implementation monitoring of PFMIs: first update to Level 1 assessment report*, May 2014, www.bis.org/cpmi/publ/d117.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD440.pdf.

[16] CPMI-IOSCO, *Implementation monitoring of PFMIs: Second update to Level 1 assessment report*, June 2015, www.bis.org/cpmi/publ/d129.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD489.pdf.

[17] *CPMI-IOSCO, Implementation monitoring of PFMI: Third update to Level 1 assessment report*, June 2016, www.bis.org/cpmi/publ/d145.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD534.pdf.

[18] *CPMI-IOSCO, Implementation monitoring of PFMI: Fourth update to Level 1 assessment report*, July 2017, www.bis.org/cpmi/publ/d166.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD575.pdf.

[19] *CPMI-IOSCO, Implementation monitoring of PFMI: Fifth update to Level 1 assessment report*, July 2018, www.bis.org/cpmi/publ/d179.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD605.pdf.

[20] Refer to Section 3 for the overview of the regulatory, supervisory and oversight framework in Canada.

of implementation, applied in Canada is complete and consistent with the Principles. The focus of the Level 2 assessment is on the relevant framework itself, not on the application of this framework by authorities, nor on the FMIs' observance.

In conducting the assessment, the AT assessed whether there are gaps or shortcomings between implementation measures and the Principles and, if so, evaluated the materiality of the potential impact of those gaps. Ratings were then assigned based on these determinations to reflect the degree of completeness and consistency between an implementation measure and a particular Principle.

The rating framework used in Level 2 assessments (Table 1) is an adaptation of the approach described in the PFMI Assessment Methodology (AM).[21] In order to reflect the fact that the purpose of the Level 2 assessment is to evaluate the completeness and consistency of a jurisdiction's implementation measures, rather than whether FMIs in the jurisdiction are in observance of the Principles, the rating levels are: "Consistent", "Broadly consistent", "Partly consistent", "Not consistent" and "Not applicable".

Status rating of the Level 2 assessment — Table 1

Consistent	The jurisdiction's regulatory framework is consistent with the Principle. The assessment has identified no gaps or shortcomings, or only a few gaps and/or shortcomings that have no material impact on completeness and/or consistency.
Broadly consistent	The jurisdiction's regulatory framework is broadly consistent with the Principle. The assessment has identified gaps and/or shortcomings that have a minor impact on completeness and/or consistency.
Partly consistent	The jurisdiction's regulatory framework is partly consistent with the Principle. The assessment has identified gaps and/or shortcomings that have a significant impact on completeness and/or consistency.
Not consistent	The jurisdiction's regulatory framework is not consistent with the Principle. The assessment has identified gaps and/or shortcomings that have a major impact on completeness and/or consistency.
NA – No implementation measures needed (ie not applicable)	This status corresponds to the case where no relevant FMI exists that is within the scope of the Principle. A rating of "NA" will be indicated only if no relevant regulatory measures are being taken and no such FMI is expected to develop within the jurisdiction.

2.3 Scope

This report covers implementation measures in Canada for CCPs, PSs, CSDs/SSSs, and TRs. The main implementation measures assessed for Canada comprise the BoC's Risk-Management Standards for Designated FMIs (BoC Standards),[22] which build on federal statutes including the PCSA and CP Act; the CSA's National Instrument 24-102 on Clearing Agency Requirements (NI 24-102) and the related Companion Policy (24-102CP),[23] the Joint Supplementary Guidance developed by the Bank of Canada and the Canadian Securities Administrators (BoC-CSA Supplementary Guidance),[24] and the provincial

[21] CPSS-IOSCO, *Principles for financial market infrastructures: Disclosure framework and assessment methodology*, December 2012, www.bis.org/cpmi/publ/d106.htm and www.iosco.org/library/pubdocs/pdf/IOSCOPD396.pdf.

[22] *The Bank of Canada's Risk-Management Standards for Designated FMIs*, www.bankofcanada.ca/core-functions/financial-system/bank-canada-risk-management-standards-systemic-fmis/.

[23] *24-102 – Clearing Agency Requirements and Related Companion Policy 24-102CP*, www.osc.gov.on.ca/en/46657.htm.

[24] The BoC-CSA Supplementary Guidance is incorporated as part of the BoC Standards and the 24-102CP.

securities regulators Local Rules 91-507 and Multilateral Instrument 96-101,[25] Trade Repositories and Derivatives Data Reporting, and the related Companion Policy.

The assessed legal, regulatory and oversight frameworks are further described in Section 3.

2.4 Process

This Level 2 assessment was carried out in three stages over the course of seven months, and the methodology used was the same as the one used for previous Level 2 assessments. In developing its methodology, the IMSG drew heavily on the AM, published in December 2012. In the assessment, the AT proceeded as follows:

(i) Collection of information based on the Canadian authorities' responses to questionnaires;

(ii) Off-site review and follow-up exchange of information and discussions with the Canadian authorities and other members of the IMSG; and

(iii) Review of ratings by and response from the Canadian authorities.

The aim was to gain insight into the regulatory, supervisory and oversight framework as well as the content of existing legislation, regulations and policies used in the implementation of the Principles for all FMI types established in Canada.

The AT conducted a peer review based on the information provided by the relevant authorities as noted above. Interactions between the AT members and the Canadian authorities helped ensure that the AT understood the content and intent of the Canadian framework and gave the assessed jurisdiction an opportunity to provide feedback to the AT. In addition, discussions with other members of the IMSG helped ensure that a consistent approach was applied across all assessed FMI types and that the approach was consistent with that of previous assessments.

The report also reflects input from the Canadian authorities who reviewed the findings and recommendations and provided a jurisdictional response. A concise summary of the views of the Canadian authorities is included in the executive summary section of the report.

3. Overview of the regulatory, supervisory and oversight framework

The authorities responsible for regulation, supervision and oversight of FMIs in Canada are the BoC, the federal Department of Finance and certain provincial securities regulators that are members of the CSA. PSs are jointly regulated by the BoC and the federal Department of Finance. CCPs and CSDs/SSSs are jointly regulated by the BoC and provincial securities regulators. TRs are regulated by provincial securities regulators.

3.1 Payment systems

PSs are jointly regulated by the BoC and the federal Department of Finance.

The BoC's oversight role is set out in the PCSA, which assigns to the Governor of the BoC the responsibility for designating, as objects of the Bank's oversight, "clearing and settlement systems" that have the potential to pose systemic risk. Such systems include PSs, CCPs, and CSDs/SSSs. However, in

[25] The links to implementation measures of the provincial securities regulators relevant for this assessment can be found in Annex B.

order for a payment system to be declared systemic, the Minister of Finance has to give his consent and agree that it is in the public interest to do so (PCSA, Part 1, 4 (1)). The CP Act covers Payments Canada[26] and its powers in relation to national systems and the Minister of Finance's powers to designate and regulate payment systems of national or substantially national scope. In addition, the CP Act provides the Minister of Finance with oversight responsibilities over the activities of Payments Canada.

The BoC adopted the PFMI (including the Key Considerations) through the BoC Standards. The BoC Standards also incorporate the BoC-CSA Supplementary Guidance which was jointly developed by the BoC and CSA to provide additional clarity on certain aspects of the PFMI within the Canadian context. The BoC Standards are legally binding.

3.2 Central counterparties and central securities depositories/securities settlement systems

CCPs and CSDs/SSSs are jointly regulated by the BoC and provincial securities regulators.

At the federal level, the PCSA enables the Governor of the BoC to designate and oversee "clearing and settlement systems" that may be operated in such a manner as to pose systemic risk to the Canadian financial system if the Minister of Finance agrees that it is in the public interest to do so (PCSA, Part 1, 4 (1)). Such systems include PSs, CCPs, and CSDs/SSSs. The PCSA gives the BoC the authority to issue guidelines, acquire relevant information and conduct inspections with the aim of assessing whether systemic risk is adequately controlled. The PCSA also provides the Bank with enforcement provisions to ensure compliance with the PCSA. CCPs and CSDs/SSSs are subject to the PFMI through the BoC Standards. The BoC-CSA Supplementary Guidance, which is incorporated in the BoC Standards, also applies to CCPs and CSDs/SSSs.

At the provincial level, the authority of the provincial securities regulators over CCPs and CSDs/SSSs is provided by the provincial securities or derivatives legislation of each responsible authority. Under the coordination of the CSA, the provincial securities regulators adopted the PFMI principles (including the Key Considerations) through NI 24-102[27] and 24-102CP.[28] 24-102CP also incorporates the BoC-CSA Supplementary Guidance.

3.3 Trade repositories

The regulation, supervision and oversight of TRs falls exclusively under the various provincial securities regulators.

The legislative authority for regulation, supervision and oversight of TRs is contained in the provincial securities or derivatives legislation of each responsible authority, while the framework for regulation, supervision and oversight in each jurisdiction is set out in harmonised local and multi-jurisdictional rules/regulations, including a Companion Policy guidance, effective in each province and territory.

Based on a model provincial trade repository rule issued by the CSA, local rules (91-507 Trade Repositories and Derivatives Data Reporting) were adopted by each of the Ontario Securities

[26] In June 2016, the Canadian Payments Association, the country's financial market infrastructure for payments, changed its name to Payments Canada.

[27] NI 24-102 is a uniform national rule of all the CSA authorities that imposes requirements on CCPs and CSDs/SSSs. It also includes certain additional requirements, for example, in relation to governance and outsourcing.

[28] 24-102CP is a companion policy to NI 24-102 that sets out how the CSA authorities interpret or apply NI 24-102.

Commission (OSC) (OSC TR Rule), the Autorité des marchés financiers (AMF) (QC TR Regulation) and the Manitoba Securities Commission (MSC) (MSC TR Rule), while a multilateral instrument (Multilateral Instrument 96-101 Trade Repositories and Derivatives Data Reporting) was adopted in the remaining Canadian jurisdictions, including British Columbia and Alberta (the Multilateral Instrument (MI) jurisdictions).[29] A Companion Policy accompanies and sets out how the CSA authorities interpret or apply the local rules and the multilateral instrument. Responsible provincial authorities have entered a memorandum of understanding to cooperate and coordinate efforts to oversee the covered entities.

4. Assessment and recommendations

4.1 Summary assessment of completeness and consistency with the Principles

This section provides a high-level summary of the consistency and completeness of the regimes in Canada for PSs, CCPs, CSDs/SSSs and TRs with respect to the Principles. A more detailed assessment, including citations of the relevant legislation, regulation, policy and guidance, and notes explaining the assigned ratings, is provided in a tabular form in Section 4.2.

4.1.1 Overview

The AT found that the legal, regulatory and oversight frameworks in Canada are complete and consistent with the Principles with a small number of exceptions.

For PSs, all the Principles have been implemented in a complete and consistent manner through the BoC Standards (including the BoC-CSA Supplementary Guidance, which is incorporated in the BoC Standards), with the exception of Principle 7. For CCPs and for CSDs/SSSs, all the Principles have been implemented in a complete and consistent manner through the BoC Standards and NI 24-102 / 24-102CP, with the exception of Principle 7. As said before, the BoC Standards and the 24-102CP both incorporate the BoC-CSA Supplementary Guidance. For TRs, many of the Principles have been implemented in a complete and consistent manner through the provincial securities regulators local rules or multilateral instrument and the related Companion Policy. Some gaps were nevertheless identified, with different degrees of significance, resulting in ratings of broadly consistent, partly consistent or not consistent.

4.1.2 Implementation measures

For PSs, CCPs, and CSDs/SSSs, the BoC has implemented the PFMI (including the Key Considerations) verbatim through the BoC standards. For the purpose of providing additional clarity on certain aspects of the PFMI within the Canadian context, the BoC Standards also incorporate the BoC-CSA Supplementary Guidance which was jointly developed by the BoC and CSA.[30] Under NI 24-102 and 24-102CP, the CSA also adopted the PFMI (including the Key Considerations) that apply to CCPs and CSDs/SSSs. NI 24-102 also includes certain additional requirements, for example, in relation to governance and outsourcing. 24-102CP incorporates the BoC-CSA Supplementary Guidance.

For TRs, the provincial securities regulators implemented the PFMI either in the local (91-507 Trade Repositories and Derivatives Data Reporting) or multilateral (MI 96-101 Trade Repositories and Derivatives Data Reporting) TR rules following a "principle-based" approach such that the PFMI

[29] The MI jurisdictions are Alberta, Saskatchewan, Northwest Territories, Nunavut, the Yukon, New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island.

[30] The BoC-CSA Supplementary Guidance addresses governance, comprehensive risk management framework, collateral, liquidity risk, general business risk, recovery plan, custody and investment risk and disclosure of rules and key policies.

headline principles were largely adopted, but the Key Considerations were not necessarily prescriptively adopted in all cases. The Companion Policies include a list of the PFMI Principles applicable to a trade repository along with the corresponding sections of the respective rule.

4.1.3 Payment systems

Ratings summary[31] for PSs — Table 2

Assessment category	Principle
Consistent	*Principles 1, 2, 3, 4, 5, 8, 9, 12, 13, 15, 16, 17, 18, 19, 21, 22 and 23*
Broadly consistent	*None*
Partly consistent	*Principle 7*
Not consistent	*None*
Not applicable	*None*

The AT concluded that all the Principles have been implemented in a complete and consistent manner through the BoC Standards, incorporating the BoC-CSA Supplementary Guidance, with the exception of Principle 7. The AT also identified a gap for one other Principle (Principle 15) but concluded that this did not have a material impact on the overall rating for the Principle. It is recommended that the Canadian authorities adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources as well as in the definition of current operating expenses.

The AT identified the following gaps in relation to the implementation of Principle 7 on Liquidity risk and Principle 15 on General business risk:

- The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources to meet a certain portion of minimum liquid resource requirements". Allowing such use of other liquid resources is inconsistent with Key Consideration 5 of Principle 7, which explicitly requires the use of qualifying resources for meeting minimum liquid resource requirements. Furthermore, while the BoC-CSA Supplementary Guidance addresses the marketable nature of treasury bills as qualifying liquid resources, as well as the reliability of funding arrangements for such treasury bills, it has no requirement as to the "prearranged" nature of the funding arrangements. This is also inconsistent with Key Consideration 5 of Principle 7.
- The BoC-CSA Supplementary Guidance on general business risk instructs the FMIs to exclude "any extraordinary expenses (i.e. unessential, infrequent or one-off costs)" from the calculation of current operating expenses. While this is not fully consistent with Key Consideration 3 of Principle 15, the AT concluded that this does not have a material impact on the overall rating for Principle 15.

[31] The rating summary only lists those Principles that are applicable to the given type of FMI as defined in paragraphs 1.10 to 1.14 and shown in Table 1 of the PFMI.

4.1.4 Central counterparties

Ratings summary[32] for CCPs — Table 3

Assessment category	Principle
Consistent	*Principles 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 13,14, 15, 16, 17, 18, 19, 20, 21, 22 and 23*
Broadly consistent	*None*
Partly consistent	*Principle 7*
Not consistent	*None*
Not applicable	*None*

The AT concluded that all but one of the Principles (Principle 7) applicable to CCPs have been implemented in a complete and consistent manner through the NI 24-102, the 24-102CP (including the BoC-CSA Supplementary Guidance) and the BoC Standards (including the BoC-CSA Supplementary Guidance) The AT also identified a gap for one other Principle (Principle 15) but concluded that this did not have a material impact on the overall rating for the Principle. It is recommended that the Canadian authorities adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources as well as in the definition of current operating expenses.

The AT identified the following gaps in relation to the implementation of Principle 7 on Liquidity risk and Principle 15 on General business risk:

- The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources to meet a certain portion of minimum liquid resource requirements". Allowing such use of other liquid resources is inconsistent with Key Consideration 5 of Principle 7 which explicitly requires the use of qualifying resources for meeting minimum liquid resource requirements. Furthermore, while the BoC-CSA Supplementary Guidance addresses the marketable nature of treasury bills as qualifying liquid resources as well as the reliability of funding arrangements for such treasury bills, it has no requirement as to the "prearranged" nature of the funding arrangements. This is also inconsistent with Key Consideration 5 of Principle 7.
- The BoC-CSA Supplementary Guidance on general business risk instructs the FMIs to exclude "any extraordinary expenses (i.e. unessential, infrequent or one-off costs)" from the calculation of current operating expenses. While this is not fully consistent with Key Consideration 3 of Principle 15, the AT concluded that this does not have a material impact on the overall rating for Principle 15.

The AT also identified one implementation aspect, under Principle 2, with respect to safeguards for the independence of the risk management and audit functions in cases where the reporting lines are delegated to the CEO by the Board. This issue was not identified as a gap, but rather as an aspect regarding which further clarity could be provided by the Canadian authorities in the regulatory framework.

[32] The ratings summary only lists those Principles that are applicable to the given type of FMI as defined in paragraphs 1.10 to 1.14 and shown in Table 1 of the PFMI.

4.1.5 Central securities depositories/securities settlement systems

Ratings summary[33] for CSDs/SSSs — Table 4

Assessment category	Principle
Consistent	*Principles 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22 and 23*
Broadly consistent	*None*
Partly consistent	*Principle 7*
Not consistent	*None*
Not applicable	*None*

The AT concluded that all but one of the Principles (Principle 7) applicable to CSDs/SSSs have been implemented in a complete and consistent manner through the NI 24-102, the 24-102CP (including the BoC-CSA Supplementary Guidance) and the BoC Standards (including the BoC-CSA Supplementary Guidance). The AT also identified a gap for one other Principle (Principle 15) but concluded that this did not have a material impact on the overall rating for the Principle. It is recommended that the Canadian authorities adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources as well as in the definition of current operating expenses.

The AT identified the following gaps in relation to the implementation of Principle 7 on Liquidity risk and Principle 15 on General business risk:

- The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources to meet a certain portion of minimum liquid resource requirements". Allowing such use of other liquid resources is inconsistent with Key Consideration 5 of Principle 7 which explicitly requires the use of qualifying resources for meeting minimum liquid resource requirements. Furthermore, while the BoC-CSA Supplementary Guidance addresses the marketable nature of treasury bills as qualifying liquid resources as well as the reliability of funding arrangements for such treasury bills, it has no requirement as to the "prearranged" nature of the funding arrangements. This is also inconsistent with Key Consideration 5 of Principle 7.
- The BoC-CSA Supplementary Guidance on general business risk instructs the FMIs to exclude "any extraordinary expenses (i.e. unessential, infrequent or one-off costs)" from the calculation of current operating expenses. While this is not fully consistent with Key Consideration 3 of Principle 15, the AT concluded that this does not have a material impact on the overall rating for Principle 15.

The AT also identified one implementation aspect, under Principle 2, with respect to safeguards for the independence of the risk management and audit functions in cases where the reporting lines are delegated to the CEO by the Board. This issue was not identified as a gap, but rather as an aspect regarding which further clarity could be provided by the Canadian authorities in the regulatory framework.

[33] The ratings summary only lists those Principles that are applicable to the given type of FMI as defined in paragraphs 1.10 to 1.14 and shown in Table 1 of the PFMI.

4.1.6 Trade repositories

Ratings summary[34] for TRs — Table 5

Assessment category	Principle
Consistent	*Principles 3, 17, 18, 22, 23 and 24*
Broadly consistent	*Principles 1 and 15*
Partly consistent	*Principle 2*
Not consistent	*Principles 19, 20 and 21*
Not applicable	*None*

The AT concluded that the Principles applicable to TRs have been implemented in local rules 91-507 and Multilateral Instrument 96-101 in a complete and consistent manner for many of the Principles. The AT nevertheless identified gaps between the regulatory documents and some of the PFMI, with different degrees of significance, resulting in ratings of broadly consistent, partly consistent or not consistent. The provincial securities regulators are recommended to implement measures which address the gaps identified in relation to some Key Considerations in Principle 1 on Legal basis, Principle 2 on Governance, Principle 15 on General business risk and in relation to Principle 19 on Tiered participation arrangements, Principle 20 on FMI links and Principle 21 on Efficiency and effectiveness, and the related Key Considerations. The ratings for the Principles applicable to TRs are in line with previous Level 2 assessments on a cross-comparison basis.

The AT identified the following gaps:

- The rating of broadly consistent for Principle 1 reflects the fact that there are no implementation measures consistent with Key Consideration 5 setting the requirement for identification and mitigation of the risks arising from any potential conflict of laws across jurisdictions.
- Similarly, the rating of broadly consistent for Principle 15 reflects the fact that there are no specific provisions consistent with Key Consideration 5 requiring the TR to maintain a plan to raise additional equity approved by the board of directors and updated regularly.
- The overall rating of partly consistent for Principle 2 reflects the absence of specific provisions covering all aspects of Key Consideration 3 and Key Consideration 6 on the roles and responsibilities of the board of directors.
- The overall rating of not consistent for Principles 19, 20 and 21 has been influenced by the fact that the regulatory framework does not include specific corresponding rules but a general reference in the Companion Policy, which is non-binding, to the observance of all PFMI by the TR. It may be worth mentioning that the provincial securities regulators expect TRs applying for designation/recognition to comply with the totality of the PFMI. On the overall approach adopted to transform the Principles into enforceable legal requirements and in respect of why Principles 19, 20 and 21 were not fully incorporated into the regulatory framework, the provincial securities regulators represented that some changes to, and omissions from, the language of the Principles were necessary where they determined that a particular Principle or Key Consideration could not be appropriately transformed from a standard into an enforceable rule. After due consideration of the overall regulatory framework for TRs including rules and the related Companion Policy, the AT decided on a rating of not consistent for Principles 19, 20 and 21. In line with the ratings assigned in previous Level 2 assessments, the rating of not consistent reflects the identification of gaps and/or shortcomings that have a major impact on completeness and consistency with these particular Principles.

[34] The ratings summary only lists those Principles that are applicable to the given type of FMI as defined in paragraphs 1.10 to 1.14 and shown in Table 1 of the PFMI.

4.2 Canada's completeness and consistency with the Principles – Review and recommendations

4.2.1 Payment systems

Implementation of the Principles			
1. Text of applicable Principles and Key Considerations (KCs)[35]	**2. Implementation measures of the jurisdiction**	**3. Key conclusions for Principle**	**4. Recommendations and comments**
Principle 1: Legal basis **An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.**	The BoC has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*	BoC Standard 1: Legal Basis		
2. *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*	BoC Standard 1: Legal Basis		
3. *An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.*	BoC Standard 1: Legal Basis		
4. *An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.*	BoC Standard 1: Legal Basis		

[35] Only the relevant principles for PSs (as set forth in the annex E of the PFMI) are included.

5. *An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.*	BoC Standard 1: Legal Basis		

Principle 2: Governance **An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards. In addition, supplementary guidance was provided on the Governance Principle.	**Consistent**	
1. *An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.*	BOC Standard 2: Governance BoC-CSA Supplementary Guidance		
2. *An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.*	BOC Standard 2: Governance		
3. *The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.*	BOC Standard 2: Governance		
4. *The board 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).*	BOC Standard 2: Governance		

5. *The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.*	BOC Standard 2: Governance		
6. *The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.*	BOC Standard 2: Governance		
7. *The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.*	BOC Standard 2: Governance		

Principle 3: Framework for the comprehensive management of risks **An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.*	BOC Standard 3: Framework for the Comprehensive Management of Risks		

2. *An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.*	BOC Standard 3: Framework for the Comprehensive Management of Risks		
3. *An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.*	BOC Standard 3: Framework for the Comprehensive Management of Risks		
4. *An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.*	BOC Standard 3: Framework for the Comprehensive Management of Risks.		

Principle 4: Credit risk **An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	

in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.			
1. *An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.*	BOC Standard 4: Credit Risk		
2. *An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.*	BOC Standard 4: Credit Risk		
3. *A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.*	BOC Standard 4: Credit Risk		
4. *An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may*	BOC Standard 4: Credit Risk		

borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.			

Principle 5: Collateral **An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards. In addition, supplementary guidance was provided on certain elements of the Collateral Principle.	**Consistent**	
1. *An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.*	BOC Standard 5: Collateral. BoC-CSA Supplementary Guidance		
2. *An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.*	BOC Standard 5: Collateral. BoC-CSA Supplementary Guidance		
3. *In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.*	BOC Standard 5: Collateral		
4. *An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.*	BOC Standard 5: Collateral. BoC-CSA Supplementary Guidance		
5. *An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.*	BOC Standard 5: Collateral		

6. *An FMI should use a collateral management system that is well-designed and operationally flexible.*	BOC Standard 5: Collateral		

Principle 7: Liquidity risk **An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.**		**Partly consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources.
1. *An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.*	BoC Standard 7: Liquidity Risk		
2. *An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.*	BoC Standard 7: Liquidity Risk		
3. *A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.*	BoC Standard 7: Liquidity Risk BoC-CSA Supplementary Guidance		

5. *For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.*	BoC Standard 7: Liquidity Risk	The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources" to meet a certain portion of minimum liquid resource requirements. The rationale given in the supplementary guidance is that "it may be prohibitively expensive, or even impossible, for the FMI to obtain sufficient qualifying liquid resources." Notwithstanding the rationale, allowing such use of other liquid resources is inconsistent with KC 5 which explicitly requires the use of qualifying liquid resources for meeting minimum liquid resource requirements.	
6. *An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.*	BoC Standard 7: Liquidity Risk		

7. *An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.*	BoC Standard 7: Liquidity Risk BoC-CSA Supplementary Guidance		
8. *An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.*	BoC Standard 7: Liquidity Risk		
9. *An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its*	BoC Standard 7: Liquidity Risk BoC-CSA Supplementary Guidance		

supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.			
10. *An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.*	BoC Standard 7: Liquidity Risk		

Principle 8: Settlement finality **An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.**	The BoC has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI's rules and procedures should clearly define the point at which settlement is final.*	BOC Standard 8: Settlement Finality		
2. *An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.*	BOC Standard 8: Settlement Finality		
3. *An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.*	BOC Standard 8: Settlement Finality		

Principle 9: Money settlements **An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.*	BOC Standard 9: Money settlements		
2. *If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.*	BOC Standard 9: Money settlements		
3. *If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*	BOC Standard 9: Money settlements		
4. *If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.*	BOC Standard 9: Money settlements		

5. *An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.*	BOC Standard 9: Money settlements		

Principle 12: Exchange-of-value settlement systems **If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one **obligation** occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.*	BOC Standard 12: Exchange of value settlement systems		

Principle 13: Participant-default rules and procedures **An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.**	The BoC has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the*	BOC Standard 13: Participant-default rules and procedures		

event of a participant default and that address the replenishment of resources following a default.			
2. *An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.*	BOC Standard 13: Participant-default rules and procedures		
3. *An FMI should publicly disclose key aspects of its default rules and procedures.*	BOC Standard 13: Participant-default rules and procedures		
4. *An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.*	BOC Standard 13: Participant-default rules and procedures		

Principle 15: General business risk **An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.**	The BoC has adopted the PFMI and Key Considerations verbatim as its risk management standards. In addition, supplementary guidance was provided on certain elements of the General Business Risk Principle (General business risk and Recovery Plans).	**Consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the definition of current operating expenses.
1. *An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.*	BOC Standard 15: General Business Risk BoC-CSA Supplementary Guidance		
2. *An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations*	BOC Standard 15: General Business Risk		

	and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI 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.	BoC-CSA Supplementary Guidance		
3.	*An FMI 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, an FMI 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.*	BOC Standard 15: General Business Risk BoC-CSA Supplementary Guidance	The BoC-CSA Supplementary Guidance on general business risk instructs FMIs to exclude "any extraordinary expenses (i.e. unessential, infrequent or one-off costs)" from the calculation of current operating expenses. This is not fully consistent with KC 3. Note that footnote 137 for the explanatory note 3.15.5 in the PFMI explicitly mentions excluding depreciation and amortisation from the current operating expenses, but not extraordinary expenses.	
4.	*Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.*	BOC Standard 15: General Business Risk BoC-CSA Supplementary Guidance		
5.	*An FMI 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.*	BOC Standard 15: General Business Risk		

Principle 16: Custody and investment risks **An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards. In addition, supplementary guidance was provided on the custody and investment risk Principle.	**Consistent**	
1. *An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.*	BOC Standard 16: Custody and Investment risk		
2. *An FMI should have prompt access to its assets and the assets provided by participants, when required.*	BOC Standard 16: Custody and Investment risk BoC-CSA Supplementary Guidance		
3. *An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.*	BOC Standard 16: Custody and Investment risk		
4. *An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.*	BOC Standard 16: Custody and Investment risk BoC-CSA Supplementary Guidance		

Principle 17: Operational risk **An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	

should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.			
1. *An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.*	BOC Standard 17: Operational Risk		
2. *An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.*	BOC Standard 17: Operational Risk		
3. *An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*	BOC Standard 17: Operational Risk		
4. *An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.*	BOC Standard 17: Operational Risk		
5. *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*	BOC Standard 17: Operational Risk		
6. *An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme*	BOC Standard 17: Operational Risk		

circumstances. The FMI should regularly test these arrangements.			
7. *An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.*	BOC Standard 17: Operational Risk		

Principle 18: Access and participation requirements **An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.*	BOC Standard 18: Access and participation requirements		
2. *An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.*	BOC Standard 18: Access and participation requirements		
3. *An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.*	BOC Standard 18: Access and participation requirements		

Principle 19: Tiered participation arrangements **An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.*	BOC Standard 19: Tiered participation arrangements		
2. *An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*	BOC Standard 19: Tiered participation arrangements		
3. *An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.*	BOC Standard 19: Tiered participation arrangements		
4. *An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*	BOC Standard 19: Tiered participation arrangements		

Principle 21: Efficiency and effectiveness **An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products*	BOC Standard 21: Efficiency and Effectiveness		

cleared, settled, or recorded; and use of technology and procedures.			
2. *An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.*	BOC Standard 21: Efficiency and Effectiveness		
3. *An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*	BOC Standard 21: Efficiency and Effectiveness		

Principle 22: Communication procedures and standards **An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards.	**Consistent**	
1. *An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.*	BOC Standard 22: Communication procedures and standards		

Principle 23: Disclosure of rules, key procedures, and market data **An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.**	The Bank of Canada has adopted the PFMI and Key Considerations verbatim as its risk management standards. In addition, supplementary guidance was provided on the disclosure Principle.	**Consistent**	
1. *An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.*	BOC Standard 23: Disclosure of rules, key procedures and market data		

2. An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.	BOC Standard 23: Disclosure of rules, key procedures and market data		
3. An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.	BOC Standard 23: Disclosure of rules, key procedures and market data		
4. An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.	BOC Standard 23: Disclosure of rules, key procedures and market data		
5. An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure *framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*	BOC Standard 23: Disclosure of rules, key procedures and market data BoC-CSA Supplementary Guidance		

4.2.2 Central counterparties

Implementation of the Principles			
1. Text of applicable Principles and Key Considerations (KCs) [36]	**2. Implementation measures of the jurisdiction**	**3. Key conclusions for Principle**	**4. Recommendations and comments**
Principle 1: Legal basis **An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.**		**Consistent**	
1. *The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1 and s. 1.1 definition "PFMI Principle"		
5. *An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

[36] Only the relevant principles for CCPs (as set forth in the annex E of the PFMI) are included.

Principle 2: Governance **An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.**		**Consistent**	Canadian authorities should consider providing greater clarity with respect to safeguards for the independence of the risk management and audit functions in situations where the FMI's chief risk officer or the chief compliance officer report to the CEO instead of the board.
1. *An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
2. *An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *The board 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).*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. *The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity*	BoC Standard 2: Governance		

	necessary to discharge their responsibilities for the operation and risk management of the FMI.	NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		
6.	*The board should establish a clear, documented risk-management framework that includes the FMI’s risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”	Section 4.3(1) of NI 24-102 permits the Chief Risk Officer (CRO) and Chief Compliance Officer (CCO) of the FMI to report to the Chief Executive Officer (CEO) instead of the board, if so determined by the board. The PFMI does not explicitly prohibit this but KC 6 does require “that the risk-management and internal control functions have sufficient authority, independence, resources and access to the board”. NI 24-102 specifies several ways for the CRO/CCO to contact the Board (eg through recommendations or via the Risk/Audit Committees). However, a reporting line to the CEO may result in insufficient independence of the risk and audit functions unless there are adequate safeguards in place that address the potential conflicts of interest if the risk / audit functions report to the CEO. This may be of particular interest, for instance, during the preparation of proposals to the Board or Risk/Audit Committees as well as regarding certain administrative functions such as the performance management of the CRO/CCO by the CEO.	
7.	*The board should ensure that the FMI’s design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		

stakeholders and, where there is a broad market impact, the public.			
Principle 3: Framework for the comprehensive management of risks **An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.**		**Consistent**	
1. *An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

authorities with the information needed for purposes of resolution planning.			

Principle 4: Credit risk **An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.**		**Consistent**	
1. An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
2. An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

4. *A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
5. *A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

	conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.			
6.	*In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
7.	*An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 5: Collateral **An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.**		**Consistent**	
1. An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	BoC Standard 5: Collateral NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
2. An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	BoC Standard 5: Collateral NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
3. In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.	BoC Standard 5: Collateral NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
4. An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.	BoC Standard 5: Collateral NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
5. An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.	BoC Standard 5: Collateral NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
6. An FMI should use a collateral management system that is well-designed and operationally flexible.	BoC Standard 5: Collateral		

	NI 24-102, para. 3.1(a), and s. 1.1 definition “PFMI Principle”		

Principle 6: Margin **A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.**		**Consistent**	
1. A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition “PFMI Principle”		
2. A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition “PFMI Principle”		
3. A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition “PFMI Principle”		

the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.			
4. A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
5. In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
6. A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

7. *A CCP should regularly review and validate its margin system.*	BoC Standard 6: Margin NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 7: Liquidity risk **An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.**		**Partly consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources.
1. *An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
2. *An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
4. *A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.			
5. For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance	The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources" to meet a certain portion of minimum liquid resource requirements. The rationale given in the supplementary guidance is that "it may be prohibitively expensive, or even impossible, for the FMI to obtain sufficient qualifying liquid resources." Notwithstanding the rationale, allowing such use of other liquid resources is inconsistent with KC 5 which explicitly requires the use of qualifying liquid resources for meeting minimum liquid resource requirements.	
6. An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

	assume the availability of emergency central bank credit as a part of its liquidity plan.			
7.	*An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
8.	*An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
9.	*An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks,*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.			
10. *An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 8: Settlement finality **An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.**		**Consistent**	
1. *An FMI's rules and procedures should clearly define the point at which settlement is final.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
2. *An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

3. *An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 9: Money settlements **An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.**		**Consistent**	
1. *An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
2. *If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
3. *If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		
4. *If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

5. *An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 10: Physical deliveries **An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.**		**Consistent**	
1. *An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.*	BoC Standard 10: Physical Deliveries NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.*	BoC Standard 10: Physical Deliveries NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 12: Exchange-of-value settlement systems **If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.**		**Consistent**	
1. *An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.*	BoC Standard 12: Exchange-of-Value Settlement Systems NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 13: Participant-default rules and procedures **An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.**		**Consistent**	
1. *An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should publicly disclose key aspects of its default rules and procedures.*	BoC Standard 13: Participant-Default Rules and Procedures		

	NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 14: Segregation and portability **A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.**		**Consistent**	
1. *A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.*	BoC Standard 14: Segregation and Portability NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" NI 94-102, Part 5, particularly ss. 29 and 30 94-201CP – Part 5, particularly ss. 29 and 30		
2. *A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.*	BoC Standard 14: Segregation and Portability NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" NI 94-102, s. 30. 94-102CP, s. 30.		

3. *A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.*	BoC Standard 14: Segregation and Portability NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle" NI 94-102, s. 30 and 32. 94-102CP, s. 30 and 32.		
4. *A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.*	BoC Standard 14: Segregation and Portability NI 24-102, para. 3.1(a), and s. 1.1 definition "PFMI Principle"		

Principle 15: General business risk **An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.**		**Consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the definition of current operating expenses.
1. *An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principles" BoC-CSA Supplementary Guidance		

2. *An FMI 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 an FMI 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.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
3. *An FMI 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, an FMI 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.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance	The BoC-CSA Supplementary Guidance on general business risk instructs FMIs to exclude "any extraordinary expenses (ie unessential, infrequent or one-off costs)" from the calculation of current operating expenses. This is not fully consistent with KC 3. Footnote 137 for the explanatory note 3.15.5 in the PFMI explicitly mentions excluding depreciation and amortisation from the current operating expenses, but not extraordinary expenses.	
4. *Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
5. *An FMI 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.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 16: Custody and investment risks **An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.**		**Consistent**	
1. *An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" NI 94-102, s. 30. 94-102CP, s. 30.		
2. *An FMI should have prompt access to its assets and the assets provided by participants, when required.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
3. *An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" NI 94-102, ss. 32 and 33. 94-102CP, ss. 32 and 33 BoC-CSA Supplementary Guidance		

Principle 17: Operational risk **An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.**		**Consistent**	
1. *An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

6. *An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
7. *An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 18: Access and participation requirements **An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.**		**Consistent**	
1. *An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

least-restrictive impact on access that circumstances permit.			
3. *An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 19: Tiered participation arrangements **An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.**		**Consistent**	
1. *An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.*	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.*	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle		

4. *An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 20: FMI links **An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.**		**Consistent**	
1. *Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.*	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *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.*	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
7. *Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.*	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
8. *Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.*	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 21: Efficiency and effectiveness **An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.**		**Consistent**	
1. *An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		
2. *An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		
3. *An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		

Principle 22: Communication procedures and standards **An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.**		**Consistent**	
1. *An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.*	BoC Standard 22: Communication Procedures and Standards NI 24-102, s. 3.1, and s. 1.1 definition “PFMI Principle”		

Principle 23: Disclosure of rules, key procedures, and market data **An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.**		**Consistent**	
1. *An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. *An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle", and sections 2.1 and 2.2 and s. 1.1 definition "PFMI Disclosure Framework Document" BoC-CSA Supplementary Guidance		

4.2.3 Central securities depositories and securities settlement systems

Implementation of the Principles			
1. Text of applicable Principles and Key Considerations (KCs)[37]	**2. Implementation measures of the jurisdiction**	**3. Key conclusions for Principle**	**4. Recommendations and comments**
Principle 1: Legal basis **An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.**		**Consistent**	
1. *The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1 and s. 1.1 definition "PFMI Principle"		

[37] Only the relevant principles for CSDs or SSSs (as set forth in the annex E of the PFMI) are included.

5. *An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.*	BoC Standard 1: Legal Basis NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 2: Governance **An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.**		**Consistent**	Canadian authorities should consider providing greater clarity with respect to safeguards for the independence of the risk management and audit functions in situations where the FMI's chief risk officer or the chief compliance officer report to the CEO instead of the board.
1. *An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
2. *An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple*	BoC Standard 2: Governance		

	roles. This typically requires the inclusion of non-executive board member(s).	NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5.	*The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
6.	*The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"	Section 4.3(1) of NI 24-102 permits the Chief Risk Officer (CRO) and Chief Compliance Officer (CCO) of the FMI to report to the Chief Executive Officer (CEO) instead of the board, if so determined by the board. The PFMI does not explicitly prohibit this but KC 6 does require "that the risk-management and internal control functions have sufficient authority, independence, resources and access to the board". NI 24-102 specifies several ways for the CRO/CCO to contact the Board (eg through recommendations or via the Risk/Audit Committees). However, a reporting line to the CEO may result in insufficient independence of the risk and audit functions unless there are adequate safeguards in place that address the potential conflicts of interest if the risk / audit functions report to the CEO. This may be of particular interest, for instance, during the preparation of proposals to the Board or Risk/Audit Committees as well as regarding certain administrative functions such as the performance management of the CRO/CCO by the CEO.	

7. *The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.*	BoC Standard 2: Governance NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 3: Framework for the comprehensive management of risks **An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.**		**Consistent**	
1. *An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.*	BoC Standard 3: Framework for the Comprehensive Management of Risks NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery*	BoC Standard 3: Framework for the Comprehensive Management of Risks		

or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.	NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

Principle 4: Credit risk **An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.**		**Consistent**	
1. *An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

2. *An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
3. *A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
7. *An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.*	BoC Standard 4: Credit Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

Principle 5: Collateral **An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI**		**Consistent**	

should also set and enforce appropriately conservative haircuts and concentration limits.			
1. *An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
2. *An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
3. *In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
4. *An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
5. *An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
6. *An FMI should use a collateral management system that is well-designed and operationally flexible.*	BoC Standard 5: Collateral NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

Principle 7: Liquidity risk **An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.**		**Partly consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the allowed use of other liquid resources and the definition of qualifying liquid resources.
1. *An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
2. *An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
3. *A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
5. *For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle	The BoC-CSA Supplementary Guidance on liquidity risk allows the use of "other liquid resources" to meet a certain portion of minimum liquid resource requirements. The rationale	

	committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.	BoC-CSA Supplementary Guidance	given in the supplementary guidance is that "it may be prohibitively expensive, or even impossible, for the FMI to obtain sufficient qualifying liquid resources." Notwithstanding the rationale, allowing such use of other liquid resources is inconsistent with KC 5 which explicitly requires the use of qualifying liquid resources for meeting minimum liquid resource requirements.	
6.	*An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
7.	*An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI*	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

should regularly test its procedures for accessing its liquid resources at a liquidity provider.			
8. An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
9. An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
10. An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should	BoC Standard 7: Liquidity Risk NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

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

Principle 8: Settlement finality **An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.**		**Consistent**	
1. *An FMI's rules and procedures should clearly define the point at which settlement is final.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
2. *An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
3. *An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.*	BoC Standard 8: Settlement Finality NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

Principle 9: Money settlements **An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.**		**Consistent**	
1. *An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
2. *If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
3. *If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
4. *If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		
5. *An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in*	BoC Standard 9: Money Settlements NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

order to enable the FMI and its participants to manage credit and liquidity risks.			

Principle 10: Physical deliveries **An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.**		**Consistent**	
1. An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	BoC Standard 10: Physical Deliveries NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	BoC Standard 10: Physical Deliveries NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 11: Central securities depositories **A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.**		**Consistent**	
1. A CSD 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.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		

2. A CSD should prohibit overdrafts and debit balances in securities accounts.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		
3. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		
4. A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		
5. A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD 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.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		
6. A CSD 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.	BoC: Standard 11: Central Securities Depository NI 24-102, para. 3.1(c), and s. 1.1 definition "PFMI Principle"		

Principle 12: Exchange-of-value settlement systems **If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other**		**Consistent**	
1. *An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.*	BoC Standard 12: Exchange-of-Value Settlement Systems NI 24-102, para. 3.1(b), and s. 1.1 definition "PFMI Principle"		

Principle 13: Participant-default rules and procedures **An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.**		**Consistent**	
1. *An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should publicly disclose key aspects of its default rules and procedures.*	BoC Standard 13: Participant-Default Rules and Procedures		

	NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.*	BoC Standard 13: Participant-Default Rules and Procedures NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 15: General business risk **An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.**		**Consistent**	The Canadian authorities should adapt their regulatory framework to be consistent with the PFMI in the definition of current operating expenses.
1. *An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
2. *An FMI 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 an FMI 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*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		

appropriate, of its critical operations and services if such action is taken.			
3. *An FMI 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, an FMI 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.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance	The BoC-CSA Supplementary Guidance on general business risk instructs FMIs to exclude "any extraordinary expenses (ie unessential, infrequent or one-off costs)" from the calculation of current operating expenses. This is not fully consistent with KC 3. Footnote 137 for the explanatory note 3.15.5 in the PFMI explicitly mentions excluding depreciation and amortization from the current operating expenses, but not extraordinary expenses.	
4. *Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
5. *An FMI 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.*	BoC Standard 15: General Business Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 16: Custody and investment risks **An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.**		**Consistent**	

1. *An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" NI 94-102, s. 30 94-102CP, s. 30.		
2. *An FMI should have prompt access to its assets and the assets provided by participants, when required.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" BoC-CSA Supplementary Guidance		
3. *An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.*	BoC Standard 16: Custody and Investment Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle" NI 94-102, ss. 32 and 33 94-102CP, ss. 32 and 33 BoC-CSA Supplementary Guidance		

Principle 17: Operational risk **An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems**		**Consistent**	

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 FMI's obligations, including in the event of a wide-scale or major disruption.			
1. *An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
6. *An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.			
7. *An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.*	BoC Standard 17: Operational Risk NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 18: Access and participation requirements **An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.**		**Consistent**	
1. *An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a*	BoC Standard 18: Access and Participation Requirements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

participant that breaches, or no longer meets, the participation requirements.			

Principle 19: Tiered participation arrangements **An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.**		**Consistent**	
1. An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	BoC Standard 19: Tiered Participation Arrangements NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 20: FMI links **An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.**		**Consistent**	
1. Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. 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.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
6. An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.	BoC Standard 20: FMI Links NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 21: Efficiency and effectiveness **An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.**		**Consistent**	
1. *An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*	BoC Standard 21: Efficiency and Effectiveness NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 22: Communication procedures and standards **An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.**		**Consistent**	
1. *An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.*	BoC Standard 22: Communication Procedures and Standards NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		

Principle 23: Disclosure of rules, key procedures, and market data **An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.**		**Consistent**	
1. *An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
2. *An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
3. *An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
4. *An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle"		
5. *An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO* Disclosure *framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*	BoC Standard 23: Disclosure of Rules, Key Procedures, and Market Data NI 24-102, s. 3.1, and s. 1.1 definition "PFMI Principle", and sections 2.1 and 2.2 and s. 1.1 definition "PFMI Disclosure Framework Document" BoC-CSA Supplementary Guidance		

4.2.4 Trade repositories

Implementation of the Principles			
1. Text of applicable Principles and Key Considerations (KCs)[38]	**2. Implementation measures of the jurisdiction**	**3. Key conclusions for Principle**	**4. Recommendations and comments**
Principle 1: Legal basis **An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.**	OSC TR Rule, s. 7(1) OSC TR Rule Companion Policy guidance for s. 7(1) QC TR Regulation s. 7(1) and Policy Statement for s. 7(1) MSC TR Rule s. 7(1) and MSC CP guidance MI 96-101, s. 7(1) MI 96-101 Companion Policy guidance for s. 7(1)	**Broadly consistent** The local implementation measures of the respective provincial securities regulators are broadly consistent with Principle 1. The overall rating has been influenced by the absence of specific measures implementing KC 5.	The provincial securities regulators are recommended to implement measures which address the gap identified in relation to KC 5.
1. *The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*	OSC TR Rule and Companion Policy guidance, s. 7(1) OSC TR Rule, s. 7(2) QC TR Regulation ss. 7(1), (2) and Policy Statement MSC TR Rule s. 7(1), 7(2) and MSC CP guidance MI 96-101s. 7(2)		
2. *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*	OSC TR Rule, ss. 7(1), (2) OSC TR Rule, s. 8(1)(a) OSC TR Rule, ss. 17(1)(a), (3), (4)		

[38] Only the relevant principles for TRs (as set forth in the annex E of the PFMI) are included.

	QC TR Regulation ss. 7(1), (2) QDA s. 26 QC TR Regulation ss. 17(1)(a), (3), (4) MSC TR Rule s. 7(1), 7(2), 8(1), and ss 17(1), (3) and (4) and the MSC CP guidance MI 96-101, ss 7(1), (2) MI 96-101, s. 8 MI 96-101 s. 17		
3. *An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.*	OSC TR Rule, ss. 7(1), (2)(b), 8(1)(a) QC TR Regulation s. 7(1) and QDA s. 26 MSC TR Rule s. 7(1), 7(2)(b) and 8(1)(a) and the MSC CP guidance MI 96-101, s. 7		
4. *An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.*	OSC TR Rule, s. 7(1) QC TR Regulation s. 7(1) MSC TR Rule s.7(1) MI 96-101, ss. 7 and 17(2)		
5. *An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.*	OSC TR Rule, s. 7(1), (2) QC TR Regulation ss. 7(1), (2) QC QDA s. 28 MSC TR Rule s.7(1), (2) MI 96-101, ss. 7 and 17	According to the Canadian provincial securities regulators, the need to mitigate risks is inherent in establishing, implementing, maintaining and enforcing rules, procedures and policies that are designed to ensure a well-founded, clear, transparent and enforceable legal basis. However, there are no specific implementation measures consistent	

		with KC 5 since the requirement of identifying and mitigating the risks arising from any potential conflict of laws across jurisdictions is not covered.	

Principle 2: Governance **An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.**	OSC TR Rule, s. 8 QC TR Regulation s.8 and QDA s. 26 MSC TR Rule s.8 MI 96-101, s. 8	**Partly consistent** The implementation measures of the provincial securities regulators are partly consistent with Principle 2. The overall rating has been influenced by gaps and shortcomings in KC 3 and KC 6	The provincial securities regulators are recommended to implement measures which address the gaps identified with reference to KC 3 and KC 6.
1. *An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.*	OSC TR Rule, s. 8 (1) QC TR Regulation s.8 (1) and QDA s. 26 MSC TR Rule s.8(1) MI 96-101, s. 8 (1)		
2. *An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.*	OSC TR Rule, s. 8 OSC TR Rule, ss. 9, 10 QC TR Regulation, s. 8 (1) and QDA s. 26 QC TR Regulation ss. 9 and 10 MSC TR Rule s.8, 9 and 10 MI 96-101, s. 8, 9 and 10		
3. *The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board*	OSC TR Rule s. 9 QC TR Regulation s.9 MSC TR Rule s.9	According to the Canadian provincial securities regulators framework a designated trade repository must establish, implement and maintain written governance arrangements that	

should review both its overall performance and the performance of its individual board members regularly.	MI 96-101 s. 9	set out a clear organisational structure with consistent lines of responsibility. A designated trade repository must have a board of directors. The board of directors of a designated trade repository must, in consultation with the chief compliance officer of the designated trade repository, resolve conflicts of interest identified by the chief compliance officer. However, the wording of the requirements corresponding to KC 3 does not reach the specificity of this key consideration. Furthermore a gap is created by the lack of explicit requirements in the regulation that "The board should review both its overall performance and the performance of its individual board members regularly".	
4. *The board 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).*	OSC TR Rule s. 9 QC TR Regulation s.9 MSC TR Rule s.9 MI 96-101 s. 9		
5. *The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.*	OSC TR Rule s. 10 QC TR Regulation s.10 MSC TR Rule s.10 MI 96-101 s. 10		
6. *The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance*	OSC TR Rule, ss. 8, 10 OSC TR Rule, s. 19 QC TR Regulation ss. 8 and 10	According to the Canadian provincial securities regulators, the TR regulations do not reach the specificity of this key consideration. Nevertheless, they would expect that	

arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.	QC TR Regulation s.19 MSC TR Rule ss. 8, 10 and 19 MI 96-101 s. 8, 10, 17 and 19	KC 6 is followed as part of the compliance with the relevant framework. However a gap is identified in the absence of specific implementation measures covering all aspects of KC 6.	
7. The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.	OSC TR Rule, s. 8(1)(g) QC QDA s. 26 MSC TR Rule s. 8(1)(g) MI 96-101, s. 8(1)		

Principle 3: Framework for the comprehensive management of risks **An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.**	OSC TR Rule, s. 19 OSC TR Rule. s. 20 QC TR Regulation ss.19 and 20 MSC TR Rule ss.19 and 20 MI 96-101, ss. 19 and. 20	**Consistent**	
1. An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.	OSC TR Rule, s. 19, 20(1) QC TR Regulation ss. 19 and 20(1) MSC TR Rule ss.19 and 20(1) MI 96-101, ss. 19, 20		
2. An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	OSC TR Rule: See responses in connection with Principle 17 QC TR Regulation: See responses in connection with Principle 17 QC QDA s. 28	The provincial securities regulators consider the primary risks that participants pose to the TRs to be operational in nature. Accordingly, they believe as appropriate to reference also the provisions related to identifying, preventing and mitigating operational risks.	

	MSC TR Rule – See responses in connection with Principle 17 MI 96-101: See responses in connection with Principle 17		
3. *An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.*	OSC TR Rule Companion Policy guidance for s. 19 QC TR Policy Statement for s.19 MSC TR CP guidance for s.19 MI 96-101 ss 19, 20 MI 96-101 Companion Policy for section 19		
4. *An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.*	OSC TR Rule ss. 20(4), (5), (6) QC TR Regulation ss. 20(4), (5), (6) MSC TR Rule ss.20(4), (5), (6) MI 96-101 ss. 20(4), (5), (6) and 21		

Principle 15: General business risk **An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.**	OSC TR Rule, ss. 20(1), (2), (3), (4) OSC TR Rule Companion Policy guidance for ss. 20(1) QC TR Regulation and Policy Statement for ss. 20(1) (2), (3), (4) QC QDA s.30 MSC TR Rule and CP guidance for ss. 20(1) (2), (3), (4)	**Broadly consistent** The implementation measures of the provincial securities regulators are broadly consistent with Principle 15. The overall rating has been influenced by the absence of measures implementing KC 5.	The provincial securities regulators are recommended to implement measures which address the gaps identified in KC 5.

	MI 96-101, s. 20 MI 96-101 Companion Policy, s 20		
1. *An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.*	OSC TR Rule/Companion Policy Guidance, s. 20(1) QC TR Policy Statement for s. 20(1). QC QDA s.30 MSC TR Rule and CP guidance for s.20(1). MI 96-101, s. 20 MI 96-101 Companion Policy, s 20		
2. *An FMI 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 an FMI 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.*	OSC TR Rule/Companion Policy Guidance, ss. 20(1), (2), (3) QC TR Regulation and Policy Statement for ss. 20(1), (2), (3) QC QDA s.30 MSC TR Rule and CP guidance for ss.20(1), (2) and (3) MI 96-101, ss. 20(2), (3) MI 96-101 Companion Policy, s 20(2)		
3. *An FMI 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, an FMI 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.*	OSC TR Rule/Companion Policy Guidance, s. 20(1), (2), (3), (4) QC TR Regulation and Policy Statement for ss. 20(1), (2), (3), (4) QC QDA s.30 MSC TR Rule and CP guidance for s.20(1), (2), (3) and (4) MI 96-101, ss. 20 MI 96-101 Companion Policy, s 20		

4. *Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.*	OSC TR Rule, ss. 20(2), (3) QC TR Regulation ss. 20(2), (3) QC QDA s. 30 MSC TR Rule, ss. 20(2), (3) MI 96-101, ss. 20(2), (3)		
5. *An FMI 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.*	OSC TR Rule/Companion Policy guidance, s. 20(4) QC TR Policy Statement for s. 20(4) QC QDA s. 30 MSC TR Rule and CP guidance for s.20(4) MI 96-101, ss. 20(4), (5)	According to the provincial securities regulators the TR rules/regulations do not reach the specificity of this key consideration. Nevertheless, they would expect that KC 5 is followed as part of the compliance with the relevant parts of the framework. However there is a gap in the absence of specific provisions requiring the TR to maintain a plan for raising additional equity approved by the board of directors and updated regularly.	

Principle 17: Operational risk **An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.**	OSC TR Rule, ss. 21(1), (3)(a), (4), (5) OSC TR Rule Companion Policy guidance for s. 21(1) QC TR Policy Statement for s. 21(1) QC TR Regulation ss. 21(1), (3)(a), (4), (5). QC QDA s. 27 MSC TR Rule ss 21(1), 3(a), (4) and (5) MSC TR CP guidance for s 21(1) MI 96-101, ss. 21(1), (2), (4), (5), (6)	**Consistent**	

1. *An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.*	OSC TR Rule, s. 21(1) QC TR Regulation s. 21(1) QC QDA s. 28 MSC TR Rule s 21(1) MI 96-101, s 21(1)		
2. *An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.*	OSC TR Rule, ss. 8, 9, 10 OSC TR Rule, ss. 21(2), (5), (6), (7) OSC TR Rule Companion Policy guidance for ss. 21(2), (5), (6) QC TR Regulation ss. 8, 9 and 10 QC TR Regulation ss. 21(2), (5), (6), (7) and QC TR Policy Statement for ss. 21(2), (5), (6) MSC TR Rule ss 8, 9 and 10 MSC TR Rule ss 21(2), (5, (6) and (7) and MSC CP guidance for ss 21(2), (5), and (6) MI 96-101 ss.8, 9, 10, 17 and 21(2), (5), (6)		
3. *An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*	OSC TR Rule Companion Policy guidance for s. 21(1) QC TR Regulation Policy Statement for s. 21(1) MSC TR Rule CP guidance MI 96-101, s. 21 MI 96-101 Companion Policy, s 21(1)		

4. An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	OSC TR Rule, ss. 21(3)(b) QC TR Regulation s. 21(3)(b) MSC TR Rule s 21(3)(b) MI 96-101, s 21(3)		
5. *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*	OSC TR Rule, s. 21(3)(a). OSC TR Rule, s. 22: QC TR Regulation ss. 21(3)(a) and 22 MSC TR Rule ss. 21(3)(a) and 22. MI 96-101, s 21(3)(a) and s. 22(1)		
6. An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.	OSC TR Rule, ss. 21(1), (4), (5) OSC TR Rule Companion Policy guidance for ss. 21(4) OSC TR Rule Companion Policy guidance for ss. 21(5), (6) QC TR Regulation ss. 21(1), (4), (5) and Policy Statement for s. 21(4) MI 96-101, ss. 21(1), (2), (4), (5), (6) MI 96-101 Companion Policy, ss. 21(4), (5), (6)		
7. An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.	OSC TR Rule, s. 21 OSC TR Rule, s. 24 QC TR Regulation ss.21 and 24 QDA s. 28, 31 MSC TR Rule ss. 21 and 24 MI 96-101, ss. 21.and 24		

Principle 18: Access and participation requirements **An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.**	OSC TR Rule, s. 13(1) QC TR Regulation s.13(1) MSC TR Rule s. 13(1) MI 96-101, s. 13(1)	**Consistent**	
1. *An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.*	OSC TR Rule, s. 13(1) OSC TR Rule, s. 13(3) QC TR Regulation ss.13(1) and (3) MSC TR Rule ss. 13 (1) and (3) MI 96-101, ss. 13(1) and (3)		
2. *An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.*	OSC TR Rule, ss. 13(1), (2) and (3) QC TR Regulation ss.13(1), 13(2) and 13(3) MSC TR Rule ss. 13 (1), 13(2) and 13(3) MI 96-101, ss. 13(1), (2) and (3)		
3. *An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.*	OSC TR Rule, ss. 16, 17 QC TR Regulation ss.16 and 17(1), (2), (3), and (4) QC QDA s. 26 QC QDA s. 14 MSC TR Rule ss.16 and 17(1), (2), (3), (4) and (5) MI 96-101, ss. 16, 17		

Principle 19: Tiered participation arrangements **An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.**	No specific provisions in the local rules or MI 96-101. Companion Policies state that "the trade repository may be expected to observe or broadly observe the principles, where applicable."	**Not consistent** The implementation measures of the provincial securities regulators are not consistent with Principle 19. The overall rating has been influenced by the fact that the regulatory framework does not include specific corresponding rules covering tiered participation but a general reference of the Companion Policy, which is non-binding and serves as guidance only in the case where underlying rules exist.	The provincial securities regulators are recommended to implement measures which address the gaps identified.
1. *An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.*		A TR is not required to ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage related risks.	
2. *An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*		The material dependencies between direct and indirect participants are not covered in the regulatory framework.	
3. *An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.*		A TR is not required to identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.	

4. *An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*		The requirement for TRs to regularly review the risks arising from tiered participation is not covered in the regulatory framework.	

Principle 20: FMI links **An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.**	No specific provisions in the local rules or MI 96-101. Companion Policies state that "the trade repository may be expected to observe or broadly observe the principles, where applicable."	**Not consistent** The implementation measures of the provincial securities regulators are not consistent with Principle 20. The overall rating has been influenced by the fact that the regulatory framework does not include specific corresponding rules covering FMI links but a general reference of the Companion Policy, which is non-binding and serves as guidance only in the case where underlying rules exist.	The provincial securities regulators are recommended to implement measures which address the gaps identified.
1. *Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.*		A TR is not required to design a link arrangement in order to ensure that each FMI is able to observe the other principles in this report.	
2. *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.*		A TR is not required to ensure that 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.	
9. *A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.*		A TR is not required to assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.	

Principle 21: Efficiency and effectiveness **An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.**	No specific provisions in the local rules or MI 96-101. Companion Policies state that "the trade repository may be expected to observe or broadly observe the principles, where applicable."	**Not consistent** The implementation measures of the provincial securities regulators are not consistent with Principle 21. The overall rating has been influenced by the fact that the regulatory framework does not include specific corresponding rules covering efficiency and effectiveness but a general reference of the Companion Policy, which is non-binding and serves as guidance only in the case where underlying rules exist.	The provincial securities regulators are recommended to implement measures which address the gaps identified.
1. *An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.*		A TR is not required to address all the aspects included in this KC.	
2. *An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.*		A TR is not required to 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.	
3. *An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*		A TR is not required to establish mechanisms for the regular review of its efficiency and effectiveness.	

Principle 22: Communication procedures and standards **An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.**	OSC TR Rule, s. 15 QC TR Regulation s.15 MSC TR Rule s.15 MI 96-101, s. 15	**Consistent**	
1. *An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.*	OSC TR Rule, s. 15 QC TR Regulation s.15 MSC TR Rule s.15 MI 96-101, s. 15		

Principle 23: Disclosure of rules, key procedures, and market data **An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.**		**Consistent**	
1. *An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.* 2. *An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.*	OSC TR Rule, ss. 17(1), (4) QC TR Regulation ss. 17(1) and (4) MSC TR Rule ss.17(1) and (4) MI 96-101, ss. 17(1), (5) OSC TR Rule, ss. 17(1), (4) OSC TR Rule Companion Policy guidance for s. 17 OSC TR Rule, ss. 21(8), (9), (10) QC TR Regulation ss. 17(1) and (4), 21(8)-(10) and Policy Statement for		

	s.17 MSC TR Rule and CP guidance for ss.17(1) and (4), 21(8)-(10) MI 96-101, ss. 17(1), (5) MI 96-101 Companion Policy, s. 17 MI 96-101, ss. 21(8), (9), (10)		
3. *An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.*	OSC TR Rule, ss. 17(4), (5) OSC TR Rule, Form 91-507F1 (Application for Designation TR Information Statement), Exhibit E, item 9 QC TR Regulation s. 17(4) QC QDA s. 14 QC TR Regulation, Form 91-507F1 (Application for Recognition Trade Repository Information Statement), Exhibit E, item 9 MSC TR Rule ss. 17(4) and 17(5) MSC TR Rule, Form 91-507F1 MI 96-101, ss. 17(4), (5) MI 96-101, Form 91-507F1 (Application for Designation TR Information Statement), Exhibit E, item 9		
4. *An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.*	OSC TR Rule, s. 12 QC TR Regulation s. 12 MSC TR Rule s. 12 MI 96-101, s 12		

5. *An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*	OSC TR Rule, ss. 17(1), (4) OSC TR Rule Companion Policy guidance for s. 17 QC TR Regulation ss. 17(1), (4) and Policy Statement for s. 17 MSC TR Rule and CP guidance ss. 17(1), (4) MI 96-101, ss. 17(1), (4), (5) MI 96-101 Companion Policy, s. 17		

Principle 24: Disclosure of market data by trade repositories **A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.**	OSC TR Rule, Part 4 (generally); in particular, ss. 37(1), (3), 38(1), 39 MSC TR Rule ss 37(1), 37(3), 38(1) and 39 MI 96-101, ss. 37, 38(1), 39	**Consistent**	
1. *A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.*	OSC TR Rule, ss. 37(1), (3) OSC TR Rule, s. 37(2) OSC TR Rule, Appendices A, C QC TR Regulation ss. 37 (1), 37(2), 37(3), and Appendices A, C QC QDA ss. 36, 37 MSC TR Rule ss 37(1), 37(2) and 37(3) with Appendices A and C MI 96-101 s. 37		
2. *A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their*	OSC TR Rule, s. 37, Appendices A, C OSC TR Rule, s. 18		

	respective regulatory mandates and legal responsibilities.	QC TR Regulation ss. 37, 18 and Appendices A, C QC QDA ss. 36, 37 MSC TR Rule ss. 37, 18 and Appendices A, C MI 96-101, s. 37 MI 96-101 Companion Policy, s. 37(1) MI 96-101, s. 18(1):		
3.	*A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analysed.*	OSC TR Rule, ss. 37, 18 QC TR Regulation ss. 37, 18 QC QDA ss. 36, 37 MSC TR Rule ss. 37, 18 MI 96-101, s 37 MI 96-101 Companion Policy, s. 37(1) MI 96-101, s. 18		

Annex A: List of abbreviations

ASC	Alberta Securities Commission
AM	Assessment methodology
AMF	Autorité des marchés financiers
AT	Assessment team
BCSC	British Columbia Securities Commission
BoC	Bank of Canada
CP Act	Canadian Payments Act
CCP	Central counterparty
CPMI	Committee on Payments and Market Infrastructures
CPSS	Committee on Payment and Settlement Systems
CSA	Canadian Securities Administrators
CSD	Central securities depository
FMI	Financial market infrastructure
FSB	Financial Stability Board
IMSG	Implementation Monitoring Standing Group
IOSCO	International Organization of Securities Commissions
MSC	Manitoba Securities Commission
OSC	Ontario Securities Commission
PAC	Payments Advisory Committee
PCSA	Payments Clearing and Settlement Act
PFMI	Principles for financial market infrastructures
PS	Payment system
SSS	Securities settlement system
TR	Trade repository

Annex B: Reference documents

Payment Clearing and Settlement Act,
http://laws-lois.justice.gc.ca/PDF/P-4.4.pdf

The Canadian Payments Act,
http://laws-lois.justice.gc.ca/eng/acts/C-21/

The Bank of Canada's risk-management standards for designated FMIs,
www.bankofcanada.ca/core-functions/financial-system/bank-canada-risk-management-standards-systemic-fmis/

Guideline Related to Bank of Canada Oversight Activities under the Payment Clearing and Settlement Act,
www.bankofcanada.ca/core-functions/financial-system/oversight-designated-clearing-settlement-systems/guideline-related-oversight-activities/

National Instrument 24-102 *Clearing Agency Requirements* and related Companion Policy 24-102,
www.osc.gov.on.ca/en/46657.htm

Memorandum of Understanding Respecting the Oversight of Certain Clearing and Settlement Systems among: Bank of Canada, Ontario Securities Commission, Autorité des marchés financiers and British Columbia Securities Commission,
www.bankofcanada.ca/wp-content/uploads/2014/04/memorandum-understanding-mou.pdf

Ontario Securities Commission, *Rule 91-507 Trade Repositories and Derivatives Data Reporting*,
www.osc.gov.on.ca/en/SecuritiesLaw_91-507.htm

Autorité des marchés financiers, *Regulation 91-507 respecting Trade Repositories and Derivatives Data Reporting*,
https://lautorite.qc.ca/en/professionals/regulations-and-obligations/derivatives/91-507-trade-repositories-and-derivatives-data-reporting/

Manitoba Securities Commission, *Local Rule 91-507 Trade Repositories and Derivatives Data Reporting*,
https://docs.mbsecurities.ca/msc/ucv/en/item/169014/index.do?r=AAAAAQAGOTEtNTA3AQ

British Columbia Securities Commission, *Multilateral Instrument 96-101 Trade Repositories and Derivatives Data Reporting*,
www.bclaws.ca/civix/document/id/complete/statreg/203_2016

Alberta Securities Commission, *Multilateral Instrument 96-101 Trade Repositories and Derivatives Data Reporting*,
www.albertasecurities.com/Regulatory%20Instruments/5315724-96-101_MI_Consolidation_Eff_September_30_2016.pdf

CPSS-IOSCO, *Principles for financial market infrastructures*, April 2012,
www.bis.org/cpmi/publ/d101a.pdf

CPSS-IOSCO, *Principles for financial market infrastructures: disclosure framework and assessment methodology*, December 2012,
www.bis.org/publ/cpmi106.pdf

CPMI-IOSCO, *Implementation monitoring of PFMI: Fifth update to Level 1 assessment report*, July 2018,
www.bis.org/cpmi/publ/d179.pdf

CPMI-IOSCO, *Implementation monitoring of PFMI: Fourth update to Level 1 assessment report*, July 2017, www.bis.org/cpmi/publ/d166.pdf

CPMI-IOSCO, *Implementation monitoring of PFMI: Third update to Level 1 assessment report*, June 2016, www.bis.org/cpmi/publ/d145.pdf

CPMI-IOSCO, *Implementation monitoring of PFMIs: Second update to Level 1 assessment report*, June 2015,
www.bis.org/cpmi/publ/d129.pdf

CPSS-IOSCO, *Implementation monitoring of PFMIs: First update to Level 1 assessment report*, May 2014, www.bis.org/publ/cpmi117.pdf

CPSS-IOSCO, *Implementation monitoring of PFMIs – Level 1 assessment report*, August 2013, www.bis.org/publ/cpmi111.pdf

CPMI-IOSCO, *Application of the* Principles for financial market infrastructures *to central bank FMIs*, August 2015,
www.bis.org/cpmi/publ/d130.htm

CPMI-IOSCO, *Assessment and review of application of Responsibilities for authorities*, November 2015, www.bis.org/cpmi/publ/d139.htm

Annex C: FMIs subject to the Principles in Canada[39]

Systemically important PSs

- Large Value Transfer System (LVTS)
- CLS Bank

CCPs

- Canadian Derivatives Clearing Service (CDCS)
- SwapClear (LCH.Clearnet)

CSDs/SSSs

- CDSX[40]

TRs

- Chicago Mercantile Exchange Inc. (CME)
- DTCC Data Repository (U.S.) LLC (DDR)
- ICE Trade Vault, LLC (ICE TV)

[39] The FMIs listed have been designated by the Canadian authorities. CLS Bank, SwapClear and the TRs mentioned are not based in Canada.

[40] CDS Clearing and Depository Services Inc (CDS), which owns and operates CDSX, also operates a CCP service for eligible exchange-traded and OTC equity transactions. This service is subject to the Principles that apply to CCPs.