BANK OF CANADA
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Policy guidance on the Bank of Canada's risk-management standards for designated financial market infrastructures

Standard 7: Liquidity Risk

Issue

The CPMI-IOSCO Principles for Financial Market Infrastructures (the Principles)[1] define liquidity risk as risk that arises when the financial market infrastructure (FMI), its participants or other entities cannot settle their payment obligations when due as part of the clearing or settlement process. This note provides additional guidance for Canadian FMIs to meet the components of the liquidity-risk principle related to: (i) maintaining sufficient liquid resources and (ii) qualifying liquid resources. This guidance was prepared jointly by the Bank of Canada and the Canadian Securities Administrators to supply additional clarity on certain aspects of these new standards within the Canadian context.

(i) Maintaining sufficient liquid resources

An FMI should maintain sufficient qualifying liquid resources to cover its liquidity exposures to participants with a high degree of confidence. An FMI should maintain additional liquid 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 generate the largest aggregate liquidity obligation for the FMI in extreme but plausible conditions. Liquidity stress testing should be performed on a daily basis. An FMI should verify that its liquid resources are sufficient through comprehensive stress testing conducted at least monthly.[2]

The information provided in this section clarifies regulators' expectations of sufficient qualifying liquid resources by specifying:

1) the degree of confidence required to cover liquidity exposures;
2) the total liquid resources that should be maintained; and
3) how the FMI should verify that its liquid resources are sufficient and adjust liquid resources when necessary.

1) Qualifying liquid resources should meet an established single-tailed confidence level of at least 97 per cent with respect to the estimated distribution of potential liquidity exposures.[3] The FMI

[1] Committee on Payment and Market Infrastructures and Technical Committee of the International Organization of Securities Commissions (CPSS-IOSCO), "Principles for Financial Market Infrastructures" (April 2012).
[2] The guidance for maintaining sufficient liquid resources is based on Principle 7 - Key Considerations3, 5, 6 and 9.
[3] A "potential liquidity exposure" is defined as the estimated maximum daily liquidity needs resulting from the market value of the FMI's payment obligations under normal business conditions. FMIs should consider potential liquidity exposures over a rolling one-year time frame.

should have an appropriate method for estimating potential exposures that accounts for the design of the FMI and other relevant risk factors.

The guidance requires a high threshold for covering liquidity exposures with qualifying liquid resources, while also considering the expense associated with obtaining these resources. A 97 per cent degree of confidence is equivalent to less than one observation per month (on average) in which a liquidity exposure is greater than the FMI's qualifying liquid resources. However, if it is to meet the required threshold, the FMI should estimate its potential liquidity exposures accurately. The FMI should account for all relevant predictive factors when estimating potential exposures. While historical exposures are expected to form the basis of estimated potential exposures, the FMI should account for the impact of new products, additional participants, changes in the way transactions settle or other relevant market-risk factors.

2a) An FMI should maintain additional liquid resources that are sufficient to cover a wide range of potential stress scenarios. Total liquid resources should cover the FMI's largest potential exposure under a variety of extreme but plausible conditions. The FMI should have a liquidity plan that justifies the use of other liquid resources and provides the supporting rationale for the total liquid resources that it maintains.

The guidance requires that total liquid resources be determined by the largest potential exposure in extreme but plausible conditions. This implies maintaining total liquid resources sufficient to cover at least the FMI's largest observed liquidity exposures, but the liquidity resources would likely be larger, based on an assessment of potential liquidity exposures in extreme but plausible conditions. The FMI's liquidity plan should explain why the FMI's estimated largest potential exposure is an accurate assessment of the FMI's liquidity needs in extreme but plausible conditions, thereby demonstrating the adequacy of the FMI's total liquid resources.

It is permissible for an FMI to manage this risk in part with other liquid resources because it may be prohibitively expensive, or even impossible, for the FMI to obtain sufficient qualifying liquid resources. FMIs face increased risk from liquid resources that do not meet the strict definition of "qualifying," and thus an FMI should include in its liquidity plan a clear explanation of how these resources could be used to satisfy a liquidity obligation. This additional explanation is warranted in all cases, even when the FMI's dependence on other liquid resources is minimal.

2b) When applicable, the possibility that a defaulting participant is also a liquidity provider should be taken into account.

Generally, the liquidity providers for Canadian FMIs are also participants in the FMI. When a defaulting participant is also a liquidity provider, it is important that the FMI's liquidity facilities are arranged in such a way that it has sufficient liquidity. To do so, the FMI should either have additional liquid resources or negotiate a backup liquidity provider, so that the FMI has sufficient liquidity (as specified in this guidance) in the event that one of its liquidity providers defaults.

3) **FMIs should perform liquidity stress testing on a daily basis to assess their liquidity needs. At least monthly, FMIs should conduct comprehensive stress tests to verify the adequacy of their total liquid resources and to serve as a tool for informing risk management. Stress-testing results should be reviewed by the FMI's risk-management committee and reported to regulators on a regular basis.**

   FMIs should have clear procedures to determine whether their liquid resources are sufficient and to adjust their available liquid resources when necessary. A full review and potential resizing of liquid resources should be completed at least annually.

   The annual validation of an FMI's model for managing liquidity risk should determine whether its stress testing follows best practices and captures the potential risks faced by the FMI.

FMIs should assess their liquidity needs through stress testing that includes the measurement of the largest daily liquidity exposure that they face. FMIs should also conduct stress testing to verify whether their liquid resources are sufficient to cover potential liquidity exposures under a wide range of stress scenarios. An annual full review and potential resizing of liquid resources provides adequate time to negotiate with liquidity providers. While it may be impractical for FMIs to frequently obtain additional liquid resources, it is important that FMIs clearly define the circumstances requiring prompt adjustment of their available liquid resources, and have a reliable plan for doing so. Establishing clear procedures provides transparency regarding an FMI's decision-making process and prevents the FMI from delaying required increases in liquid resources beyond what is reasonably acceptable. The review of stress-testing results by the FMI's risk-management committee provides additional assurance that liquid resources are sufficient, and whether an interim resizing is necessary. Reporting results to regulators on a monthly basis allows for timely intervention if liquid resources have been deemed inadequate.

Comprehensive stress testing should also encompass a broad range of stress scenarios, not just to verify whether the FMI's liquid resources are sufficient, but also to identify potential risk factors. Reverse stress testing, more extreme stress scenarios, valuation of liquid assets and focusing on individual risk factors (e.g., available collateral) all help to inform the FMI of potential risks. The annual validation of the FMI's risk-management model enables it to fully assess the appropriateness of the stress scenarios conducted and the procedures for adjusting liquid resources.

(ii) Qualifying liquid resources

Qualifying liquid resources should be highly reliable and have same-day availability. Liquid resources are reliable when the FMI has near certainty that the resources it expects will be available when required. Qualifying liquid resources should be available on the same day that they are needed by the FMI to meet any immediate liquidity obligation (e.g., a participant's default). Qualifying liquid resources that are denominated in the same currency as the FMI's exposures count toward its minimum liquid-resource requirement.[5]

The following section clarifies regulators' expectations as to what is considered a qualifying liquid resource by:

1) identifying the assets in the possession, custody or control of the FMI that are considered qualifying liquid resources; and
2) setting clear standards for liquidity facilities to be considered qualifying liquid resources, including more-stringent standards for uncommitted liquidity facilities.

1) Cash and treasury bills[6] in the possession, custody or control of an FMI are qualifying liquid resources for liquidity exposures denominated in the same currency.[7]

Cash held by an FMI does not fluctuate in value and can be used immediately to meet a liquidity obligation, thereby satisfying the criteria for liquid resources to be highly reliable and available on the same day.[8] Treasury bills issued by the Government of Canada or the U.S. Treasury also meet the definition of a qualifying liquid resource. By market convention, sales of treasury bills settle on the same day, allowing funds to be obtained immediately, whereas other bonds can settle as late as three days after the date of the trade. Treasury bills can also be transacted in larger sizes with less market impact than most other bonds. In addition, the shorter-term nature of treasury bills makes them more liquid than other securities during a crisis (i.e., they benefit from a "flight to liquidity"). Thus, there is a high degree of certainty that the FMI would obtain liquid resources in the amount expected following the sale of treasury bills.

2a) Committed liquidity facilities are qualifying liquid resources for liquidity exposures denominated in the same currency if the following criteria are met:

(i) facilities are pre-arranged and fully collateralized;

[5] The guidance for qualifying liquid resources is based on Principle 7 – Key Considerations 4, 5 and 6.
[6] "Treasury bills" refers to bonds issued by the Government of Canada and the U.S. Treasury with a maturity of one year or less.
[7] This section refers to unencumbered assets free of legal, regulatory, contractual or other restrictions on the ability of the FMI to liquidate, sell, transfer or assign the asset.
[8] "Cash" refers to currency deposits held at the issuing central bank and at creditworthy commercial banks. "Value" in this context refers to the nominal value of the currency.

(ii) **there is a minimum of three independent liquidity providers;**[9] **and**

(iii) **the FMI conducts a level of due diligence that is as stringent as the risk assessment completed for FMI participants.**

For liquidity facilities to be considered reliable, an FMI should have near certainty that the liquidity provider will honour its obligation. Pre-arranged liquidity facilities provide clarity on terms and conditions, allowing greater certainty regarding the obligations and risks of the liquidity providers. Pre-arranged facilities also reduce complications associated with obtaining liquidity, when required. Furthermore, a liquidity provider is most likely to honour its obligations when lending is fully collateralized. Therefore, only the amount that is collateralized will be considered a qualifying liquid resource. A liquidity facility is more reliable when the risk of non-performance is not concentrated in a single institution. By having at least three independent liquidity providers, the FMI would continue to diversify its risks should even a single provider default. To monitor the continued reliability of a liquidity facility, the FMI should assess its liquidity providers on an ongoing basis. In this respect, an FMI's risk exposures to its liquidity providers are similar to the risks posed to it by its participants. Therefore, it is appropriate for the FMI to conduct comparable evaluations of the financial health of its liquidity providers to ensure that the providers have the capacity to perform as expected.

2b) Uncommitted liquidity facilities are considered qualifying liquid resources for liquidity exposures in Canadian dollars if they meet the following additional criteria:

(i) the liquidity provider has access to the Bank of Canada's Standing Liquidity Facility (SLF);

(ii) the facility is fully collateralized with SLF-eligible collateral; and

(iii) the facility is denominated in Canadian dollars.

More-stringent standards are warranted for uncommitted facilities because a liquidity provider's incentives to honour its obligations are weaker. However, the risk that the liquidity provider will be unwilling or unable to provide liquidity is reduced by the requirement that it needs to be a direct participant in the Large Value Transfer System and that the collateral be eligible for the Standing Liquidity Facility (SLF). This is because the collateral obtained from the FMI in exchange for liquidity can be pledged to the Bank of Canada under the SLF. This option significantly reduces the liquidity pressures faced by the liquidity provider that could interfere with its ability to perform on its obligations. A facility in a foreign currency would not qualify because the Bank does not lend in currencies other than the Canadian dollar. The increased reliability of liquidity providers with access to routine credit from the central bank is recognized explicitly within the Principles

[9] The Liquidity providers should not be affiliates to be considered independent.