

Establishing a Resolution Regime for Canada's Financial Market Infrastructures

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- The continuous operation of financial market infrastructures (FMIs), including payment clearing and settlement systems, is crucial to the Canadian financial system and the economy more broadly.
- The Bank of Canada, in cooperation with federal and provincial authorities, has developed a resolution regime for FMIs that will protect critical services and avoid the need for a public bailout in the highly unlikely event of an FMI failure.
- This work is part of the G20 commitment to establish effective resolution regimes for systemically important institutions such as banks, insurance companies and FMIs.
- The Bank will become the resolution authority for FMIs. It will coordinate FMI resolution planning in normal times with provincial and federal authorities. Should a crisis materialize with an FMI, the Bank will take timely actions to preserve financial stability.
- Developing appropriate mechanisms to facilitate coordination both before and after a resolution event, as well as sharing sensitive information among authorities, will be a priority.

Introduction

Financial market infrastructures (FMIs) are the backbone of the financial system, providing essential payment clearing and settlement services to their participants, who are primarily large financial institutions. FMIs provide the infrastructure through which consumers and firms safely and efficiently purchase goods and services, make financial investments, manage risks and transfer funds. Certain FMIs are critical to the stability of the Canadian financial system and the functioning of the economy. If such an FMI were to fail, it could impair the functioning of financial markets, the ability of other financial institutions to carry out their business activities and the ability of Canadians to make or receive timely payments.

The Governor of the Bank of Canada has designated the most critical FMIs as systemically important. This means they are subject to oversight by the Bank to ensure they are adequately controlling the risk they pose to the

Box 1

Which financial market infrastructures have been designated, and what is their role?

Under the *Payment Clearing and Settlement Act*, the Governor of the Bank of Canada can designate a financial market infrastructure (FMI) for oversight by the Bank if it has the potential to pose systemic risk or payments system risk.¹

The Governor has, to date, designated for oversight three domestic systemically important FMIs and one domestic prominent payment system. They are the following:

- Large Value Transfer System (LVTS), the only system for settling large-value and time-critical Canadian-dollar payments, operated by [Payments Canada](#);
- CDSX, the only system that settles securities and maintains a central securities depository, operated by the [Canadian Depository for Securities Limited](#);
- Canadian Derivatives Clearing Service (CDCS), a central counterparty that clears transactions in certain fixed-income securities, over-the-counter (OTC) repurchase agreements, OTC equity derivatives and all derivatives traded on the Montréal Exchange, operated by the [Canadian Derivatives Clearing Corporation](#); and
- Automated Clearing Settlement System (ACSS), a retail payment system for cheques, direct deposits and pre-authorized debits, and the only designated prominent payment system. It is also operated by [Payments Canada](#).²

The Bank has also designated as systemically important two foreign-domiciled FMIs that Canadian financial institutions critically rely on to conduct their business. They are the following:

- CLS Bank, a global payment system that settles foreign exchange transactions, operated by [CLS Group](#); and
- SwapClear, a global central counterparty for interest rate swaps and other over-the-counter derivatives denominated in 18 currencies, operated by [LCH.Clearnet Ltd.](#)

Table 1-A: Canadian payments and securities in each of the designated FMIs

FMI	Daily average volume of 2017	Daily average value of 2017
LVTS	36,000	\$173 billion
CDSX	1.7 million	\$541 billion
CDCS	390,000 ^a	\$161 billion ^a
ACSS	30 million	\$28 billion
CLS Bank	39,000 ^b	\$199 billion ^b
SwapClear	\$100 billion ^c	\$12.1 trillion ^d

- a. Includes daily average repurchase agreements activity of 1.4 thousand in volume and \$27 billion in value.
- b. Captures only the activity denominated in Canadian dollars during the main session.
- c. Estimate derived from monthly volume of swaps cleared and denominated in Canadian dollar.
- d. Notional outstanding for swaps denominated in Canadian dollars, as at year-end.

1 For definitions of systemic risk and payments system risk, see “[Regulatory Oversight of Designated Clearing and Settlement Systems](#)” on the Bank’s website.

2 In May 2016, the Bank designated ACSS as having the potential to pose payments system risk. The press release is available on the [Bank’s website](#).

financial system and the economy.¹ Prominent payment systems, while not systemically important, are also critical for economic activity in Canada. They are designated by the Governor for oversight by the Bank if their disruption or failure has the potential to pose risks to Canadian economic activity and therefore affect general confidence in the payments system. **Box 1** describes the FMIs that have been designated by the Bank.

Although highly unlikely, an FMI could fail despite this oversight. To mitigate the impact of such a failure, the Bank of Canada, in cooperation with federal and provincial authorities, has worked to develop a policy framework for a Canadian resolution regime for FMIs. The purpose of a resolution regime is to ensure that tools are available to continue offering the critical services normally provided by the FMI and prevent systemic disruption to the financial system in the remote event of an FMI failure. In its 2017 budget, the federal government proposed to introduce legislative amendments to the *Payment Clearing and Settlement Act* to implement the regime and allow the Bank to intervene if an FMI were to fail. The amendments to the legislation

1 For more information, see “[Regulatory Oversight of Designated Clearing and Settlement Systems](#)” on the Bank’s website.

were drafted in consultation with key stakeholders and included in the 2018 federal budget. Once approved by Parliament, the amendments will provide the Bank of Canada with a new mandate to act as the resolution authority for Canadian FMIs.

FMI resolution is part of the package of G20 financial sector reforms. In 2011, the Government of Canada endorsed reforms to develop and implement effective resolution regimes for systemically important institutions such as banks, insurance companies and FMIs (Lai and Mordel 2012).² The Financial Stability Board (FSB) established guidance on the essential elements authorities should consider when building their national resolution regimes (FSB 2014, 2017). The main features of the Canadian FMI resolution regime described in this report have been developed in line with this international guidance, in a manner appropriate to the Canadian context and taking into account the comments received from key stakeholders during consultations.

This report explains the importance of a resolution regime for Canadian FMIs. It also describes the main features of an effective regime, including the types of FMIs to which it would apply, governance arrangements, legislative powers and tools, and funding. We conclude by briefly laying out the next steps.

The need for a resolution regime

FMIs that are designed and operated well contribute to financial stability by supporting the continuous functioning of payment systems and financial markets, which is especially important in times of severe financial stress. Central counterparties (CCPs), for example, act as intermediaries in a trade, guaranteeing that all the obligations of the trade will be honoured, even if one participant defaults. This helps prevent a market freeze in the presence of heightened counterparty risk. FMIs also reduce uncertainty in times of stress by having robust and transparent default management mechanisms in place.

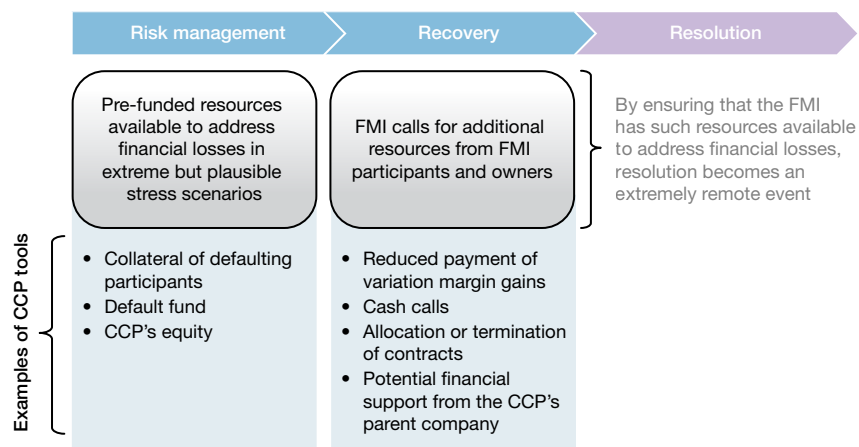
FMIs have been designed to play a central role in the financial system. However, if a systemically important FMI should fail, a disruption in its critical services could lead to significant adverse effects on the functioning of the financial system and economic activity in Canada. These FMIs are typically large, lack substitutes in the markets they serve, and have strong links to banks and other financial institutions, including other FMIs. For example, if a major payment system should fail, basic financial transactions could become difficult or impossible, and this would have a severe adverse economic impact. Furthermore, the systemic importance and the extent of risks associated with the failure of certain FMIs are growing. The greater use of central clearing, including mandatory clearing of standardized over-the-counter derivatives, is leading to a significant increase in the volume of trades cleared and creating much larger exposures for certain CCPs to manage (Mueller and Usche 2016).

Consequently, it is important for these FMIs to have robust risk controls in place that allow them to operate safely, both in normal times and during times of severe financial or operational stress.

² To date, of the G20 jurisdictions, only Australia has proposed to establish a regime specifically tailored for FMIs. The European Union and the United Kingdom have, or have proposed, a resolution regime applicable for central counterparties rather than all types of FMIs. Other jurisdictions have either chosen to have a resolution regime applicable to banks and FMIs (United States, Singapore and Hong Kong) or have additional resolution-type tools available as an extension of FMI oversight (New Zealand).

As part of the Bank’s oversight, designated FMIs are required to meet the Bank’s standards for addressing financial, operational and business risk (McVanel and Murray 2012). These standards fully encompass the international standards, the *Principles for Financial Market Infrastructures*, established by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions (CPMI-IOSCO). The FMI must operate with controls to allow it to effectively manage its risks under a variety of scenarios designed to incorporate extreme but plausible stress events, including the default of its largest participant. Designated FMIs are also required to develop a recovery plan that includes tools that would allow the FMI to access additional financial resources, if this were to become necessary. For example, a CCP must have **robust risk-management** controls that cover expected losses and liquidity shortfalls with a very high degree of confidence. Pre-funded resources should be in place to cover the losses arising from the default of the single largest participant. If these resources are exhausted, the CCP will implement its recovery plan and call on its participants to contribute additional resources, as defined in this plan, and may also contribute additional resources itself (Figure 1).

Figure 1: Tools available to help a financial market infrastructure manage risk



Thus, the likelihood of an FMI failing is remote. Historically, there have been very few failures of an FMI, and these have mainly been failures of CCPs. Since 1974 there have been only three such events worldwide (Bignon and Vuillemy 2017).

Nevertheless, it remains possible that a designated FMI may find itself in a situation in which neither its risk-management actions nor its recovery plan are adequate to allow it to continue operating without disrupting the financial system. Scenarios that could potentially trigger an FMI failure include multiple participant defaults within a short period, a material loss of confidence in the FMI, a severe operational failure that cannot be resolved through business continuity arrangements, or a failure of the FMI’s parent company.

If an FMI were to become non-viable without a specialized resolution regime, there would be two unattractive choices: it would either be wound down through existing corporate bankruptcy procedures or rescued through a public bailout. Existing bankruptcy procedures are not designed to protect the stability of the financial system when a systemically important institution fails. They would likely not prevent a loss of crucial services to the financial system, which would result in the transmission of financial stress to market

participants and amplify the adverse effect of the FMI's failure on the financial system and the economy. Consequently, there may be an expectation that government intervention in the form of a public guarantee or bailout using taxpayer dollars would be forthcoming to prevent severe financial system disruptions. The absence of a resolution regime could therefore reduce the incentives for FMIs and their participants to appropriately manage their risks, creating moral hazard and a potential significant cost to taxpayers.

The main policy objectives of the regime are to maintain the critical services of an FMI, to promote financial stability and to minimize potential taxpayer exposure to loss. Although the regime shares common elements with Canada's resolution regime for systemically important Canadian financial institutions, it is tailored with specific features to reflect the unique role, structure and business model of FMIs.³

Main features of the resolution regime

Scope

All domestic designated FMIs would be included in the scope of the regime. These include the three FMIs that are designated as systemically important and ACSS, a prominent payments system. Domestic FMIs that have not been designated by the Bank are outside of the scope of the regime because their failure is less likely to cause a major disruption to the stability of the Canadian financial system. If these FMIs were unable to recover from a shock, they would be wound down or restructured under existing corporate bankruptcy procedures.

Foreign-domiciled FMIs designated to have the potential to pose systemic risk to the Canadian financial system are also out of the scope of the proposed regime. This currently includes LCH.Clearnet's SwapClear service and CLS Bank (Chande et al. 2012; Miller and Northcott 2002). Crisis management groups (CMGs) established for these FMIs are expected to set out the process for co-operation and information sharing among the home resolution authority and host jurisdictions, such as Canada, in which the FMI is systemically important.^{4,5} The CMG arrangements would apply to both a resolution event and to resolution planning. The Bank plans to work with the resolution authority and the CMG of the foreign FMIs the Bank has designated to ensure that the appropriate measures are established to effectively resolve these FMIs without creating risks to financial stability in Canada.

Governance

Transparent and effective governance arrangements are a cornerstone of a credible resolution regime and provide legal certainty to designated FMIs and their participants about how a resolution would be carried out in practice. These arrangements define the roles of Canadian authorities, establish the process by which key decisions are made, and provide a mechanism for co-operation and information sharing both in normal times and during a resolution.

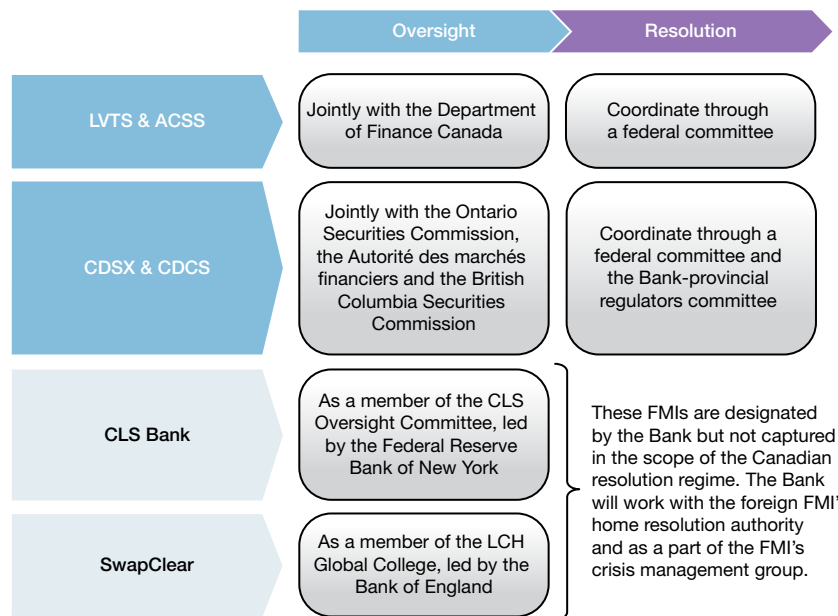
³ See Hughes and Manning (2015) and Cox and Steigerwald (2017) for a discussion of important differences between CCPs and banks that need to be considered when designing a resolution regime for CCPs.

⁴ If an FMI is systemically important in more than one jurisdiction, authorities should establish cross-border crisis management groups or, alternatively, equivalent arrangements based on Responsibility E of the CPMI-IOSCO *Principles for Financial Market Infrastructures* that are consistent with the FSB Key Attributes of Effective Resolution Regimes for Financial Institutions.

⁵ The home resolution authority for the FMI decides membership of the CMG, which should include authorities, both domestic and foreign, that can play a material role in planning for and executing a resolution of the FMI.

As the FMI resolution authority, the Bank would assume the lead role, in consultation with key stakeholders, for taking actions to resolve a failing FMI. The Bank is well placed to take on this role. As the overseer of all designated FMIs, the Bank has extensive knowledge and expertise specific to designated FMIs, including familiarity with their rules and operations. This expertise is important because the transition from recovery to resolution may take place on very short notice. The Bank would need to implement resolution actions quickly, including stepping in and overseeing the execution of the FMI's rules and meeting daily payment and settlement deadlines. The Bank's mandate to promote the safety, soundness and efficiency of the Canadian financial system provides it with the expertise to quickly assess the financial stability implications of an FMI failure and any actions that it takes to resolve the FMI. Importantly, the Bank would be able to leverage well-established oversight relationships with provincial market regulators and the supervisory authorities of foreign-domiciled FMIs as well as FMIs themselves (Figure 2).

Figure 2: The Bank of Canada co-operates with various authorities with respect to the oversight and resolution of financial market infrastructures



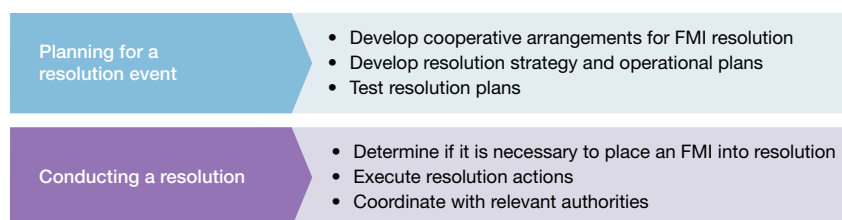
Having one institution responsible for both oversight and resolution might not be optimal if doing so distorts the incentives to invoke resolution powers when required. This might happen if, for example, the oversight authority believed that triggering resolution would be an admission of failure to effectively oversee an FMI. However, if an FMI were to fail, there would likely be little scope for such regulatory forbearance. A failure to make a timely decision to place an FMI into resolution would, in most cases, mean that critical payment and settlement deadlines would not be met, directly affecting all FMI participants and causing contagion to the broader financial system. Nevertheless, it is important for the Bank to mitigate the possibility of inappropriate regulatory forbearance through internal governance

arrangements that support, to the extent possible and appropriate, a separation of oversight and resolution responsibilities. Like Canada, many other jurisdictions have combined FMI oversight and resolution in one institution.⁶

The Bank's role as the resolution authority

Under the proposed resolution regime, the Bank will have new authorities and responsibilities under the *Payment Clearing and Settlement Act*, both in normal times and during a resolution of an FMI. Broadly, these responsibilities are related to either preparing for or conducting a resolution (Figure 3).

Figure 3: The Bank of Canada's responsibilities in planning for and conducting a resolution



One of the key decisions the Bank would make is to determine if, and when, it is necessary to place an FMI into resolution. The Bank would assess, among other things, whether the FMI has sufficient financial resources to be able to recover in a timely manner through its own actions, thus avoiding a disruption in the provision of its critical services. The preferred outcome is to allow an FMI to recover from a shock using its own recovery tools. But the Bank would have the flexibility to trigger a resolution before the FMI's recovery efforts have been exhausted. This might be necessary if the Bank judges that the FMI will be unsuccessful in its efforts or that allowing it to continue implementing its recovery plan threatens financial stability. To preserve financial stability, for example, the Bank might judge that it should prevent a CCP from making large funding demands on its members that could transmit financial stress.

The resolution authority must co-operate with provincial and federal authorities

The planned governance arrangements will allow the Bank to take actions that are timely, appropriate and consistent with the policy objectives of the regime. Furthermore, the Bank will communicate regularly with other authorities in the period leading up to and during the resolution of an FMI, consulting them on key decisions. These include decisions related to placing an FMI into resolution, choosing appropriate resolution tools, funding the resolution, planning for recovery of any public funds that have been used and planning for the FMI to exit from the resolution. Approval of the federal Minister of Finance will be required in several areas, including when temporary access to public funds is needed.

⁶ Under existing or expected authorities, the oversight and resolution of FMIs are housed under one institution in the following jurisdictions: United Kingdom (Bank of England), Australia (Reserve Bank of Australia), Singapore (Monetary Authority of Singapore), Switzerland (Swiss Financial Market Supervisory Authority), Hong Kong (Hong Kong Monetary Authority or Securities and Futures Commission, depending on the FMI) and the Netherlands (Dutch National Bank).

To support consultation, coordination and information sharing, two parallel and equally important committees will need to be established: one with provincial market regulators and another with federal authorities. The former will include provincial market regulators that have joint oversight responsibilities with the Bank over designated FMIs; currently these FMIs are CDSX and the Canadian Derivatives Clearing Service (CDCS, **Figure 2**). The federal committee will be chaired by the Governor of the Bank and include the Department of Finance Canada, the Office of the Superintendent of Financial Institutions (OSFI) and the Canada Deposit Insurance Corporation (CDIC) as members.

The Bank will be required to communicate with both committees on key decisions. For example, one scenario that could trigger an FMI's entry into resolution is the failure of one or more of the largest banks that are participants of the FMI. This would require close co-operation with the authorities responsible for the resolution and supervision of federally regulated financial institutions, CDIC and OSFI respectively. Furthermore, the Bank will need to rely on the knowledge and expertise of provincial market regulators of jointly regulated FMIs to play a key role in developing resolution strategies, testing operational plans and providing advice on returning the FMI back to long-term viability. The Bank is working with these regulators to establish a memorandum of understanding that will address resolution-specific aspects of co-operation and information sharing.

Legislative powers and tools

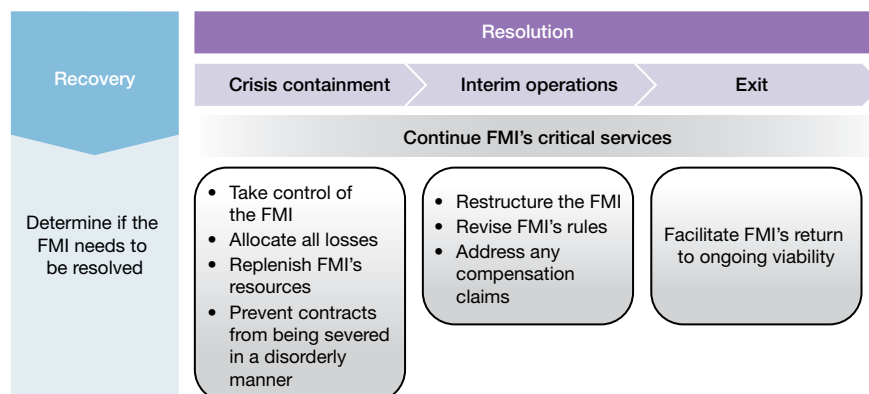
A set of powers and tools will enable the Bank to take the necessary actions to resolve the FMI in a manner that achieves the objectives of the regime. The Bank will be able to place an FMI into resolution and take control of it. Taking control of the FMI means that all the legal powers and authorities of the FMI operator's board of directors and senior management would be transferred to the Bank for the duration of the resolution process. The Bank will therefore have broad powers to direct the operations of the FMI and take resolution actions, including selling any assets of the FMI that are not essential to its core operations; restructuring the FMI, if necessary; and selling the FMI to return it to the private sector.

Some powers are needed to support the Bank's efforts to effectively resolve the FMI. As soon as an FMI enters resolution, there would be a temporary stay on some of the rights of participants and critical service providers to terminate contracts early. For FMIs that are corporate subsidiaries, this would ensure that services critical to the FMI's core functions continue to be provided by the FMI's parent. To effectively resolve a CCP, it is important that participants do not exercise their rights to terminate and close out positions before the CCP can manage the default of a participant. This is a process that the Bank may be required to implement in resolution if the CCP's attempts to do so are unsuccessful.

The powers and tools available to the Bank will allow it to take timely actions to achieve several broad outcomes:

- continue to provide the FMI's critical payment clearing and settlement services to its participants and the financial system more broadly;
- facilitate the timely settlement of obligations of the FMI;
- allocate any losses that have not yet been covered, whether this is due to the default of one or more participants or otherwise; and
- replenish the FMI's resources to meet its regulatory requirements.

Figure 4: Key actions taken by the Bank throughout a resolution event



Once the crisis has been contained and the FMI has been stabilized, the Bank would begin to facilitate the FMI's return to viability, which would include evaluating options for returning the FMI to independent operation and ending resolution. Figure 4 illustrates the stylized phases of resolution and some of the actions that the Bank could take. Some actions, such as making changes to the FMI's rules, would not be necessary in all resolution scenarios.

To allocate any uncovered losses and replenish the FMI's financial resources, the Bank would first look to the FMI's existing risk-management and recovery tools, as set out in the FMI's rules. In addition, FMI participants and owners would know exactly how losses will be allocated *ex ante* because such arrangements are prescribed in the FMI's rules.

Nevertheless, there may be circumstances under which this approach may exacerbate stress and threaten financial stability, making it necessary for the Bank to deviate from the FMI's rules. In this case, the Bank would be required to compensate any creditors, including FMI participants and owners, who were worse off than they would have been had the FMI been liquidated through bankruptcy, assuming the full application of the FMI's rules and arrangements for loss allocation.

Funding

For resolution of an FMI to be effective, the Bank will need to have reliable and timely access to sufficient financial resources to cover the costs of resolution. The funding strategy must be designed in a manner that upholds the financial stability objectives of resolution, does not undermine pre-resolution risk management and recovery, supports the continuous delivery of critical payment clearing and settlement services, and can be implemented without exposing taxpayers to loss.

To address the costs of resolution, the Bank will rely primarily on the FMI's funding arrangements in its rules and recovery plan, which provide it with the legal right to generate resources from FMI participants and owners. However, additional costs may be incurred in resolution that go beyond the types of costs for which FMIs are required to have funds. For example, the Bank may need to hire a valuation expert to assess any compensation claims or a third-party agent to assist in the sale of the FMI. Furthermore, particularly when multiple participants default, it may not be possible to ask FMI participants to mobilize resources as prescribed in the FMI rules in a timely manner without jeopardizing their viability and worsening financial stability.

If it becomes necessary to address these resolution costs, the Bank will have access to a loan from the Government of Canada. To repay the loan, the Bank will have powers to develop and enforce an *ex post* repayment mechanism to recoup public funds used for resolution purposes. Repayment would occur over time and in a manner that supports financial stability. If the FMI is facing a liquidity crisis, the FMI could rely on the Bank's [Emergency Lending Assistance \(ELA\)](#), which the Bank could decide to provide to a designated FMI as a last resort if the FMI has sufficient collateral. Although ELA could be an alternative to the temporary use of public funds, it is unlikely that an FMI entering resolution would have much collateral left to pledge to the Bank.

Canadian authorities considered creating a resolution fund that industry stakeholders would contribute to before resolution. However, designated FMIs already have significant loss-absorbing capacity for risk management and recovery. Authorities therefore concluded that asking market participants to set aside additional funds for such a remote event would be economically inefficient.

Efforts to establish and operationalize the regime in Canada continue

A credible FMI resolution regime enhances financial stability in several ways. It ensures that critical services normally provided by a failing FMI continue to be delivered even in times of severe market stress, and it strengthens incentives for FMIs and their participants to adequately manage risk. It also provides transparency and certainty to the industry on how the potential failure of an FMI would be handled by, and coordinated across, various federal and provincial authorities.

To move this regime forward, the federal government has proposed legislation for the resolution regime for Canadian FMIs. Further work is required to develop associated regulations. Once the legislation is approved by Parliament, regulations will be drafted and the regime would formally come into effect.

To implement the regime, the Bank must establish the governance arrangements with provincial market regulators and federal authorities. The governance arrangements should include an agreement to co-operate with regulators and authorities to develop credible resolution plans for each domestic designated system and to resolve an FMI under tight timelines if resolution becomes necessary. The Bank also will need to publish a guideline on FMI resolution and develop a set of policies that clarify key aspects of this regime, including the Bank's role as the resolution authority and how resolution powers and tools may be implemented under various circumstances. As part of operationalizing the regime within the Bank, sound procedures will need to be established so the Bank is fully prepared to implement resolution actions in times of crisis.

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