

Bank of Canada Oversight Activities for Financial Market Infrastructures

2024 Annual Report

May 2025

Executive summary

Financial market infrastructures (FMIs) play a central role in the financial system and thus are required to adopt robust practices to manage risk. The Bank of Canada designates and oversees FMIs operating in Canada that have the potential to pose systemic risk or payments system risk. This report outlines the Bank's key activities in 2024 for designated domestic FMIs subject to its oversight.

Over the years, the operators of designated FMIs have introduced sound controls to manage risks in their operations. The overarching objective of the Bank's core assurance reviews in 2024 was to confirm ongoing compliance with the Bank's standards and, where appropriate, to identify areas that need improvements.

For the Canadian Derivatives Clearing Service (CDCS) and the Canadian Depository for Securities (CDS), the Bank conducted core assurance reviews of governance and non-cyber operational risk. The Bank also conducted a review of credit risk for CDS only. For Payments Canada systems, the Bank undertook core assurance reviews in the areas of third-party risk management and enterprise risk management. Finally, for Interac e-Transfer®, the Bank's reviews centred on credit, liquidity, and access and tiering risks. For the Interac Inter-Member Network (IMN), they focused on cyber resilience, non-cyber operational risk, and clearing and settlement risk.

In general, the Bank found that the designated FMIs had satisfactory frameworks, policies and procedures for risk management. Nonetheless, the Bank identified risk-management areas where improvements were required to meet its standards. Accordingly, the Bank set some expectations for system operators.

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The Bank's approach to oversight of financial market infrastructures

Financial market infrastructures (FMIs), also known as clearing and settlement systems, are integral to the sound functioning of a financial system. FMIs provide critical services that allow individuals and firms to purchase goods and services, invest in financial assets and manage financial risks safely and efficiently. Because FMIs play a key role in a financial system, it is important that they adopt strong risk-management practices. This ensures they are resilient to shocks and can continue to offer services during periods of stress.

Regulatory framework

The Bank of Canada plays a central role in the regulatory framework Canada has established for FMIs. The [Payment Clearing and Settlement Act](#) provides the Governor of the Bank of Canada with the authority to designate and oversee clearing and settlement systems that have the potential to pose either systemic risk (systemically important systems) or payments system risk (prominent payment systems) in Canada.¹

The Bank's primary risk-management standards for FMIs designated as systemically important are the [Principles for Financial Market Infrastructures](#), set by the Committee on Payments and Market Infrastructures at the Bank for International Settlements and the International Organization of Securities Commissions, along with the associated guidance. For FMIs that pose payments system risk, the Bank has developed [Criteria and Risk-Management Standards for Prominent Payment Systems](#). These are based on the principles for FMIs but are proportional to the level of risk present in a prominent payment system. The Bank has also developed additional guidance for specific risk areas, such as cyber resilience.

The Bank works with federal and provincial authorities to coordinate oversight of relevant designated FMIs in Canada.² This collaboration has been formalized by

¹ The Minister of Finance must agree that designation is in the public interest. See the glossary in Appendix 2 for a full definition of systemic risk and payments system risk.

² In addition to being overseen by the Bank, the Canadian Derivatives Clearing Corporation (operator of the Canadian Derivatives Clearing Service) and the Canadian Depository for Securities Ltd. (CDS) (parent company of the operator of CDSX) are recognized and regulated by Quebec's Autorité des marchés financiers and the Ontario Securities Commission. CDS is also recognized and regulated by the British Columbia Securities Commission. Moreover, the Minister of Finance shares the responsibility of overseeing Payments Canada (operator of Lynx and the Automated Clearing Settlement System).

agreements between the Bank and relevant domestic authorities. The Bank also participates in cooperative oversight arrangements led by authorities in the jurisdictions where designated foreign-domiciled FMIs reside. **Table 1** presents the designated FMIs subject to the Bank's oversight regime.

Table 1: Designated financial market infrastructures subject to Bank of Canada oversight

System name	System operator	Designation type and year	System type and description
Domestic financial market infrastructures			
Canadian Derivatives Clearing Service (CDCS)	Canadian Derivatives Clearing Corporation (CDCC)*	Systemically important (since 2012)	CDCS is a central counterparty. It clears transactions in all derivatives trades on the Montréal Exchange and certain fixed-income securities, repurchase agreements and over-the-counter (OTC) equity derivatives.
CDSX	CDS Clearing and Depository Services Inc.†	Systemically important (since 2003)	CDSX consists of a securities settlement system, a central securities depository for equities and fixed-income securities and a central counterparty service for eligible Canadian exchange-traded and OTC equities.
Lynx	Payments Canada	Systemically important (since 2021)	Lynx is an electronic funds-transfer payment system. It settles large-value and time-critical payments.
Automated Clearing Settlement System (ACSS)	Payments Canada	Prominent (since 2016)	The ACSS is a retail payment system that clears cheques and electronic items such as pre-authorized debits, direct deposits and Interac debit payments.
Interac e-Transfer®	Interac Corp.	Prominent (since 2020)	Interac e-Transfer is an electronic payment system offered through online banking with participating Canadian financial institutions.
Interac Inter-Member Network (IMN)	Interac Corp.	Prominent (since 2023)	The IMN is an electronic payment system offering a variety of retail payment services, most notably Interac Debit.
Foreign financial market infrastructures			
Continuous Linked Settlement (CLS)	CLS Bank (CLS Group)	Systemically important (since 2002)	CLS is a special-purpose foreign exchange settlement system that settles foreign exchange transactions, including those involving the Canadian dollar.

System name	System operator	Designation type and year	System type and description
SwapClear	London Clearing House Ltd. (LCH)	Systemically important (since 2013)	LCH SwapClear is a central counterparty that clears interest rate swaps and other OTC interest rate derivatives denominated in multiple currencies, including the Canadian dollar.
VisaNet	Visa Inc.	Prominent (since 2023)	VisaNet is Visa Inc.'s core payment system processing network that provides transaction processing services (including authorization, clearing and settlement) around the world, including Canada.
Mastercard International Inc.'s Global Clearing Management System and Single Message System	Mastercard International Inc.	Prominent (since 2023)	The Global Clearing Management System and Single Message System are payment systems operated by Mastercard International Inc. for the clearing and settlement of its Canadian payments business.

* CDCC is a wholly owned subsidiary of the Montréal Exchange, which is a wholly owned subsidiary of TMX Group Ltd. (TMX Group).

† CDS Clearing and Depository Services Inc. is a wholly owned subsidiary of the Canadian Depository for Securities Ltd. (CDS), which is a wholly owned subsidiary of TMX Group.

The Bank's oversight framework for financial market infrastructures

The Bank's FMI oversight framework focuses on regular monitoring and assessment of designated FMIs against its risk-management standards. To fulfill its oversight responsibility, the Bank carries out core assurance reviews that focus on FMIs' controls and risk-management practices in specific areas. During each review, FMIs submit board-approved policies and procedures to the Bank, as well as any relevant data or information. These reviews allow the Bank to periodically assess FMIs in depth against the Bank's comprehensive set of risk-management standards.

Bank staff present the findings of the core assurance reviews along with proposed remedial actions to the Oversight Risk Advisory Committee. The role of the committee—composed of senior Bank management with expertise in FMIs, risk management and financial stability—is to challenge the staff findings and bring a strategic perspective to setting oversight expectations for designated FMIs.

Following the conclusion of this process each year, the Bank communicates its oversight expectations to the FMIs. These expectations require the FMIs to close identified gaps promptly. The Bank considers two elements in prioritizing its expectations: the level of severity of the identified gap and the relevance of the remedial measures to the safety and soundness of the FMI and the broader financial system.

In addition to undertaking core assurance reviews, Bank staff monitor risks and developments at designated FMIs. Staff also assess the risk and implications of any significant change an FMI intends to make before the FMI implements it. The FMI must report any such change to the Bank under the *Payment Clearing and Settlement Act*.

Oversight expectations for TMX Group systems

This section presents key priorities for the Canadian Derivatives Clearing Corporation (CDCC) and the Canadian Depository for Securities Ltd. (CDS), the operators of two designated FMIs owned by TMX Group. It includes updates on the focus areas identified in previous years (**Table 2**), as well as priorities identified in the Bank’s 2024 core assurance reviews.

Progress on past oversight expectations

Throughout 2024, CDCC and CDS made progress on Bank expectations related to cyber risk, liquidity risk, credit risk and other risk areas. Matters requiring further action are described in **Table 2**.

Table 2: Progress on past oversight expectations for Canadian Derivatives Clearing Corporation and Canadian Depository for Securities

System	Completed	Outstanding
Procyclicality framework		
Canadian Derivatives Clearing Service (CDCS)	<ul style="list-style-type: none"> Developed a procyclicality framework Developed and presented to clearing members a discretionary margin protocol 	<ul style="list-style-type: none"> Canadian Derivatives Clearing Corporation (CDCC) to define an acceptable level of margin procyclicality CDCC to complete the first backtesting, sensitivity and procyclicality report, based on the new methodology
Backup settlement arrangements		
CDCS		<ul style="list-style-type: none"> CDCC to propose and implement amendments to its rules requiring clearing members to have backup settlement arrangements CDCC to establish internal procedures to regularly confirm and test these backup arrangements with clearing members

System	Completed	Outstanding
Cyber risk management		
CDCS and CDSX	<ul style="list-style-type: none"> Strengthened cyber risk assessments of third-party service providers Conducted testing exercises with improved scenarios to enhance cyber response and recovery capabilities Shared findings from benchmarking exercise of operational and cyber-related participation requirements 	<ul style="list-style-type: none"> TMX to involve industry-level stakeholders in cyber recovery planning and testing TMX to finalize proposed changes to operational and cyber-related participation requirements
Liquidity risk		
CDSX	<ul style="list-style-type: none"> Presented roadmap for enhancing liquidity stress testing 	<ul style="list-style-type: none"> Canadian Depository for Securities (CDS) to conduct benchmarking, quantitative analysis and testing to enhance its framework for liquidity stress testing

Findings of core assurance reviews

The Bank undertook three core assurance reviews for CDCC and CDS in 2024. The reviews assessed the risk-management practices regarding governance, non-cyber operational risk for both CDCC and CDS, and credit risk for CDS specifically.

Governance risk

The Bank's review found that CDCC and CDS have a mature governance structure supported by robust processes, internal controls and other governance arrangements.

However, this year's review identified the absence of clearly defined governance arrangements for the use of existing emergency authorities under CDCC Rule A-208 and CDS Rule 1.5.3. The lack of clear governance arrangements for such powers could impede the FMI's ability to use them quickly, potentially exacerbating the impact from the underlying emergency. The Bank expects CDCC and CDS to identify and document roles and responsibilities for the exercise of these emergency authorities, and to conduct periodic exercises.

Non-cyber operational risk

Overall, the Bank found that CDCC's and CDS's operational risk-management frameworks are mature.

However, CDCC's and CDS's assessment of the resilience of the critical data centres to a significant operational disruption needs further improvements. The Bank expects CDCC and CDS to conduct a holistic assessment of the critical data centres' resilience to a range of extreme but plausible non-cyber disruptions. This assessment should include forward-looking risk considerations.

The Bank also found a lack of periodic testing of operational procedures for activating backup US-dollar settlement banking arrangements for CDS. The Bank expects CDS to develop a plan to regularly confirm and test the backup US-dollar settlement bank arrangements with participants.

Credit risk (CDS only)

The Bank's assessment confirmed that CDS has generally adequate credit risk-management practices.

Nonetheless, the Bank identified shortcomings related to the design of the stress-testing program and the continuous net settlement service (CNS) margin and equity haircut models. The Bank expects CDS to conduct analysis to confirm the appropriate liquidation period for the CNS stress-testing scenarios. The Bank also expects CDS to incorporate general wrong-way risk in the suite of its stress-testing scenarios and conduct comprehensive annual reviews of its stress-testing program to verify the appropriateness of the underlying assumptions and scenarios.

In 2025, CDS plans to modernize its clearing and settlement technology platform. The Bank expects that as part of this project, CDS will align its practices with the Bank's standards related to the design of its CNS margin and equity haircut models.

Other expectations

In 2024, TMX Group continued to make progress on its post-trade modernization project, which aims to develop a new technology platform for CDS's core clearing, settlement and depository functions.

Given the systemic importance of CDSX, the safe launch of the new platform remains a key priority for the Bank. In that regard, the Bank and other regulators have established formal expectations for the project that TMX Group must meet before implementing the new platform.

Oversight expectations for Payments Canada systems

This section presents key priorities for the two designated FMIs operated by Payments Canada: Lynx and the Automated Clearing Settlement System. It includes updates on the focus areas identified in previous years (**Table 3**) and priorities identified in the Bank’s 2024 core assurance reviews.

Progress on past oversight expectations

In 2024, Payments Canada addressed the Bank’s expectations related to the creation of a resilience vision, the development of a conceptual design for the Future State of Retail Batch (FSRB) system and the refinement of Lynx suspension procedures for non-federally regulated financial institutions.

Table 3: Progress on past oversight expectations for Payments Canada systems

System	Completed	Outstanding
Resilience		
Payments Canada systems	<ul style="list-style-type: none"> Created a vision for long-term resilience with a multi-year roadmap aligned with international best practices 	
Conceptual design		
Automated Clearing Settlement System—Future State of Retail Batch (FSRB)	<ul style="list-style-type: none"> Created a conceptual design to serve as a blueprint to build the FSRB. This design included centralization, automation and updated credit risk models 	
Enhanced suspension procedures		
Lynx	<ul style="list-style-type: none"> Worked with provincial regulators to develop procedures for situations where a provincial regulator assumes control of a Lynx participant or when a non-federally regulated Lynx participant is declared non-viable 	<ul style="list-style-type: none"> Payments Canada to finalize procedures in early 2025

Findings of core assurance reviews

The Bank completed two core assurance reviews of Payments Canada systems in 2024 in the areas of enterprise risk and third-party risk.

Enterprise risk management

The Bank's review found that Payments Canada has put in place policies and procedures that are generally aligned with the risk standard related to enterprise risk management.

However, Payments Canada does not yet maintain an internal audit universe. The Bank expects that, by the end of 2025, Payments Canada establish a comprehensive audit universe detailing the testing and frequency of all auditable units, in line with the audit methodology. This process should ensure that key controls are subject to regular testing for both design and operating effectiveness.

Third-party risk management

The Bank judged that Payments Canada's practices on third-party risk meet the Bank's risk standards. Nevertheless, the Bank identified some areas requiring improvement.

The review found that Payments Canada does not evaluate the operating effectiveness of controls at its critical service providers. The Bank expects Payments Canada to update its vendor risk-management framework to include a requirement for obtaining assurance over the operating effectiveness of all critical service provider controls related to payment systems annually, with related policy and documentation for exceptions.

The review also found that Payments Canada does not ensure that required controls stipulated by third-party vendors' systems are in place or operating effectively. The Bank thus expects Payments Canada to establish an annual process of mapping the required user entity controls for all critical service providers to the controls in place at Payments Canada.

Other expectations

Payments Canada announced the resumption of development work on its Real-Time Rail (RTR) payment system in April 2024. Importantly, Payments Canada has been working to ensure that when it is launched, the system complies fully with the Bank's expectations for fraud risk management in prominent payment systems. The Bank expects that by the end of 2025, Payments Canada will have finalized choices respecting the selection of centralized fraud tools and established specific tolerance levels for fraud in the system.

Payments Canada made significant progress on the FSRB and met the Bank's expectation for 2024 by developing a conceptual design that will serve as an input for the development of the FSRB. To ensure continuous progress on this work, the Bank expects Payments Canada, in 2025, to develop a comprehensive requirements document for the FSRB, covering both its functional and non-functional aspects.

Oversight expectations for Interac systems

This section presents key priorities for Interac e-Transfer and the Interac Inter-Member Network (IMN), both designated systems operated by Interac Corp. It includes updates on the focus areas identified in previous years (**Table 4**), as well as priorities identified in the Bank’s 2024 core assurance reviews.

Progress on past oversight expectations

Interac has successfully completed the Bank’s 2024 oversight expectations related to cyber resilience and business risk. It has also made progress on the expectation relating to non-cyber operational risk management.

Table 4: Progress on past oversight expectations for Interac systems

System	Completed	Outstanding
Cyber resilience strategy		
Interac e-Transfer and Interac Inter-Member Network	<ul style="list-style-type: none"> Refreshed its cyber resilience strategy 	
Recovery plan		
Interac e-Transfer	<ul style="list-style-type: none"> Developed a recovery plan 	
Reserve fund policy		
Interac e-Transfer	<ul style="list-style-type: none"> Developed a reserve fund management policy 	
Internal audit plan		
Interac e-Transfer	<ul style="list-style-type: none"> Developed a three-year internal audit plan and strategy 	<ul style="list-style-type: none"> Interac to complete a full audit cycle by end of year 2027
Critical service provider (CSP) identification and risk-management framework		
Interac e-Transfer	<ul style="list-style-type: none"> Developed a framework for CSP risk management 	<ul style="list-style-type: none"> Interac to complete identification criteria for CSPs by mid-2025

Findings of core assurance reviews

In 2024, the Bank completed six core assurance reviews for Interac systems. For Interac IMN, the Bank conducted three reviews in the areas of cyber risk, non-cyber operational risk, and clearing and settlement risk. For Interac e-Transfer, the Bank conducted three

reviews in the areas of access and tiering, credit risk and liquidity risk. The Bank completed these reviews to evaluate e-Transfer and IMN's risk-management practices against the Bank's risk-management standards for prominent payment systems.

This is the first series of core assurance reviews for IMN since its designation as a prominent payment system in October 2023. Some of the findings from these core assurance reviews are applicable to e-Transfer.

Cyber risk (IMN only)

In its review of Interac's cyber security posture, the Bank found that the cyber security strategy is supported by a comprehensive framework. This represents Interac's commitment to enterprise-wide resilience.

While Interac's controls are robust, the review found that Interac's focus on resilience for the enterprise as a whole might not necessarily ensure sufficient resilience for each designated system. The Bank expects Interac to emphasize system-centric approaches towards the protection of designated systems.

Non-cyber operational risk (IMN only)

Overall, the review found that Interac demonstrates a robust approach to enterprise-wide risk management.

However, Interac needs to enhance its focus on operational risk-management practices specific to IMN. The Bank expects that key risk-management documents should sufficiently detail IMN-specific risks and Interac's approach to managing them. Such documents include Interac's risk register, risk appetite statements and emerging risk framework.

Clearing and settlement risk (IMN only)

The Bank conducted a review of IMN clearing and settlement practices to better understand the controls to safeguard IMN transaction data from the point of exchange to clearing and settlement through Payments Canada systems.

The Bank developed no formal oversight expectations as a result of this review. However, the Bank plans to conduct further work with Interac to ensure that Interac's clearing and settlement practices align with the Bank's standards and that Interac manages payments system risk appropriately throughout the life cycle of an IMN transaction.

Access and tiering risk (e-Transfer only)

The Bank assessed Interac e-Transfer's system access policies and tiered participation risk management. The Bank found that e-Transfer has policies and processes in place to manage tiering risks, as well as risk-based access criteria.

However, while Interac has participant suspension procedures, it does not clearly define procedures to address an extreme scenario where a participant may need to be suspended immediately from a designated system (immediate suspension). The Bank

therefore expects Interac to improve its criteria, policies and procedures³ relating to immediate participant suspension.

Credit and liquidity risk (e-Transfer only)

The Bank conducted a review of Interac e-Transfer's adherence to the Bank's risk-management standards on credit and liquidity risks. Given Interac e-Transfer's current settlement model design, its participants manage these risks with minimal supervision from Interac. Therefore, Interac does not meet its obligations under both standards.

Interac is planning to transition from its current settlement model to a real-time settlement model following the release of Payments Canada's RTR payment system. This shift will largely eliminate credit and liquidity risks from the system and ensure compliance with the Bank's standards.

The Bank expects Interac to develop a framework for the settlement of e-Transfer transactions in the RTR system that is fully compliant with the Bank's credit and liquidity risk standards. The Bank also expects that Interac will monitor, measure and manage any remaining exposures.

The Bank has discussed interim measures with Interac to manage this risk in the meantime.

³ Although Interac has participant suspension procedures as part of its standard operations, its prominent role in the payment ecosystem requires it to anticipate and prepare for extreme but plausible scenarios related to immediate participant suspension.

Appendix 1 | Annual summary figures of designated financial market infrastructures

Domestic systemically important financial market infrastructures

Canadian Derivatives Clearing Service

Measure	2021	2022	2023	2024
Daily average value of over-the-counter (OTC) repos cleared	\$24 billion	\$32 billion	\$33 billion	\$39 billion
Daily average notional value cleared (exchange-traded derivatives)	\$141 billion	\$102 billion	\$140 billion	\$174 billion
Daily average notional value cleared (OTC derivatives)	\$9.7 million	\$6 million	\$8.4 million	\$17.8 million
Number of direct participants	36	37	36	33

CDSX

Measure	2021	2022	2023	2024
Daily average value of equity and fixed-income securities cleared and settled	\$846 billion	\$963 billion	\$979 billion	\$1,214 billion
Daily average volume of equity and fixed-income securities cleared and settled	2.5 million	2.5 million	2.1 million	2.2 million
Average value of securities held at the central securities depository	\$7.4 trillion	\$7.0 trillion	\$7.2 trillion	\$8.0 trillion
Number of direct participants	98	100	99	96

Lynx*

Measure	2021 [†]	2022	2023	2024
Daily average value of payments settled	\$505 billion	\$440 billion	\$414 billion	\$386 billion
Daily average volume of payments settled	46,000	50,000	53,000	55,000
Daily average value of collateral pledged	\$44 billion	\$39 billion	\$20 billion [‡]	\$25 billion
Number of direct participants	17	17	17	16

* Lynx payment statistics include settlement balances transferred between the Bank and Lynx participants, which have declined in recent years due to the Bank's quantitative tightening policies. If these transfers are excluded, the value of inter-financial institution payments has continued to increase year-over-year.

† Lynx replaced the Large Value Transfer System (LVTS) as Canada's high-value system effective August 30, 2021. Measures for 2021 were calculated using weighted averages of the days each system was in operation.

‡ "Average daily collateral pledged" now refers to the Lynx system-level credit limit. For the LVTS, collateral statistics included "excess collateral" apportioned directly to LVTS at start-of-day. In contrast, Lynx participants set their "credit limit" by assigning collateral via the Bank's High Availability Banking System (HABS) and can adjust it intraday via the HABS unallocated collateral pool. This HABS pool is not Lynx-specific and is no longer included in the Lynx measure.

Prominent payment systems

Automated Clearing Settlement System (ACSS)

Measure	2021	2022	2023	2024
Daily average value of payments processed	\$34 billion	\$36 billion	\$37 billion	\$38 billion
Daily average volume of payments processed	34 million	36 million	39 million	41 million
Number of direct participants	12	13	13	12

Interac e-Transfer®

Measure	2021	2022	2023	2024
Daily average value of payments processed	\$896 million	\$1.0 billion	\$1.3 billion*	\$1.5 billion
Daily average volume of payments processed	2.66 million	2.92 million	3.34 million	3.89 million
Number of participants	29	31	35	37 [†]

* Revised to correct a data error. Interac e-Transfer daily payments value for 2023 had been erroneously reported as \$2.3 billion in the *Bank of Canada Oversight Activities for Financial Market Infrastructures—2023 Annual Report* (published March 2024).

† Interac e-Transfer has 37 participants, of which 21 connect directly to the network and 16 connect indirectly.

Interac Inter-Member Network (IMN)*

Measure	2023	2024
Daily average value of payments processed	\$820 million	\$824 million
Daily average volume of payments processed	18 million	18 million
Number of participants	44	43 [†]

* IMN value and volume figures reflect the sum of activity from Interac's Debit, Flash and Mobile/Token Service Provider services.

[†] Interac IMN has 43 participants, of which 16 connect directly to the network and 27 connect indirectly.

VisaNet*

Measure	2023	2024
Daily average value of payments processed*	\$1.3 billion	\$1.4 billion
Daily average volume of payments processed*	15 million	17 million
Number of Canadian participants [†]	37	40

* VisaNet value and volume statistics reflect Visa purchase transactions processed in Canada as measured by acquirer activity.

[†] Includes issuers and acquirers as defined by Visa.

Mastercard*

Measure	2023	2024
Daily average value of payments processed	\$879 million	\$924 million
Daily average volume of payments processed	11 million	11 million
Number of Canadian participants [†]	40	41

* Mastercard value and volume statistics reflect Mastercard purchase transactions processed in Canada as measured by acquirer activity.

[†] Includes issuers and acquirers as defined by Mastercard.

Foreign-domiciled systemically important financial market infrastructures

Continuous Linked Settlement (CLS)

Measure	2021	2022	2023	2024
Daily average foreign exchange settlement value (total, USD)	\$6.2 trillion USD	\$6.5 trillion USD	\$6.7 trillion USD	\$7.3 trillion USD
Daily average Canadian-dollar foreign exchange settlement value (total, CAD)	\$233 billion CAD	\$267 billion CAD	\$282 billion CAD	\$319 billion CAD
Settlement members	71	74	74	73

London Clearing House (LCH) SwapClear

Measure	2021	2022	2023	2024
Notional outstanding OTC interest rate swaps, in all currencies, as of December 31	\$352 trillion USD	\$374 trillion USD	\$400 trillion USD [†]	\$403 trillion USD
Notional outstanding OTC interest rate swaps, denominated in Canadian dollars, as of December 31	\$19.3 trillion CAD	\$22.6 trillion CAD	\$22.5 trillion CAD	\$27.4 trillion CAD
Number of direct participants [*]	123	124	127	126

^{*} SwapClear Global and SwapClear Global FCM

[†] Revised to correct a data error. LCH SwapClear notional outstanding OTC interest rate swaps, in all currencies, for 2023 had been erroneously reported as \$246 trillion in the *Bank of Canada Oversight Activities for Financial Market Infrastructures—2023 Annual Report* (published March 2024).

Appendix 2 | Glossary

central counterparty (CCP)	An entity that interposes itself between counterparties in contracts traded in one or more financial markets. In becoming the buyer to every seller and the seller to every buyer, the central counterparty ensures the performance of open contracts.
central securities depository	An entity that provides securities accounts, central safekeeping services and asset services, which may include the administration of corporate actions and redemptions. A central securities depository plays an important role in helping to ensure the integrity of securities issues (that is, it ensures that securities are not accidentally or fraudulently created, destroyed or modified).
clearing	The process of transmitting, reconciling and, in some cases, confirming transactions before settlement, potentially including the netting of transactions and the establishment of final positions for settlement. On occasion, this term is also used (imprecisely) to cover settlement. In the context of futures and options, clearing also refers to the daily balancing of profits and losses and the daily calculation of collateral requirements.
collateral	An asset or third-party commitment that is used by a collateral provider to secure an obligation for a collateral taker.
credit risk	The risk that a counterparty, whether a participant or other entity, will be unable to fully meet its financial obligations when due or at any time in the future.
designated system / designated financial market infrastructure	A financial market infrastructure designated under the <i>Payment Clearing and Settlement Act</i> for oversight by the Bank of Canada.
financial market infrastructure (FMI)	A multilateral system among participating institutions, including the operator of the system, used to clear, settle or record payments, securities, derivatives or other financial transactions.
liquidity risk	The risk that a counterparty, whether a participant or other entity, will have insufficient funds to meet its financial obligations as and when expected, although it may be able to do so in the future.
payment system	A set of instruments, procedures and rules for the transfer of funds between or among participants. The system includes the participants and the entity operating the arrangement.
payments system risk	The risk that a disruption to or a failure of an FMI could cause a significant adverse effect on economic activity in Canada either by impairing the ability of individuals, businesses or governments to make payments or by producing a general loss of confidence in the Canadian payments system.
procyclicality	The mutually reinforcing (positive feedback) mechanisms through which the financial system can amplify business fluctuations and possibly cause or exacerbate financial instability. In the context of CCPs, this term is used to describe how market volatility can feed into increases in margin requirements, which in turn could create more market volatility.

recovery	<p>The ability of a financial institution, including an FMI, to resume operations after a threat to its viability and financial strength so that it can continue to provide its critical services without authorities having to use resolution powers.</p> <p>More specifically, in the context of an FMI, recovery is defined as the actions of the FMI that are consistent with its rules, procedures and other <i>ex ante</i> contractual arrangements to address any uncovered loss, liquidity shortfall or capital inadequacy, whether arising from participant default or other causes (such as business, operational or other structural weaknesses), including actions to replenish any depleted pre-funded financial resources and liquidity arrangements, as necessary, to maintain the FMI's viability as a going concern and the continued provision of critical services.</p>
securities settlement system	<p>An entity that enables securities to be transferred and settled by book entry according to a set of predetermined multilateral rules. Such systems allow the transfer of securities either free of payment or against payment.</p>
systemic risk	<p>The risk that the inability of a participant to meet its obligations in an FMI as they become due or that a disruption to or a failure of an FMI could, by transmitting financial problems through the FMI, cause:</p> <ul style="list-style-type: none">▪ other participants in the FMI to be unable to meet their obligations as they become due▪ financial institutions in other parts of the Canadian financial system to be unable to meet their obligations as they become due▪ the FMI's clearing house or the clearing house of another FMI within the Canadian financial system to be unable to meet its obligations as they become due▪ an adverse effect on the stability or integrity of the Canadian financial system