



A MADE-IN-CANADA SOLUTION FOR DERIVATIVES CLEARING



Profile



Canadian Derivatives Clearing Corporation (CDCC), a wholly-owned subsidiary of the Montréal Exchange (MX), acts as the central clearing counterparty for exchange-traded derivative products in Canada and for a growing range of customized financial instruments. CDCC's role is to ensure the integrity and stability of the markets that it supports.

CDCC occupies a unique space in the Canadian financial markets. Here are the main reasons behind CDCC's exclusive position:

- The only integrated central clearing counterparty (CCP) in North America that clears and settles futures, options and options on futures.
- More than thirty-five-year track record as the central clearing counterparty and guarantor of exchange-traded derivative products in Canada.
- Prudent and standardized risk management policies and operational procedures.
- More than 30 Clearing Members, including major financial institutions and brokers in Canada.



History

CDCC has supported rapid growth in the Canadian derivatives marketplace for decades with expert clearing systems and risk management solutions. Originating in 1975 as clearing facilities to support the first Canadian equity options market, CDCC acquired its current name in 1996.

- 1977** – Trans Canada Options (TCO) is established through merger of Montréal and Toronto options clearinghouses.
- 1983** – TCO is organized as an independent service organization managed separately from its three shareholder exchanges (Montréal, Toronto, and Vancouver).
- 1985** – TCO begins clearing futures for Toronto Futures Exchange.
- 1996** – TCO changes its name to Canadian Derivatives Clearing Corporation (CDCC).
- 2000** – CDCC becomes a wholly-owned subsidiary of the Montréal Exchange (MX).
- 2006** – CDCC launches Converge® to provide central counterparty clearing services for customized equity options.
- 2008** – TMX Group Inc. is created through combination of MX with TSX Group.
- 2009** – MX and CDCC launch the SOLA® Clearing platform.
 - The Investment Industry Association of Canada (IIAC) chooses CDCC to develop the infrastructure for central counterparty clearing services for the Canadian fixed income products.
- 2012** – CDCC operations are expanded to include clearing of fixed income (Repo) transactions



Central Counterparty for Canadian Derivatives Markets

Clearinghouses handle the technical processing and settlement tasks required to execute trades conducted on exchanges. They also play the vital intermediary role of **central counterparty**. This involves not only trade management but also sophisticated risk management processes.

CDCC is the central clearing counterparty for the Montréal Exchange listed derivative products. Like other central clearing counterparties, it delivers the key benefits of lower cost, lower risk and greater confidence in the markets during times of market volatility and continuing uncertainty.





Expanding Range of Financial Products

CDCC issues and guarantees all derivative contracts traded on the Montréal Exchange and facilitates settlement among all market participants. It has adapted its clearing systems to support central counterparty clearing of customized derivatives and fixed income markets with **Converge**.

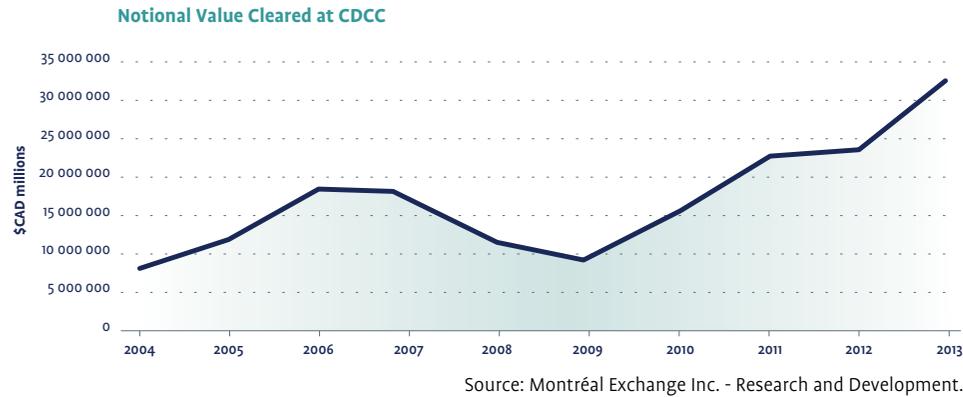
	Exchange-Traded		Customized	
MARKET	Futures	Options	Options	Fixed Income
UNDERLYING	Interest Rate	Equity	Equity	Repo
	Index	ETF	ETF	Cash Products
		Index		
		Currency		
Futures				





Vision & Strategy

CDCC has a respected track record of supporting Canadian derivatives markets through periods of rapid growth, volatility and even financial crisis.



As the world economy recovers from the worst crisis since the 1930s, CDCC is expanding its product selection to meet the growth in demand for advanced financial risk management mechanisms for customized financial products.

CDCC meets global standards and requirements for clearing developed by the Bank for International Settlements (BIS). The core business strategy of CDCC is to build on established strengths in three key areas of central counterparty performance:

- Risk management
- Legal and regulatory framework
- Technology and clearing infrastructure



Risk Management

CDCC has a robust and sophisticated risk management system that exceeds global industry standards. It employs a variety of tools designed to:

- Ensure the financial soundness of all Clearing Members.
- Compute risk exposure.
- Determine the total amount of margin needed to cover risks.
- Ensure legal certainty – and transparency – in the event of a default.

The system is designed to manage counterparty, credit and systemic risks – the main categories of risk that is of concern regulators, international bodies and financial institutions.

MEMBERSHIP Imposing strict requirements for all Clearing Members

CDCC has established membership qualifications to protect both CDCC and its existing Clearing Members. Each applicant for membership must submit an application package designed to capture, among other things, the applicant's financial condition with relation to the standards described in CDCC's Rules.

To clear trades with CDCC, Clearing Members must meet all the following criteria:

- Member or approved participant in good standing with an exchange recognized in a Canadian province, or a bank or an authorized foreign bank to which the Bank Act (Canada) applies.
- Member is a participant in good standing with CDS Clearing and Depository Services Inc.
- Member has adequate operational resources to meet its obligations to CDCC and other Clearing Members.
- Approval by the CDCC Board.
- Provide base deposits to CDCC's Clearing Fund.

MARGINING SYSTEM A standardized, robust and efficient methodology for measuring risk exposure

Margining the risk exposure generated by derivatives transactions is the core of the risk management process at any CCP.

At CDCC, margin requirements are calculated daily and intra-daily using SPAN^{®1}, the most widely used risk management calculation tool by CCPs around the world.

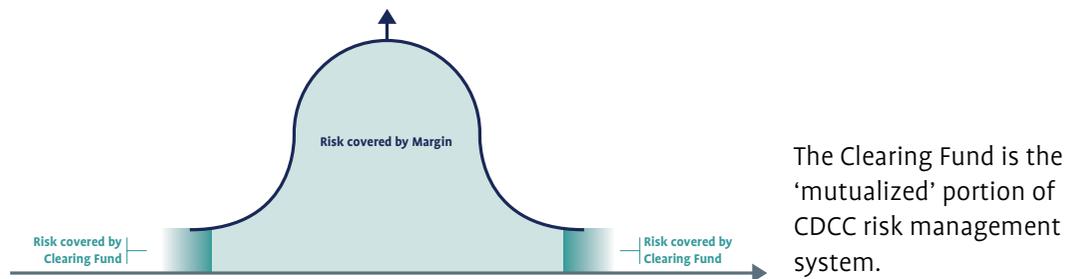
CDCC's margin requirements are computed using robust assumptions while allowing efficient margin relief for spread transactions (inter and intra commodity) in options and futures contracts.

Margin deposits help:

- > Build confidence in the market's ability to withstand shocks
- > Limit potential losses if a Clearing Member defaults
- > Prevent risk exposure from spreading to other members

CLEARING FUND Covering residual risks

The Clearing Fund provides an additional level of protection to CDCC Clearing Members. It is designed to cover residual risks not covered by margin deposits. Clearing Members contribute to the fund based on their own risk exposures, calculated using monthly stress tests based on extreme but plausible market scenarios.



¹ Span is a trademark owned by the Chicago Mercantile Exchange Inc. and is used under license.

APPROVED COLLATERAL Ensuring quality of collateral

Eligible assets to cover margin requirements include:

- > Canadian dollars
- > Canadian government bills and bonds
- > U.S. treasury bills and bonds
- > Canadian provincial bonds
- > Valued securities

Minimum margin requirements are applied to the value of the collateral to reflect market risk, credit risk, liquidity risk, and possible currency risk.

COMPLETE RISK TOOLKIT Additional levels of protection

- > Daily Capital Margin Monitoring (DCMM)
- > Default simulations
- > Business continuity plan with redundant computer and telecommunications systems to ensure recovery of CDCC operations in less than two hours



Robust Legal & Regulatory Framework –
Legal certainty in case of default

CDCC's margining system and Clearing Fund system are embedded in a legal and regulatory structure that provides transparency and legal certainty in default scenarios. Experience with other CCPs has demonstrated the critical value of an orderly process for unwinding, transferring and covering open positions.

CDCC is structured to ensure good corporate governance and is subject to rigorous regulatory oversight:

- CDCC operates under recognition orders from the Autorité des marchés financiers (AMF), the Ontario Securities Commission (OSC) and the British Columbia Securities Commission.
- CDCC has an independent Board of Directors and an independent Risk Management Advisory Committee (RMAC).
- The Payment Clearing and Settlement Act (PCSA), which was proclaimed by Parliament in July 1996, gives the Bank of Canada responsibility for the oversight of payments and other clearing and settlement systems in Canada, for the purpose of controlling systemic risk, whereby increasing the certainty that the legal arrangements governing the operations of a designated clearing and settlement system will produce the expected outcome in periods of financial stress.
- The Canadian Derivatives Clearing Services (CDCS®), operated by CDCC, has been designated by the Bank of Canada, as being of systemic importance under the PCSA. As such, CDCC is under the obligation to operate in such a manner that risk is properly controlled and to promote efficiency and stability in the Canadian financial system.

The background features a dark blue gradient that transitions from a deep navy at the top to a lighter, almost white-blue at the bottom. Overlaid on this gradient is a complex, multi-colored grid of thin lines. The lines are primarily horizontal and vertical, but many are slightly tilted, creating a sense of depth and movement. The colors of the lines include yellow, cyan, magenta, and red, which stand out against the blue background. The overall effect is that of a digital or technical interface.

Advanced Technology & Clearing Infrastructure

CCPs require advanced clearing technology both to handle large trading volumes – notably the peak loads of activity – and to support sophisticated risk management systems.

CDCC has a leading-edge proprietary clearing platform, SOLA Clearing, which is part of a proprietary software system developed by the Montréal Exchange, CDCC's sole shareholder and a wholly-owned subsidiary of TMX Group. It is designed to support clearing and settlement of a full range of products. SOLA is currently used to trade Canadian derivatives at the Montréal Exchange, U.S. equity options at the Boston Options Exchange Group, LLC (BOX) and financial products at the London Stock Exchange (LSE).

The table below provides an overview of the SOLA Clearing platform as well as the benefits provided to CDCC and its Clearing Members.

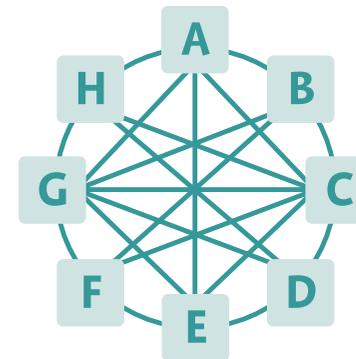
SOLA Clearing Features	Business Benefits
Performance	Extreme capacity (orders, price updates, margins) Extreme performance (peak volumes)
Reliability	System availability Independent of hardware for continuous operation
Scalability	Scales to fit with business capacity and performance requirements Customized configurations
Distributed Architecture	Local access for market participants Live back-ups Reduced operational costs
Portability	Technological platform matches business requirements Minimal software constraints
Flexibility	Fast time to market for new functions Supports multiple product categories
Ease of Use	All tools share same look and feel Efficient management of market operations
Proven Technology	Fast time to market High availability Low implementation risk

Customized Clearing – **Converge**

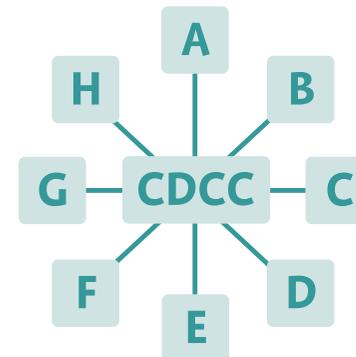
CDCC is expanding its product selection to meet the growth in demand for advanced financial risk management mechanisms for customized derivatives and fixed income products.

Bilateral vs. Central Counterparty (CCP) Model

Bilateral Model: Each counterparty needs to manage as many bilateral relationships as they have counterparties. This implies managing multiple bilateral arrangements and the related risk exposures on a continuing basis.



CCP Model: Counterparties only need to have a relationship with the CCP. When becoming members of the CCP, counterparties are bound by the CCP rules, which serve to replace all bilaterally negotiated arrangements.





Converge: CDCC introduced its Converge central counterparty clearing services in 2006 with the aim of offering its Clearing Members the benefits of central clearing for customized derivatives transactions. The result for Clearing Members is a combined register of their listed and customized derivatives instruments, extending the mitigated risks and reduced costs typically offered by exchange-traded contracts to customized instruments.

Products: CDCC is expanding central counterparty services across a range of asset classes:

- Converge customized equity options clearing introduced in 2006.
- Fixed income transactions, including repos, introduced in 2012.

Trading venues: CDCC also aims to expand its Converge services from purely bilateral markets to other trading venues, notably Inter-Dealer Brokers (IDB) and Alternative Trading Systems (ATS).

Benefits: The benefits of using Converge include:

- Centralized business processes
- Anonymity
- Multilateral netting (Customized Derivatives, Fixed Income and Exchange-Traded)
- Optimal usage of capital and collateral
- Risk mutualization
- Scalability
- Transactions no longer hindered by the associated costs of negotiating and maintaining legal agreements of the International Swaps and Derivatives Association, Inc. (ISDA) with all counterparties

TMX Group

Since 2008, CDCC belongs to an integrated multi-asset class exchange group, the TMX Group:





Tour de la Bourse
P.O. Box 61
800 Victoria Square
3rd Floor
Montréal, Quebec
H4Z 1A9

T 514 871-3545
F 514 871-3530

Exchange Tower
P.O. Box 450
130 King Street West
5th Floor
Toronto, Ontario
M5X 1J2

T 416 367-2463
F 416 350-2780

CDCC.CA

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