

The Canadian Approach to Central Clearing for Over-the-Counter Derivatives

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Introduction

The financial crisis revealed important weaknesses in the infrastructure of over-the-counter (OTC) derivatives markets. As a result, leaders of the Group of 20 (G-20) agreed to reform these markets to improve their transparency, protect against market abuse and, ultimately, to mitigate systemic risk.² This report focuses on Canada's approach to implementing one key element of the reform agenda: the commitment that all standardized OTC derivatives should be cleared through central counterparties (CCPs).

A CCP is a financial market infrastructure that stands between buyers and sellers in financial transactions, ensuring that obligations will be met on all contracts cleared through the CCP. By managing and mitigating counterparty credit risk, CCPs have the potential to reduce systemic risk, thereby reducing the potential for financial shocks to be transmitted throughout the financial system and supporting the ability of markets to remain continuously open, even in times of stress (Chande, Labelle and Tuer 2010).

For OTC derivatives markets that are currently centrally cleared, a small number of large global CCPs offer clearing across multiple jurisdictions and currencies.³ Canadian authorities (as well as those in most other G-20 jurisdictions) have had to decide whether they could adequately protect the stability of local financial markets under a global approach to clearing that allows the use of global

CCPs recognized by Canadian authorities. The alternative would be a local approach, where authorities would require Canadian market participants to do some of their clearing through a CCP located in Canada.⁴ Because of the international nature of OTC derivatives markets, a local approach would not likely rely solely on a local CCP, and some trades would continue to be cleared through global CCPs.

This report reviews the financial stability, efficiency and market-development considerations that create trade-offs between the global and local approaches to clearing, as well as the reasons why authorities in Canada have decided that Canadian market participants may clear OTC derivatives using any CCP recognized by Canadian authorities, including global CCPs.⁵ While a local CCP would provide the most straightforward oversight and the best capacity for Canadian authorities to intervene and control risks, a global approach that makes use of large global CCPs has the potential to be more efficient and more robust to certain types of shocks.

In response to these trade-offs, the Financial Stability Board (FSB) has worked with other international standard-setting bodies to establish four safeguards for clearing OTC derivatives through a global framework of CCPs (FSB 2012). The safeguards, together with international standards for CCPs, protect the stability of local markets and, in particular, address concerns that may arise when locally important markets are cleared through offshore CCPs. The Bank of Canada and other Canadian authorities are satisfied with the pace and

¹ The authors thank the members of the Bank of Canada's OTC Derivatives Task Force and the interagency OTC Derivatives Working Group for contributing to the analysis on which this report is based.

² These commitments were made in September 2009 at the G-20's Pittsburgh Summit (G-20 2009) and reaffirmed at the Toronto Summit in 2010 and the summits in Cannes (2011) and Los Cabos (2012). Wilkins and Woodman (2010) describe how these reforms can strengthen the infrastructure of OTC derivatives markets in Canada.

³ The only current Canadian clearing service for OTC derivatives is an OTC equity clearing service offered by the Canadian Derivatives Clearing Corporation.

⁴ Clearing requirements would be subject to appropriate exemptions.

⁵ This decision was announced in the "Statement by Canadian Authorities on Clearing of Standardized OTC Derivatives Contracts" on 1 October 2012, available at <www.bankofcanada.ca/2012/10/notices/statement-by-canadian-authorities/>.

direction of international efforts to implement the four safeguards at CCPs of interest to the Canadian market and are therefore comfortable with the global approach to clearing. They will continue to monitor the market for clearing services and work with authorities in other jurisdictions toward the full achievement of the four safeguards and compliance with international standards for CCPs.

A Framework for Choosing Between the Global Approach and the Local Approach

When choosing an approach to clearing, Canadian authorities considered the potential effect of the two options on the stability, efficiency and development of Canadian markets. These three considerations are inter-related on many levels. For example, efficient markets are important both for promoting a resilient and robust financial system and for developing Canadian financial markets and infrastructures.

The international nature of OTC derivatives markets plays an important role in this framework. Transactions in OTC derivatives frequently involve counterparties in different jurisdictions, and market participants regularly trade in several currencies and across various types of OTC derivatives. For example, the majority of trades in Canadian-dollar OTC interest rate derivatives (measured in notional amount outstanding) involve at least one offshore counterparty, and Canadian dealers have large portfolios of derivatives that are not denominated in Canadian dollars. Thus, a CCP located in Canada would likely capture only a portion of the market, which limits the potential benefits of the local approach.⁶

Financial stability

CCPs concentrate counterparty risk and are critical to the functioning of cleared markets. If they incorporate appropriate risk controls, they can enhance financial stability; otherwise, they can be a source of financial stress. Authorities in Canada have considered the extent to which instability at a global CCP could affect Canadian markets and participants. Critical elements of this analysis are (i) the capacity of Canadian authorities to oversee the CCP's activities during the normal course of business and to intervene to mitigate shocks during a crisis, if necessary; and (ii) how the structure of both the CCP and the cleared market affect the CCP's ability to mitigate financial shocks.

(i) Capacity to oversee

Domestic authorities, including the Bank of Canada and provincial securities commissions, have oversight responsibility for CCPs.⁷ Authorities would be particularly interested in the Canadian-dollar activities of a global CCP and the risks to Canadian participants through their use of that CCP. The main oversight objective of the authorities is to make sure that risk is being appropriately controlled. This would include, among other things, ensuring that CCPs meet the applicable risk-management standards—the Principles for Financial Market Infrastructures developed by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions (the CPSS-IOSCO Principles).⁸

Overseeing a CCP located in Canada is more straightforward than overseeing a CCP located in another jurisdiction, because Canadian authorities would typically take the lead in regulating the CCP and have a full set of legal mechanisms for enforcing their requirements. However, the oversight benefits would accrue only to the portion of the market being served by the local CCP.

It is more complicated for Canadian authorities to oversee a global CCP, since Canadian authorities would not be the primary regulator and would generally have less direct influence. Authorities would therefore look for mechanisms to facilitate their oversight. Participation in a formal co-operative oversight framework—in which the home regulator takes the lead and works with other participating authorities—would be one way for Canadian authorities to effectively oversee a global CCP. The Bank of Canada considers co-operative oversight to be an effective mechanism to fulfill its oversight responsibilities for a global CCP.

(ii) Ability to mitigate shocks

CCPs promote financial stability by having clear and robust processes in place to manage member defaults in an orderly fashion. In the event of a default, the CCP takes on the obligations of the defaulting member's portfolio and manages this risk with the technical and—in some cases—financial assistance of other members. The effective

⁶ A CCP located in Canada is unlikely to capture a large share of OTC derivatives clearing in foreign currencies. For Canadian-dollar trades, a local clearing requirement could not capture trades that involve two foreign counterparties, and a CCP located in Canada would not be able to attract all market participants, for reasons discussed in the "Efficiency" section on page 45.

⁷ The Bank of Canada is responsible for the oversight of CCPs that it has designated under the Payment Clearing and Settlement Act. Provincial securities regulators oversee all CCPs carrying on business in their province.

⁸ The CPSS-IOSCO Principles are a harmonized set of risk-management standards that are applicable to all systemically important financial market infrastructures, including CCPs (CPSS-IOSCO 2012a). McVanel and Murray (this issue) describe how the Bank of Canada is implementing the Principles.

management of a default thus requires a strong membership and access to liquid and efficient markets. Because participants play an important role in this respect, even CCPs that meet harmonized risk-management standards, including the CPSS-IOSCO Principles, may differ in their ability to manage severe shocks, such as the simultaneous default of multiple clearing members.

All else being equal, a global CCP will generally have a greater capacity to manage member defaults than a local CCP, since the membership of a global CCP will be larger and more diverse, consisting of market participants from many different jurisdictions. This means that if a member defaulted, a global CCP would have a larger pool of surviving members to help hedge and replace the defaulted portfolio. Moreover, a global CCP is also likely to have greater financial capacity to absorb losses in the event of a default.

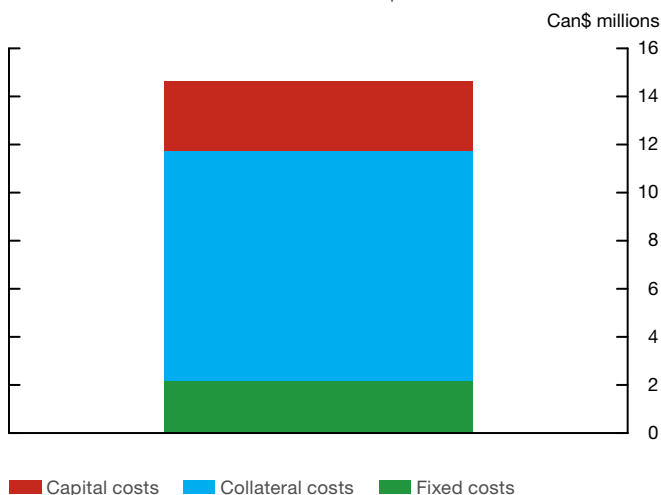
Participating in a global CCP could, however, expose Canadian participants to shocks arising from the default of participants based in other jurisdictions, since stress might be transmitted to markets in Canada through the default-management mechanism of the global CCP. The local approach might insulate markets in Canada from some international shocks if Canadian participants cleared *only* at their local CCP. Unfortunately, this benefit would be limited, since Canadian dealers would still need to be members of global CCPs to clear non-Canadian products, and some global dealers would probably be members of a CCP located in Canada. As a result, even under the local approach to clearing, Canadian participants could suffer financial losses stemming from the default of CCP members based in other jurisdictions.

Efficiency

The local approach would be more costly than the global approach for Canadian market participants and would adversely affect market efficiency. A CCP located in Canada would clear primarily Canadian-dollar derivatives, likely forcing its users to split their cleared portfolios between the local and global CCPs. This would increase costs in three ways. First, to recover the fixed costs of building and operating a local CCP, its users would need to pay membership and clearing fees to the local CCP in addition to fees paid to global CCPs. Second, the amount of collateral required would increase, since users would benefit from less cross-currency diversification and netting of risk exposures in their cleared portfolios. Users would also be required to contribute to the default fund of a local CCP, as well as to the default funds of other CCPs. Third, regulatory

Chart 1: Increased annual costs of local vs. global clearing for a hypothetical Canadian dealer

Illustrative estimates for the interest rate swap market



Source: Bank of Canada

capital costs for users would rise, owing to reduced netting of risk exposures and the additional default-fund contributions.

The higher costs associated with using a local CCP would likely lead to market fragmentation and decreased market liquidity in Canadian-dollar OTC derivatives. Market participants not obligated to clear in Canada would have an incentive to concentrate their clearing through global CCPs. Since trading can occur only when both counterparties clear through the same CCP, Canadian market participants would consequently have fewer trading opportunities and would face decreased market liquidity. Reduced liquidity would further raise the costs of clearing and trading for Canadian market participants.

Reform of OTC derivatives markets will substantially increase capital, collateral and fixed costs for all market participants. Clearing Canadian-dollar interest rate swaps in a local CCP would add approximately \$15 million per year in costs above the costs of the global approach for a hypothetical Canadian dealer, according to our estimates. This could represent more than 20 per cent of the dealer's profits related to these trades and a total cost of \$150 million per year to market participants in Canada. **Chart 1** highlights the relative importance of the three factors that render local clearing more costly.⁹

⁹ Estimated costs are based on the portfolio of a hypothetical mid-sized dealer, as well as specific assumptions about future market and regulatory changes. They are provided only to illustrate the different efficiency considerations.

The higher costs associated with clearing locally would reduce incentives to use standardized and clearable derivatives products, possibly reducing the adoption of central clearing. They could also discourage the use of derivatives to manage risk and might put Canadian market participants at a competitive disadvantage relative to their global peers. Most importantly, perhaps, decreased liquidity in a fragmented market could reduce the ability of the local CCP to effectively manage risk and handle participant defaults. In contrast, a global CCP with access to a liquid and efficient market can quickly replace defaulted portfolios, minimizing the impact on surviving members and protecting the stability of the financial system.

Costs related to the fragmentation of clearing could be reduced if links were established between local and global CCPs. Links allow each counterparty to a trade to clear at a different CCP, with an inter-CCP contract arising to offset the exposures. This could also restore some of the netting and diversification benefits of having a portfolio cleared at a single CCP. There are currently no links in place between CCPs for OTC derivatives, however, and such links would be challenging to configure. Authorities would need to carefully evaluate any proposed linking arrangement because of the risk of contagion in times of market stress.

Market development

The approach chosen for central clearing might affect the development of Canadian financial markets and infrastructure. However, considerations related to market development do not clearly favour either the local or the global approach. On one hand, the creation of local infrastructure to clear OTC derivatives markets could have beneficial spinoff effects. For example, the use of a local CCP might facilitate cross-product netting with listed derivatives, which could promote local trading. A local CCP might also be in the best position to structure its rules and clear products to meet the needs of local market participants, although the latitude for local specialization may be small for OTC derivatives products that are standardized across currencies. As well, building local infrastructure for clearing could arguably stimulate the creation of legal, economic and operational expertise that might facilitate the development of local financial centres.

On the other hand, these potential benefits might be small in absolute terms, and would need to be weighed against the disadvantage of imposing higher costs on local financial activities that use clearing services. Building a CCP to clear particular classes of trades in OTC derivatives would also create important implementation risks. These risks could be reduced through a joint venture with an existing global CCP that clears

OTC derivatives, but such an arrangement could also reduce some of the market-development benefits of a local CCP.

Overall assessment

For the portion of the market cleared in Canada, the local approach offers the most straightforward oversight and gives local authorities more direct control in managing systemic events. A key advantage of global CCPs, however, is that they promote liquidity and efficiency in a largely global OTC derivatives market, which helps make them generally more robust to financial shocks and allows derivatives users to appropriately manage their risk. Other factors, such as market development, do not appear to clearly favour either approach. Overall, the preferred solution is one that maximizes the benefits of the global approach while preserving the ability of Canadian authorities to oversee the CCP and intervene to mitigate risks, if needed. The next section discusses international initiatives to make this preferred solution possible.

Four Safeguards for More Secure Global Clearing

To strengthen the global approach, Canadian authorities have been working with other members of the FSB and international standard-setting bodies to establish four safeguards for global clearing (FSB 2012). Together with the CPSS-IOSCO Principles, the safeguards give authorities the tools they need to protect local markets that are cleared through global CCPs by addressing the issues of (i) fair and open access, (ii) oversight and regulation, (iii) recovery and resolution, and (iv) access to emergency liquidity.

(i) Fair and open access

To realize the full benefits of central clearing, a range of market participants should have access to CCPs, either directly or as clients of clearing members. Access rules are an important component of a CCP's risk controls, since they ensure that members have the ability to manage the risk introduced to the CCP. Unnecessary limitations on access could, however, lead to the concentration of risk in a small number of global dealers and work against the broader goal of reducing the systemic importance of large financial institutions. This limited access and dependence on large dealers could make dealers from smaller jurisdictions more vulnerable to financial shocks, reduce competition and increase clearing costs.¹⁰

¹⁰ The challenges related to limited access are explained by Slive, Wilkins and Witmer (2011); CGFS (2011); and Fontaine, Pérez Saiz and Slive (2012).

In the past, the leading global CCPs for clearing OTC derivatives restricted direct membership to the largest dealers and also provided only limited indirect access. The fair and open access safeguard requires that global CCPs provide access based on transparent and objective criteria, building on the CPSS-IOSCO Principles, which require that access to CCPs be fair, open and risk-based. National regulators are implementing these requirements, and several global CCPs now allow broader participation.

(ii) Oversight and regulation

Authorities will be comfortable relying on foreign-domiciled CCPs to clear locally important products only if they can fulfill their oversight responsibilities with respect to these CCPs. For some authorities, this will mean relying on co-operative oversight arrangements.¹¹ To be effective, such arrangements should allow participating authorities to actively take part in the oversight of the CCP by (i) receiving comprehensive information regarding the CCP, (ii) ensuring that the CCP is held to applicable risk-control standards (the CPSS-IOSCO Principles), and (iii) fostering discussion of the CCP's operations and proposed changes to operations. In addition, participating authorities should retain their ability to set tighter standards for the CCP in their own jurisdictions. Considerable progress has been made in establishing effective co-operative oversight arrangements for a number of global CCPs.

(iii) Recovery and resolution

CCPs perform a critical function, and the disorderly failure of a CCP could severely disrupt the markets that it supports, especially if there is no alternative CCP that could continue clearing the market. While adherence to appropriate risk controls should make it highly unlikely that a CCP will fail, it is nonetheless possible. As a result, under this safeguard, all jurisdictions in which systemically important CCPs are located should put in place robust recovery and resolution regimes and provide assurance that the regimes will take appropriate account of the interests of all jurisdictions served by the CCP. This safeguard is consistent with the broader FSB requirement that jurisdictions establish recovery and resolution regimes for all systemically important financial institutions and financial market infrastructures. CPSS-IOSCO has published draft guidance on recovery and resolution (CPSS-IOSCO 2012b), and major jurisdictions have committed to establishing regimes for systemically important CCPs.

(iv) Access to emergency liquidity

A CCP must have access to adequate liquidity to withstand a default by any of its members. CCPs regularly collect collateral from their members, but a forced sale of collateral assets to manage a member default could disrupt the markets for the collateral instruments. In extreme circumstances, a CCP could require that members provide liquidity support, but this would put the liquidity position of surviving members under stress. The CPSS-IOSCO Principles therefore require that CCPs have adequate private sector liquidity available for all currencies in which they clear, to enable them to handle a default of the participant and its affiliates that could create the largest liquidity exposures for the CCP, even in stressed market conditions.

In extreme circumstances, however, private sector liquidity arrangements may be insufficient or unavailable, and central banks might wish to exchange the collateral of a solvent CCP for emergency liquidity. To this end, work is under way at the international level to remove any technical obstacles that would prevent central banks from working through the central bank of the CCP's home country to provide emergency liquidity in all relevant currencies. It is important to note, however, that removing technical obstacles in no way commits central banks to providing emergency liquidity to CCPs.

A Decision for Canada

Canadian authorities have been studying both the local and global approaches to clearing through an interagency working group chaired by the Bank of Canada, which is composed of representatives of the Department of Finance, the Office of the Superintendent of Financial Institutions, Quebec's *Autorité des marchés financiers*, the Ontario Securities Commission, the Alberta Securities Commission and the British Columbia Securities Commission. The working group initially outlined the relevant issues in its October 2010 report (OTC Derivatives Working Group 2010). Since then, Canadian authorities have been examining options for clearing OTC derivatives—in particular, whether to require Canadian market participants to use a local CCP—and have been working internationally to promote the development of the four safeguards. Canadian authorities have also consulted with the Canadian Market Infrastructure Committee to take industry viewpoints into account in their decision-making process.¹²

¹² The Committee consists of representatives of the Bank of America Merrill Lynch, Bank of Montreal, Caisse de dépôt et placement du Québec, Canada Pension Plan Investment Board, Canadian Imperial Bank of Commerce, Healthcare of Ontario Pension Plan, National Bank of Canada, Ontario Teachers' Pension Plan Board, Royal Bank of Canada, The Bank of Nova Scotia, and The Toronto-Dominion Bank.

¹¹ Other authorities may rely on bilateral memoranda of understanding.

Box 1

Why Focus on OTC Interest Rate Derivatives Denominated in Canadian Dollars?

The G-20 commitment to centrally clear standardized over-the-counter (OTC) derivatives extends to all five major asset classes (interest rates, credit, foreign exchange, equities and commodities). But some asset classes play a more important role than others in the Canadian financial system, and central counterparties (CCPs) are not yet capable of safely clearing all types of OTC derivatives.

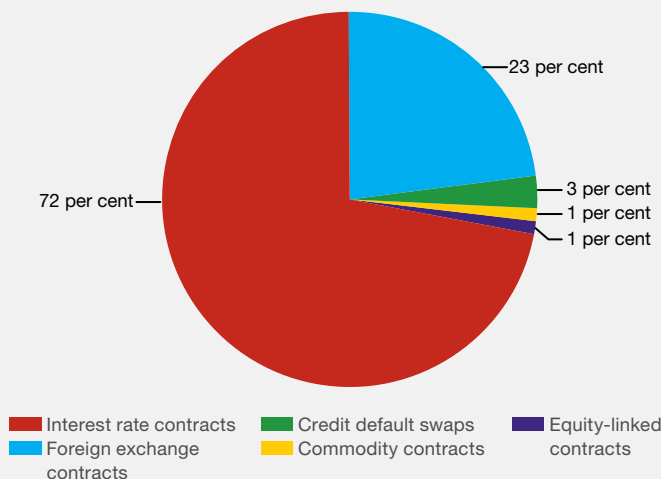
Central clearing has the greatest potential to generate financial stability benefits in markets that are systemically important for Canada. The Bank of Canada considers the markets for both OTC interest rate derivatives and foreign exchange derivatives to be systemically important, owing to their size and centrality in Canadian financial markets and the risk exposures they create for market participants. These markets make up the largest share of the OTC derivatives portfolios of Canadian banks (**Chart 1-A**). Both markets are also central to Canadian financial markets, since they allow participants to hedge risks in their activities. For example, banks use interest rate swaps to manage the risks created by the maturity mismatch between funding through deposits and lending at longer maturities. Corporations use OTC derivatives to hedge risks from foreign currency cash flows originating at foreign subsidiaries, while financial institutions, corporations and governments manage their interest rate and foreign exchange risks through OTC derivatives markets when borrowing in local and foreign markets.

Most foreign exchange derivatives are poor candidates for central clearing at this time, however, because they are subject

to a high degree of settlement risk that cannot yet be fully managed by a CCP. There is currently no international consensus on whether foreign exchange derivatives should be centrally cleared. The market for interest rate derivatives denominated in Canadian dollars is therefore the focus of analysis for choosing the best approach to clearing for Canada.

Chart 1-A: Over-the-counter derivatives portfolios of Canadian banks, notional amounts outstanding

Total = US\$ 10.1 trillion



Source: OTC Derivatives Working Group (2010)

Last observation: June 2010

The Canadian decision has focused on OTC interest rate derivatives denominated in Canadian dollars, since the Bank of Canada considers this market both systemically important and largely clearable (**Box 1**). There is currently no CCP located in Canada that clears OTC interest rate derivatives; hence, a local approach would require building domestic clearing capability. Internationally, LCH.Clearnet's SwapClear service is the dominant CCP for OTC interest rate derivatives, clearing contracts in 17 currencies, including Canadian dollars, and representing over 99 per cent of outstanding cleared interest rate derivatives.¹³

Canadian authorities judge that global CCPs will provide a safe, robust and resilient environment for clearing OTC derivatives, provided they comply with the CPSS-IOSCO

Principles, meet the four safeguards and comply with specific recognition requirements imposed by Canadian regulators. While work on the safeguards is ongoing, Canadian authorities are satisfied with the direction and pace of the international efforts, including their implementation at global CCPs serving the Canadian market. SwapClear, in particular, has established:

- *Fair and open access:* SwapClear's access criteria have been revised and are in line with the CPSS-IOSCO Principles and the access safeguard.¹⁴ Five major Canadian banks have direct clearing access to SwapClear, while another is in the process of obtaining membership.

¹³ As of September 2012, four internationally active CCPs clear OTC interest rate derivatives: SwapClear (US\$340 trillion gross notional amount outstanding), CME Group (US\$0.4 trillion), Singapore Exchange (US\$0.3 trillion) and Eurex Clearing (undisclosed volume).

¹⁴ For example, SwapClear has reduced the minimum net capital requirement for clearing members from \$5 billion to \$50 million, scaled according to the risk assumed by a member. The requirement that SwapClear members hold a swap book with \$1 trillion in notional amount outstanding has also been removed.

- *Oversight and regulation:* SwapClear's lead regulator, the U.K. Financial Services Authority, has established bilateral and multilateral co-operation and information-sharing frameworks. The Bank of Canada participates in the multilateral regulatory co-operation arrangement, which will assist the Bank in monitoring the risk associated with SwapClear and fulfilling the oversight responsibilities that would come with designation.¹⁵ Canadian securities regulators typically fulfill their regulatory role through a recognition process where information is shared through bilateral memoranda of understanding, which they have started to put in place.
- *Recovery and resolution:* Major jurisdictions, including the United Kingdom, have committed to putting in place recovery and resolution regimes for systemically important CCPs. In addition, the United Kingdom has published a consultative document explaining how it proposes to resolve failing CCPs (HM Treasury 2012).
- *Access to emergency liquidity:* Canadian and U.K. regulators will require SwapClear to meet, at a minimum, the liquidity requirements of the CPSS-IOSCO

¹⁵ The multilateral co-operation arrangement facilitates the reciprocal exchange of regulatory information, perspectives and opinions between the participating authorities.

Principles, and work is under way to remove technical obstacles to providing multi-currency emergency liquidity to CCPs, including SwapClear.

With this progress in implementing the four safeguards, Canadian authorities are confident that they will have tools to protect the financial stability of Canada's OTC interest rate derivatives market under the global approach to clearing. Hence, authorities announced in October 2012 that Canadian market participants may use any CCP recognized by Canadian authorities, including global CCPs. This does not preclude the development and use of a local CCP in the future.

The Bank of Canada and other authorities in Canada will continue to work with authorities in other jurisdictions toward achieving the four safeguards at global CCPs, including SwapClear. In addition, they will monitor the evolution of OTC derivatives markets and the market for clearing services, both in Canada and abroad. Authorities in Canada will also need to monitor the implementation of the four safeguards at any CCP that becomes important to the stability of Canadian OTC interest rate derivatives markets or other systemically important financial markets.

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