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Central Clearing in Repo Markets: Do the Benefits Extend to Non-Dealers?

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Abstract

This note examines whether central clearing of repurchase agreements (repos) provides benefits not only to bank-owned dealers but also to non-dealer market participants in Canadian fixed-income markets. While prior research has largely emphasized the dealer perspective—showing that central clearing can reduce funding and balance-sheet costs—less is known about its implications for clients. Given the central role of repos in supporting liquidity and funding in Canadian fixed-income markets, understanding these broader effects is essential for evaluating the potential contribution of central clearing to market efficiency and resilience. This note explores how centrally cleared repos may affect non-dealer participation and considers whether expanded access to clearing could strengthen the overall functioning and stability of core Canadian funding markets.

Topics: Financial markets and funds management - Market structure
JEL codes: E44, G12, G21, G23

Résumé

Texte.

Sujets : Sujet
Codes JEL : E44, G12, G2, G23

Intro

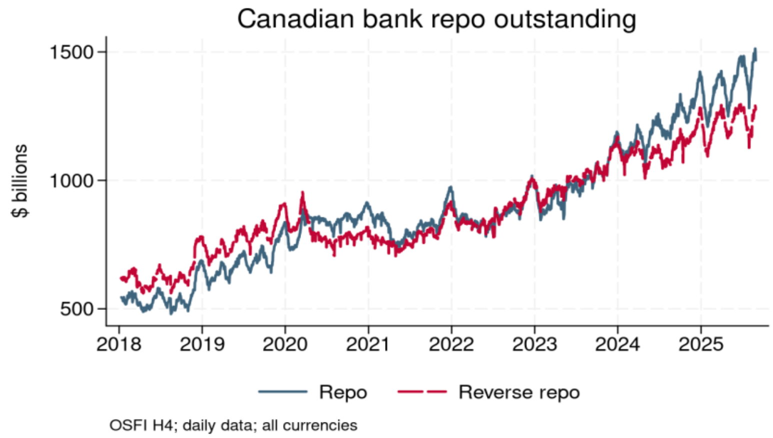
Central clearing has been put forward in recent years to make fixed-income markets more resilient (e.g., Group of Thirty, 2021; Fontaine et al. 2012). Prior analysis has mostly focused on the dealer's perspective, ascertaining that central clearing enables bank-owned dealers (hence "dealers") to reduce costs associated with repurchase agreements (repos; Chen et al. 2022). Since repos are critical to Canadian fixed-income markets, this note aims to explore whether clients (hence "non-dealers") also benefit from centrally clearing repos. This is important to understand whether central clearing adds efficiency and resilience to core Canadian funding markets beyond dealers and whether it could incentivize a broader set of participants.

In brief, we find that benefits of central clearing do appear to accrue to clients, likely as modest improvements to repo rates, and also importantly, by facilitating access to dealers' balance-sheet. While we don't directly test pricing, we infer price improvement from a natural experiment where central clearing was introduced in the interdealer market and cleared repos attracted price improvements. We use fiscal quarter-ends to examine balance sheet costs and find that central clearing is used more intensively during these times. Overall, we show evidence that central clearing can be seen as a tool used in coordination between dealers and their clients to manage access to dealers' balance-sheet and costs.

The role of bank-owned dealers in the Canadian repo market

Despite its size and importance, repo carries the risk of becoming unavailable during periods of wide market stress when it is most needed by market participants. Dealers can scale down repo activity quickly relative to other business lines since most traded repo tenors tends to be short term, often maturing within just one business day. In Figure 1, we show the daily aggregates of repo and reverse repo outstanding with the largest six Canadian banks. The total amounts are large, exceeding $1 trillion CAD in 2024, and can vary a lot, at times changing by over $100 billion CAD within a few weeks.

Figure 1



One reason dealers may often need to scale down their repo business in times of crisis is cost. Repo is characterized as being a high-volume, low-margin business, meaning quantities must be high to create significant revenue for banks. However, large quantities of repo and reverse repo are costly for dealers since the amount of cash borrowed and lent appear directly on their balance sheet as assets and liabilities, affecting capital positions, and the Leverage and Net Stable Funding Ratios as administered by Office of the Superintendent of Financial Institutions (OSFI). In a period of stress, when banks must manage scarce capital, scaling down repo can be a quick and effective tool.

Central clearing has been shown to reduce dealers' costs of repo through "balance-sheet netting," which allows dealers to reduce assets and liabilities associated with repo and reverse repo that appear on their balance sheets under certain conditions. Previous work found that if central clearing in Canada were to increase, dealers could benefit materially through balance-sheet netting, potentially providing them more capacity in times of stress (Chen et al. 2022).

A related question is whether the clients of dealers and bank-owned dealers could also benefit from central clearing. Large repo clients in Canada tend to be large pension funds, public sector institutions, wealth managers, and hedge funds who are not bound by the same regulations and public reporting obligations as dealers and therefore tend to currently see fewer direct benefits from centrally clearing repo. This may partly explain why most central clearing in Canada is done when repos are between two dealers or banks. However, dealers may pass on netting benefits when clients centrally clear repos in the form of better repo rates or more reliable access to repo funding (i.e. netting frees up balance sheet availability of dealers) when their capacity is diminished.

In this note, we take a closer look at central clearing by non-dealers to shed light on this question and to provide transparency into the benefits of central clearing in the Canadian repo market.

Central clearing results in better repo rates on an interdealer trading platform

Dealers' balance sheet costs can be measured using the repo bid-ask spread. The bid-ask spread is the difference in rates at which a dealer is willing to lend cash versus borrow cash. Dealers typically borrow cash at lower rates than they lend, part of which covers their costs, including costs associated with using the limited balance sheet of its affiliated bank. All else equal, a wider bid-ask spread indicates an increase in the cost of balance sheet.

To measure bid-ask spreads, we use data from an interdealer trading platform which is used by dealers to transact repos with other banks and dealers, known as an interdealer broker (IDB).[1] The data includes dealers' bids and offers for overnight-term, general collateral repos and reverse repos which we use to compute the quoted bid-ask spread.[2]

To examine whether centrally-cleared repos attract a different bid-ask spread, we use a transitional period in 2013 around the introduction of central clearing into the Canadian repo market. In this market, the Canadian Derivatives Clearing Corporation (CDCC) provides central clearing services which began in 2012 for over-the-counter repos. In 2013, central clearing through CDCC was enabled for repos done on IDBs. During this period, only some dealers were members of CDCC, and brokers offered both centrally cleared and non-centrally cleared repos to its members. Over time, as the majority of Canadian dealers became members of CDCC, central clearing became the dominant choice on the IDBs. The bid-ask spread was around 4.5 basis points from 2012 to 2014 (shown in Figure 2) while in more recent years it has been narrower.

We find that bid-ask spreads were narrower for centrally cleared trades during the transition period, in particular, the year before and after. Figure 3 shows the average bid-ask spread before and after the introduction of central clearing. The figure shows that bid-ask spreads were lower by around 1.5 basis points, and that this difference is statistically significant, given that the confidence intervals around the averages do not

[1] The inter-dealer broker repo market in Canada consists of three brokerage firms: Freedom, Shorcan and Tullets-Prebon

[2] Overnight general collateral repo is an appropriate product since it represents funding against the safest collateral, securities issued by the Government of Canada, rather than issuer- or bond-specific factors that may also change over time.

overlap.[3] However, we note that this analysis lacks a control group to account for other market-wide events or trends, which is a limitation.[4]

Figure 2

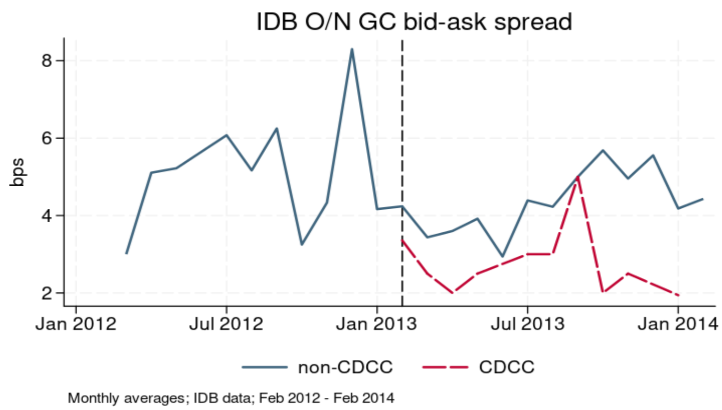
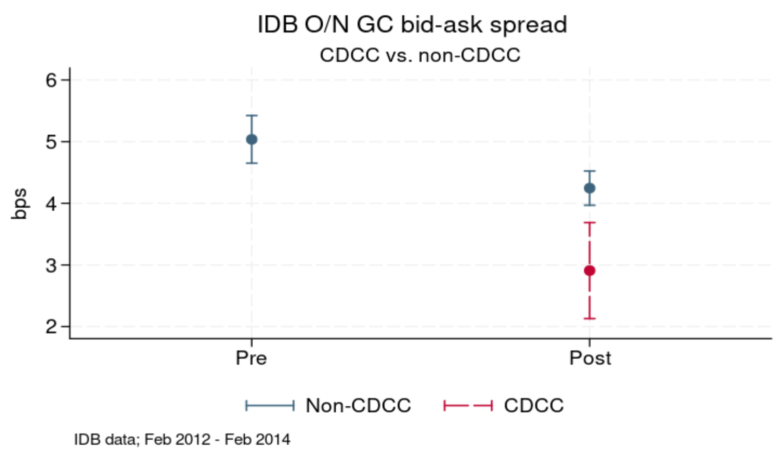


Figure 3



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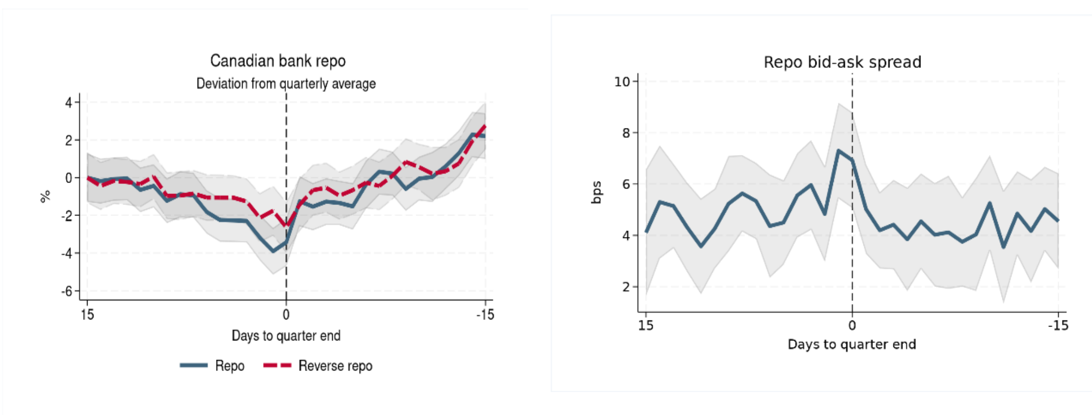
[3] The magnitude is also consistent with anecdotes from market participants on price improvement from central clearing.

[4] In addition, CDCC's introduction into IDBs enables fully anonymous repo trading, where users never learn the identity of a trading counterparty.[4] It is possible this affects repo rates although we lack a model or other evidence to distinguish this effect from balance sheet costs, another limitation of this analysis.

Repo becomes more expensive at quarter end due to balance sheet costs

To investigate the effects of balance sheet costs on repo bid-ask spreads, and how this affects non-dealers, we use fiscal quarter-end dates, when dealers publicly report financial statements related to their balance sheet, income, and regulatory ratios.[5] It is well-documented that in the days leading up to these reporting dates, dealers take actions to improve their financial position including by reducing repo and reverse repo (e.g., Bassi et al. (2023)). In other words, for dealers, it is costlier to hold repos and reverse repos on their balance sheet at quarter end, and they are incentivized to reduce them accordingly.

Figure 4



We find that for Canadian banks, a quarter-end effect is evident in smaller repo quantities and larger repo bid-ask spreads, consistent with Perli (2024), Bassi et al. (2023) and Sutherland (2017). Figure 4 shows that at quarter end, repo and reverse repo reported on-balance sheet are around 3-4% smaller while the repo bid-ask spread is around two basis points larger. This is consistent with bid-ask spreads reflecting the decline in balance sheet availability of banks during these periods. This is not unique to Canada as similar behavior in repo rates and balance sheet reduction are evident in other jurisdictions. One easily observable market is the US since their banks have different reporting dates than Canadian banks, although both report quarterly, they operate on a different cycle with a December year-end versus October year-end respectively.

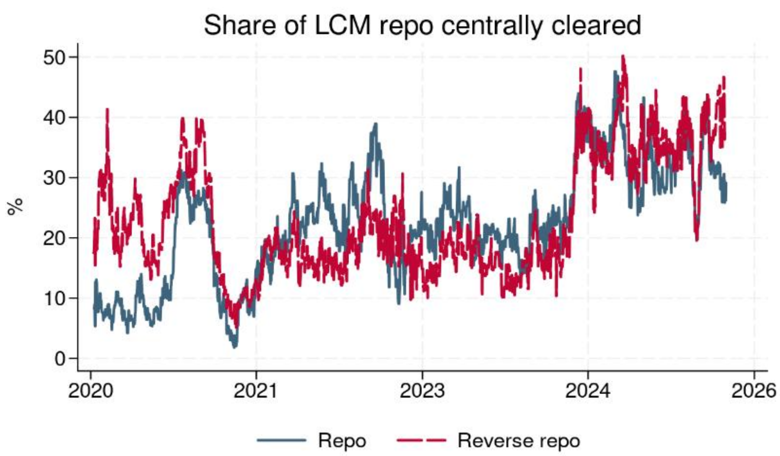
[5] Banks include the main Basel III ratios in these reports, including the leverage ratio, the net stable funding ratio, risk-weighted capital positions, and the liquidity coverage ratio.

Non-dealers centrally clear some of their repo

In addition to dealer repo, CDCC also clears some non-bank, non-dealer repo. Specifically, there are four Canadian pension funds who are Limited Clearing Members (LCM), a special class of CDCC member that does not contribute to the CCP default fund but instead faces higher margin requirements. As with dealer-to-dealer repo, LCMs have the choice to bilaterally or centrally clear repos with dealers.

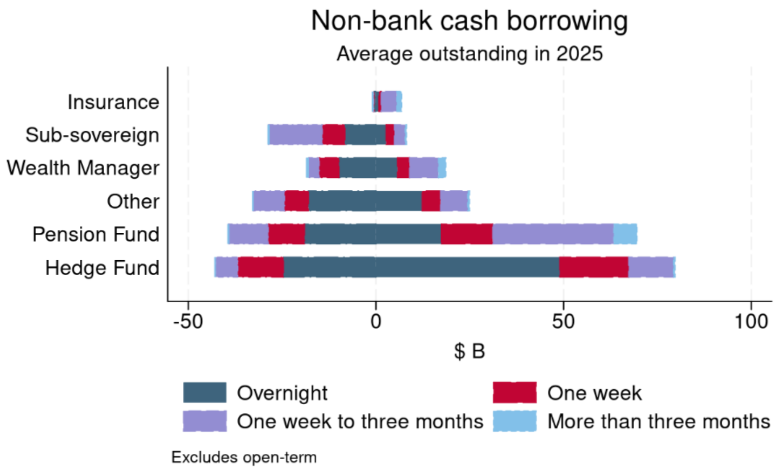
In practice, because LCMs are not subject to the same regulatory constraints and face costs when clearing (like the CCP's margin requirements), most LCMs typically centrally clear some, but not all, of their repos depending on their preferences, those of the dealers they transact with, and market conditions. In addition, central clearing can be more costly than bilateral clearing if margin requirements and per-trade fees outweigh the benefits of improved repo rates. Figure 5 shows that around 10-50% of total LCM repo and reverse repo is centrally cleared, depending on the period.

Figure 5



Another reason LCMs only centrally clear some of their repos is the lack of offsetting counterparties. While LCMs do repo and reverse repo at various terms, the majority of their repo is term cash borrowing, while repo cash lenders tend not to be members of CDCC. Figure 7 shows gross CAD repo cash borrowing and lending repo by different client groups and repo maturities (negative values indicate cash lending). Cash borrowing and lending vary substantially across client types, with pension funds (which include the LCMs) and hedge funds being primarily cash borrowers across a range or maturities, and sub-sovereigns (including provinces and government agencies) being important cash lenders, primarily in the maturity range of less than three months.

Figure 6



Clients centrally clear more repo when bank balance sheet costs are high

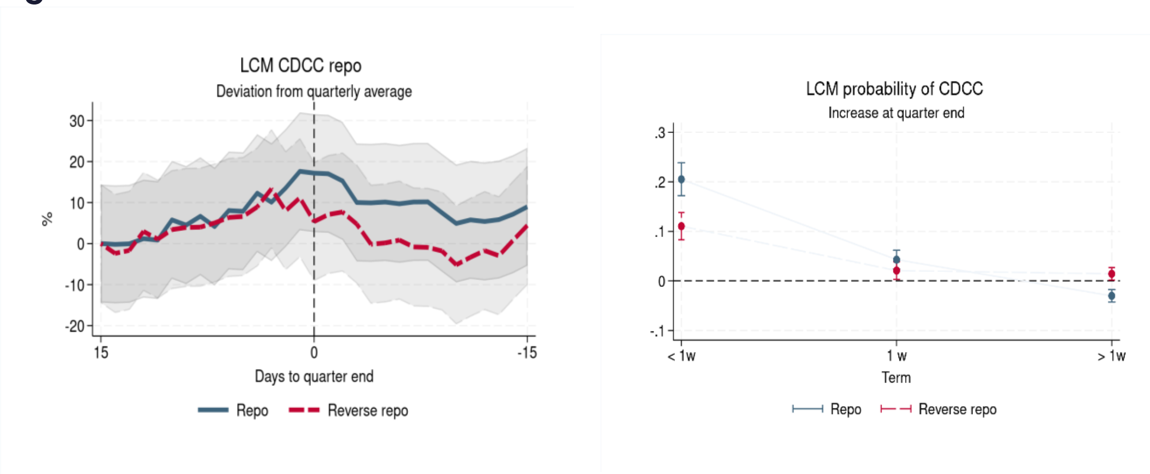
To examine how clients' central clearing activity changes with their dealers' balance sheet costs, we again use quarter-end reporting dates. In particular, we estimate the probability that an LCM will centrally clear their repo using a probit model and compare these estimates across quarter-end and non-quarter end repos, and repos with different times to maturity.

We find a significant increase in the probability of clients centrally clearing their repos at quarter end[6] as dealers seek to optimize balance sheet netting opportunities ahead of reporting dates. This likely comes as a result of requests from dealers to their clients to clear and, potentially, some improvement in the form of better repo rates and uninterrupted access to dealer balance sheet for funding. Figure 6 shows that short-term repos and reverse repos (those with less than one-week to maturity) are cleared with around 30% higher probability when they are done over quarter end. This is consistent with the growth in sponsored repo observed at month-end dates in the US market (Copeland and Kahn 2024). For one-week repos, the effect was smaller but still statistically significant. The stronger effect for short-term repos is consistent with dealers

[6] Specifically, repos and reverse repo that begin before a quarter end and mature after, such that they are included in assets and liabilities in quarter-end financial statements and related calculations.

realizing netting benefits from central clearing since short-term repos have greater possibilities to be netted with reverse repos due to the more volume trading for shorter maturity dates. Long term repos, on the other hand, are more difficult to net due to varying maturity dates becoming ever more likely with duration. Were the Canadian term repo market to grow, the netting opportunity would likely grow commensurately. Overall, this suggests that central clearing can insulate clients from shocks to dealer's balance sheets availability, representing a key benefit to client.

Figure 7



Conclusion

Overall, we show evidence that central clearing can be seen as a tool used in coordination between dealers and their clients to manage dealers' balance-sheet capacity and costs. These costs could be severe in a crisis, and so, going forward, increased central clearing in the Canadian repo market would make the repo market more resilient to stress, acting as a stabilizing force in Canada's fixed-income market more broadly.

It is possible that the ability to centrally clear could be seen by clients as an investment that improves their funding availability during the next crisis, however, there are currently several barriers to more central clearing by clients. First, set-up costs and systems requirements are currently barriers for some participants. In addition, the benefits of central clearing during normal times from netting may be relatively small in terms of rates, likely on the order of a few basis points, while the benefits during a crisis may be large but are difficult to measure. Second, many clients are not currently eligible for membership at CDCC, so a new membership model such as the successful sponsored model seen in other jurisdictions would be needed to include other classes of clients, such as hedge funds.[7] Moreover, the subset of clients that are currently eligible to centrally clear (i.e., large public pensions) may be among those least in need of improved funding stability in a stress event, as they are among the highest priority clients for dealers due to activity across multiple business lines (underwriting, derivatives, etc.) and have among the highest credit ratings.

Ultimately the industry will need to coordinate if central clearing is to be expanded. This is because, generally, there is no netting benefit to being the first to join a clearing house, so one cannot expect one entity to join without an assumption that others will. In addition, benefits would be greatest if clearing were expanded to bring together complementary cash lenders and cash borrowers with offsetting requirements of similar maturity terms.

Towards coordination, recent industry initiatives and the Bank of Canada announcement have gathered positive momentum in facilitating expansion of central clearing in Canada. The Collateral Infrastructure and Market Practices Advisory Group (CIMPA) recently launched a central clearing working group highlighting the strategic CDCC 2.0 expansion strategy roadmap. CDCC's phased approach to broaden market access to buy-side participants through a "sponsored model" would have a strong positive impact on network benefits by adding clients to the current dealer and pension fund membership. The Bank of Canada also announced that it intends to join the Canadian Derivatives Clearing Corporation (CDCC) to centrally clear its repo operations aligning with the global trend towards increased central clearing. The netting benefits will reduce friction in transmission of liquidity increasing efficiency and effectiveness of those repo operations. Additionally, the signal of conducting monetary policy operations within the CDCC eco-systems (as well as the new tri-party service called the Canadian Collateral Management Service) should provide a positive signal and motivate new participants to join the infrastructures.

[7] For example, in the US, the "sponsored model" has seen rapid growth in recent years. For details, see: https://libertystreeteconomics.newyorkfed.org/2025/10/the-rise-of-sponsored-service-for-clearing-repo/

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