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Central clearing in government bond markets: keeping the “safe asset” safe?

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Central clearing in government bond markets: keeping the “safe asset” safe?

Key takeaways

- *Government bond trading is typically over the counter, with dealers playing a key role as intermediaries. Pressure on their intermediation capacity is set to increase as government debt continues to grow.*
- *Enhancing the volume of centrally cleared transactions could help mitigate risks to market functioning by freeing up the balance sheet of dealers and encouraging all-to-all trading.*
- *The need for liquidity management will remain. Fixing the “plumbing” alone may have limited impact in a market-wide deleveraging episode with one-sided flows. Hence central clearing of government bonds and repos would not fully eliminate financial market risks but would change their nature.*

Government bond markets – traditionally viewed as safe havens, at least in many advanced economies – have become focal points of market stress.¹ Liquid and well-functioning markets for government debt critically rest on the intermediation capacity of dealers, which often form part of large banking groups. This capacity has been pressured by both the trajectory of government debt, which has been on an upward trend since the Great Financial Crisis (GFC), and the growth of leveraged strategies by investors that lead to one-sided markets during stress episodes (Schrimpf et al, 2020). Hence, the safe asset typically continues to be “safe” in terms of credit risk but faces mounting concerns about the ease of buying and selling it in a stressed market environment.

Against this backdrop, enhancing the resiliency of government debt markets has been high on the policy agenda in national and international forums. Encouraging central clearing for government bond trades – as authorities in the United States are currently doing – is a key component of this strategy. The policy goal is to bring the structure of bond trading closer to the more resilient setup in equity trading, which relies heavily on central clearing. Yet, as we argue in this piece, central clearing of government bonds and repos would not fully eliminate financial market risks but would change their nature.

The need to intermediate sovereign debt will continue to grow

Since the GFC, government debt has followed an upward trajectory, as governments took on a more active role in a number of advanced and emerging economies. According to the OECD (2024), the total volume of sovereign bonds outstanding has increased from \$26 trillion in 2008 to \$64 trillion in 2023. Projections suggest that this trend will persist in the years to come (Graph 1.A).

Sovereign bond markets are typically intermediated by a select group of dealers that connect buyers and sellers, facilitating trades among a large set of investors. In the United States, their role is

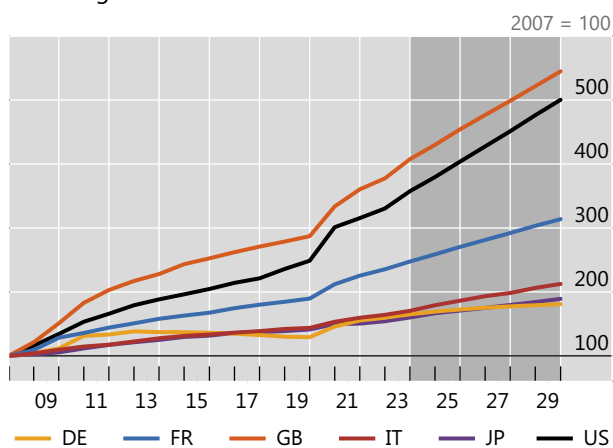
¹ Significant instances include the surge in US Treasury repo rates in September 2019, the “dash for cash” triggered by the onset of the Covid-19 pandemic in March 2020 and the mini-budget crisis in the United Kingdom in September 2022.

complemented by principal trading firms (PTFs) that actively participate in the inter-dealer segment of the market via high-frequency market making strategies. These PTFs have evolved into significant liquidity providers for “on-the-run” (benchmark) securities. At the same time, the dealer-to-customer segment and trading of previously issued “off-the-run” securities rely on more traditional players, even in the United States. Furthermore, in Europe and Japan, there is no significant PTF participation in the cash bond market, as barriers to entry have historically proven higher than in the United States.

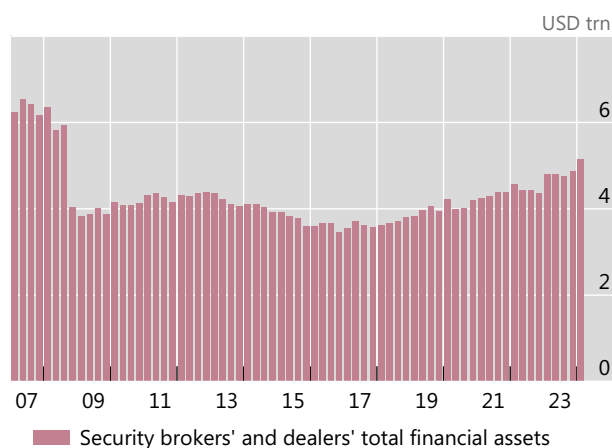
Government debt and dealers’ assets

Graph 1

A. Total government debt¹



B. Total assets of US broker dealers



¹ The shaded area indicates forecasts.

Sources: Board of Governors of the Federal Reserve System; IMF, World Economic Outlook; authors’ calculations.

While the volume of sovereign bonds has grown and will continue to grow, the balance sheets of dealers who intermediate these flows increased substantially less (Graph 1.B). As a result, the additional projected increase in sovereign debt will put further pressure on dealers’ balance sheets. In the United States (Duffie et al (2023)) and in Europe (Ferrara et al (2024)), there is evidence that market functioning is significantly impaired if dealers already hold many bonds on their books. While in normal times government bond market liquidity moves in parallel with volatility, this is not the case when dealer capacity is constrained, such as in March 2020.² In these instances, liquidity deteriorates much more significantly, as shown by the steeper, darker lines in Graph 2.A. Furthermore, price-based measures of trading conditions in the US Treasury market indicates worsening liquidity in the past five years (Graph 2.B).

From a systemic perspective, central clearing has numerous upsides...

The US Securities and Exchange Commission (SEC) recently put in place new rules on the central clearing of many repo and cash trades. Consequently, it is anticipated that the US repo market will become almost fully centrally cleared, as will the cash Treasury market to a large degree.^{3, 4}

Central clearing is a process in which a central counterparty (CCP) interposes itself between two counterparties in a financial transaction, after the parties agree to it. For a long time, central clearing had been commonplace in equity, futures and options, where the anonymous nature of trading and the

² And indeed, central banks intervened forcefully at that time, relieving the pressure on dealers.

³ The SEC rules also require many PTFs to register as dealers and become members of the Fixed Income Clearing Corporation (FICC).

⁴ Another key reform is to enhance the transparency of trading, which is a vital ingredient for fostering participation in bond trading (see Bakopoulou and Scheicher (2024)).

presence of a large number of intermediaries made it easier for CCPs to emerge. Following the GFC in 2008, G20 leaders advocated for standardised OTC derivatives transactions to be centrally cleared. As a result, central clearing is now much more prevalent in many derivatives markets such as interest rate swaps. During the past decade, major CCPs have proved to be resilient through several stress events, most recently in the energy crisis in 2022.

Bilateral clearing has been predominant in the OTC cash and repo segments given the greater reliance on a small set of dealers to intermediate trades (see Table A.1 in the online appendix).⁵ These two segments of the market are closely linked, and the liquidity in both is determined jointly. Cash trading provides price information for the collateral used in repos: players in the repo market may rely on the cash market to source their collateral, and cash market traders may rely on the repo market as a source of funding.

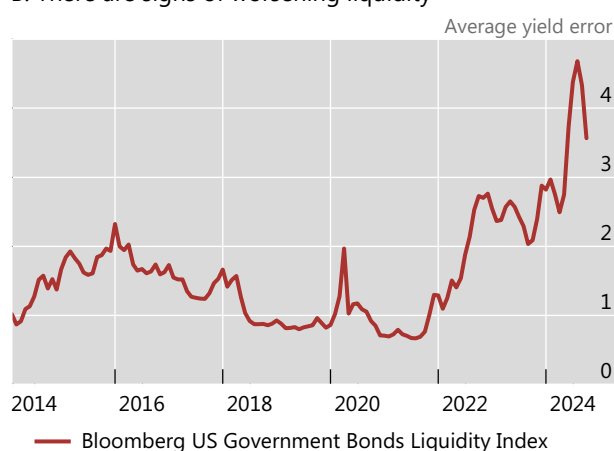
Bond liquidity and volatility

Graph 2

A. Liquidity declines if dealers are constrained¹



B. There are signs of worsening liquidity



¹ Bid-ask spread on 10-year government bonds. The index for the United States is the MOVE index; for Germany it is the one-month SMOVEU Index.

Sources: Bloomberg; LSEG Tick History; authors' calculations.

Central clearing has been seen as a way to improve intermediation through several channels (Duffie (2020), Group of Thirty (2021)).

First, the presence of a CCP would reduce the strain on dealers' intermediation capacity by freeing up space on their balance sheet. Increasing central clearing lowers the overall net exposures compared with a network of bilateral relationships, as the trades will be netted. Counterparty credit risk is considerably reduced, as all market participants are exposed only to the CCP (Graph 3). This could free up capacity on the balance sheets of dealers. Some studies (summarised in Table A.2 in the online appendix) have tried to estimate the magnitude of such changes, with mixed results overall. On one hand, Fleming and Keane (2021) estimate that central clearing in the US cash government bond market could reduce dealers' settlement obligations by as much as 70% during periods of high trading volume. In the United Kingdom, Baranova et al (2023) highlight potentially large netting efficiencies in the repo segment of the market. On the other hand, Bowman et al (2024) argue that repo central clearing in the United States would yield

⁵ Bond futures trades are executed on exchanges and therefore already fully centrally cleared.

limited reductions in balance sheet costs associated with the leverage ratio due to the currently already high netting of exposures.⁶

Second, central clearing would also reduce the risk of settlement failures. In a network of bilateral exposures, the failure of a counterparty to deliver the bond tends to reverberate, as the participant who was counting on receiving the bond will not be able to use it to fulfil obligations that it may have with other traders. The presence of the CCP considerably reduces this risk, as the clearing house will have access to all the bonds delivered to it with additional positive effects on the balance sheet of dealers. Fleming and Keane (2021) estimate that settlement failures could be reduced by three quarters.

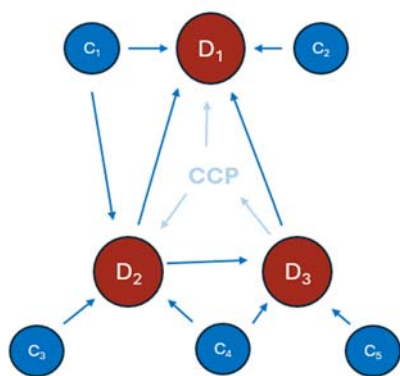
In addition to reducing counterparty credit risk and settlement failures, central clearing may also provide indirect benefits. Importantly, it may promote the development of "all-to-all" trading, which further reduces the need for dealer intermediation. Central clearing encourages all-to-all trading in two main ways. First, it lowers the benefits of trading with well-capitalised large banks. Given that traders would ultimately face the CCP, there is little reason to prefer trading with a bank from a counterparty credit risk perspective. Second, it eliminates the advantage of inter-dealer brokers who can maintain their clients' anonymity by clearing trades on their own book. At present, market participants that want to maintain anonymity must rely on inter-dealer brokers. Such brokers have therefore morphed over time into de facto clearing houses for the participants active on their platforms (TMPG (2019)). If central clearing becomes the default option, this advantage of inter-dealer brokers would disappear, removing an additional obstacle to all-to-all trading.

By encouraging all-to-all trading, the market may become less fragmented and more resilient. More diverse traders (with diverse trading needs and that may not face constraints simultaneously) may be willing to step in as liquidity providers at times of stress.

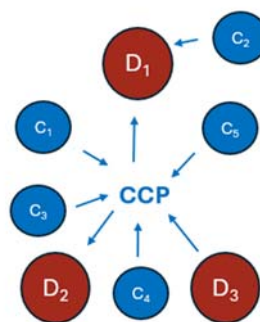
Exposures in bilaterally and centrally cleared networks

Graph 3

A. A dealer-intermediated network



B. A mostly centrally cleared network



The graph illustrates how dealers (in red) and clients (in blue) interact in a dealer-intermediated network and in a mostly centrally cleared network. In panel A, dealers are exposed to the CCP (but not by much, as only a limited number of trades are cleared), to clients and to other dealers, while clients are exposed to dealers. In panel B, essentially all of the exposures are vis-à-vis the CCP, highlighting the reduction in counterparty credit risk.

Source: authors' elaborations.

⁶ The leverage ratio is a prudential requirement that mandates banks to maintain a ratio of capital to total assets above a fixed threshold. Unlike in risk-based requirements, all assets are treated in an equivalent manner, irrespective of their riskiness.

...but central clearing also comes with potential challenges

Despite its systemic advantages, central clearing of government bond trades is no panacea. A CCP will not solve the problems when markets are hit by pressures from one-sided flows, eg resulting from the unwinding of leveraged trades. Furthermore, challenges associated with central clearing, which have been debated extensively in derivatives markets, would also apply to government bond markets, albeit to different extent.

CCPs manage their risks by requiring their members to pay margins to reflect the current exposure of their positions (variation margin) and potential future exposure (initial margin) to protect against a clearing member's default (Boudiaf et al (2023)). In cash government bond trades – in contrast to derivatives markets – the contracts are in place only between trade execution and settlement (typically one business day). In repo markets, trades can be in place for longer, but most of these trades have a short-term horizon (typically overnight). However, market participants are likely to trade repeatedly, and their positions may be particularly large and hence will require substantial margins. The reliance on margins to manage risk has two implications. First the amount of margin to be paid to the CCP will increase with the volume of trades. Second, the ecosystem would likely become less diverse, with many traders having the same position in bond markets asked to pay additional margins at the same time during the day.

Additional margins required in cash and repo markets are likely to be substantial for participants that would be required to centrally clear their trades. The FICC (2024) recently estimated that total additional margin requirements due to the newly introduced SEC rules could be around \$58 billion. This amount is small compared with total initial margins in US derivatives markets (over \$1 trillion) but would represent a substantial increase for those participants who are currently not centrally clearing their trades. These participants will also need to improve their capabilities and corresponding cash reserves to manage these additional margins, which can rise suddenly to much higher levels in high-volatility episodes.⁷

The reliance on margins could also exacerbate the unwinding of leveraged trades – even if these trades are not in the government bond market. As members of the CCP will likely be active across multiple asset classes, any margin-related decision by the CCP would strongly affect liquidity risk system-wide, with the risk of creating adverse feedback loops.

The final challenge of central clearing for government bonds is the fact that a CCP would arguably become one of the most systemic entities in the entire financial system. As noted in Tucker (2011), it would become the system's risk manager. Netting efficiencies and economies of scope suggest it is unlikely that multiple CCPs would be able to remain active in a competitive market. This may lead to a single monopolistic CCP that would be responsible for all clearing of government bond trades in one jurisdiction.

But there are additional reasons why such an entity will be highly systemic. First, the government bond market underpins the price formation of many other assets, as government bond yields typically represent the risk-free rate used to value them. Second, government bond repo markets serve as an important source of funding liquidity for market participants (eg non-bank financial institutions) that may not have direct access to central bank liquidity. Furthermore, the CCP will likely face serious stress only in extreme situations. Hence, it is important to consider further increasing the resilience of such a systemic CCP to very large levels of financial and operational stress, above the already elevated level of resilience that CCPs in other markets are subject to. Current approaches set out in the Principles for Financial Market Infrastructures (PFMI) follow a "belt and braces" philosophy with multiple lines of defence. The PFMI include standards for a CCP's total financial resourcing, including an on-the-margin framework and default fund sizing, coupled with extensive stress testing. In parallel, intrusive and effective supervision of the CCP's risk management is crucial. Consistent with the PFMI, as supplemented by relevant guidance (CPMI-

⁷ One risk is that low margining in calm periods may lead to the build-up of leverage in the non-bank sector, as highlighted by the debate on the US Treasury cash-futures basis (cf. Schimpf et al (2020)). The most recent illustration for the reaction of margin requirements to sharp market moves is the high-volatility episode in early August 2024, where margin calls increased by a factor of three (Clancy (2024)).

IOSCO (2017)), CCPs should develop comprehensive, effective and transparent recovery plans, with comprehensive supervisory scrutiny.⁸ Finally, the concentration of operational and cyber risk in a single critical node of the financial market infrastructure also raises additional challenges for the CCP.⁹

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⁸ Jurisdictions have also put in place different mechanisms for a CCP's access to central bank lending facilities.

⁹ Kerssenfischer and Helmus (2024) describe various operational events that have highlighted vulnerabilities in the operational resilience of vital trading venues and clearing and settlement systems in recent years.