GLOBAL MARKETS ANALYSIS
Monetary and Capital Markets

Expanding central clearing in Treasury Markets (2)

Friday, May 24, 2024

SUMMARY

The US Treasury market is considered the deepest and most liquid financial market. Yet, various episodes in the past decade demonstrated that liquidity can abruptly evaporate, causing dysfunction in the market. In response, policymakers have made significant progress in improving both market's resilience and appropriate surveillance (see IAWG (2023) report). The 2023 US Securities and Exchange Commission (SEC) rule, mandating an expansion of central clearing in Treasury cash and repo markets is an integral part of this progress. According to market participants, this new rule is one of the most consequential reforms in the Treasuries market in recent years.

This Special Feature summarizes the adopted rule[1], discusses its impact on the structure and practices of the Treasury market as they stood at the end of 2023 when the rule was adopted, and describes the challenges associated with its implementation.[2] In short, the adopted rule considerably expands existing mandates for central clearing in secondary Treasury cash and repo markets. Market participants widely recognize its merits in improving market resilience and liquidity, such as the likely reduction of counterparty and settlement risks while increasing dealer balance sheet capacity. However, challenges remain. The new rule will significantly expand the volume of transactions that need to be cleared, creating operational challenges for the current central counterparty clearing venues. Additionally, the new rule may result in higher clearing costs, driven primarily by increased margins and other trading costs related to facilitating access to clearing.

I. THE SEC RULE ON CENTRAL CLEARING

In December 2023, the SEC adopted a rule that expands mandatory central clearing in Treasury cash and repo markets. Under this rule, the Fixed Income Clearing Corporation (FICC)—currently the sole central counterparty (CCP) clearing platform for Treasuries—is required to broaden the scope of clearing for Treasury cash and repo secondary market transactions. Direct FICC participants, including dealers, will now need to clear their trades with an extended list of eligible market participants. These eligible counterparties encompass bank-affiliated and broker dealers, inter-dealer brokers (IDBs), asset managers, and investment funds. Notably, hedge funds (HFs) are excluded from the list of eligible counterparties for cash clearing, while official institutions (such as central banks, sovereigns, and international institutions) and natural persons are excluded from both cash and repo clearing lists. To facilitate this expansion in clearing trades, the rule mandates key changes in the FICC's rule book, including adjustments to margin calculations and expanded access to clearing for the newly eligible market participants.[3]

[1] See SEC (2023) https://www.sec.gov/news/press-release/2023-247

[2] See Special Feature "Expanding Central Clearing in Treasury Repo Markets" from November 11, 2022 for a summary of the SEC proposed rules and a discussion of the benefits and costs of expanding central clearing.

[3] The rule includes the following key changes: First, the FICC will need to develop and expand access models to ensure that eligible trades can be cleared. This is discussed in more detail in Box 1. Second, the CCP will collect margin separately for non-member trades submitted for clearing, contrary to the current practice, where the FICC collects one net-margin amount for both own member's and their client's trades to the CCP. According to the SEC, segregating margin can protect the client's cash and collateral in the event of a member default on the CCP. Third, the SEC allows a segregation of customer and dealer margins, which can protect the customer, free up dealer resources and reduce margin costs. In the standard practice before the rule implementation, the SEC allows dealers to include customer margin that is required on deposits at the FICC as a debit in the customer reserve formula in certain trades. This debit allows dealers to segregate customer margin and use it only for customer obligations, specifically to satisfy FICC margin requirements. The segregation can protect the customer (i.e., from dealer losses), but also allows the dealers to offset the cost of the margin they submit to the CCP on behalf of their clients against their reserve requirements. This can free up resources (such as cash and securities) that can be used as margins, improve liquidity management and enhance operational efficiency. According to the 2023 IAWG report, prior to the rule broker-dealers were not permitted to include such a debit in the customer reserve formula or, more generally, to use customer cash or excess margin securities to meet margin requirements from the FICC. The SEC believes that applying this change to all cleared trades would help to address the potential substantial increase in the margin that broker-dealers would be required to post to the FICC resulting from their customers' cleared Treasury securities positions.

This Monitor was prepared by Kleopatra Nikolaou and Yiran Li

The implementation will be staggered, with the endpoint envisaged in mid-2026. As the new rule requires revisions in the FICC written policies filed with the SEC, the filings regarding changes in margin calculations should become effective by March 2025. The remaining proposed rule filings must become effective by December 31, 2025, for cash trades, and by June 30, 2026, for repo transactions. An additional commenting and review period will also take place and guide the FICC revision of its rule book.

The final rule came as a positive surprise to markets compared to the original proposal, thanks to key changes. Notably, it extends the phase-in period to 2.5 years, which is important, given the operational changes required. Additionally, the rule exempts Hedge Funds from the obligation to centrally clear their transactions in the Treasury cash market—a departure from the initial SEC proposal. The SEC chose to address systemic risks related to the actions of Hedge Funds by expanding the central clearing mandate for Hedge Funds in the repo market only, given that Hedge Funds actively participate in the Treasury repo market (to fund leveraged bets).

Despite the favorable reception, significant implementation challenges remain, which are discussed in the following sections of this special feature. Section II provides an overview of the Treasury market structure and practices as it stood at the end of 2023, when the rule was mandated. Section III explains how the market structure will change following the rule and quantifies the market volumes that will shift to central clearing. Sections IV and V discuss the balance between benefits and costs from the move to central clearing and Section VI places the rule into a broader context of measures adopted to support the resilience of the Treasury market.

It is worth clarifying that central clearing is a fundamental shift from bilateral trading practices.[4] In a bilateral trade, two counterparts agree directly on the trade and are responsible to see it completed. In a centrally cleared transaction, a single counterparty, the central clearing counterparty (CCP) interposes itself between the trade counterparts. Instead of the counterparts trading bilaterally, the CCP becomes the seller to all buyers and the buyer to all sellers who are clearing members. In so doing, the CCP assumes and guarantees their trade obligations (a process called novation). Thus, clearing members maintain a single exposure to CCP instead of being exposed to a range of bilateral counterparts and the CCP can combine, match and net the exposures of all its clearing members in its balance sheet. In this way, the CCP reduces counterparty credit and liquidity risk exposures. It also provides standardized and transparent risk management that support its guarantee of trading performance.

II. TREASURY MARKET STRUCTURE AND PRACTICES

The US Treasury market has three segments: the cash market, which includes outright purchases and sales of US Treasury securities; the repo market, which uses Treasury securities as collateral for secured funding; and the futures market, where market participants trade futures contracts based on US Treasury securities. The futures market is already centrally cleared and therefore does not enter the scope of the SEC rule. We will focus on the structure of the repo and cash market.

- **Treasury repo market:** The Treasury repo market, a $4 trillion market[5], is divided into two segments based on settlement practices: triparty and the bilateral repo markets. Both segments are affected, with the bilateral segment being the larger one.
    - **The tri-party repo market** plays a crucial role in dealer funding. In this market, cash-rich investors, such as money market funds (MMFs), invest their cash with dealers and receive securities as collateral. The trades are facilitated by the clearing and settlement infrastructure provided by a third bank, which acts as an agent and not as a CCP. Triparty repo (TPR) transactions fall into two segments: General Collateral Financing (GCF), which are transactions cleared through FICC's GCF repo service, and TPR transactions excluding GFC. Most of the latter are not cleared through FICC, but recently dealers can sponsor MMFs to centrally clear repos through the FICC. Overall, at the end of 2023, cleared trades made up a relatively small, but growing part of the TPR market, supported by a gradual increase in sponsored trades.
    - In **the bilateral repo market** dealers and non-bank financial institutions (NBFIs) source cash and Treasury securities. Dealers typically channel the liquidity raised in the tri-party market to Hedge Funds in direct trades that settle bilaterally. Most bilateral trades remain uncleared. Cleared bilateral trades include a small but

[4] See BIS (2015), [Central clearing: trends and current issues (bis.org)] and Chicago Fed 2005, [Clearing and Settlement Demystified - Federal Reserve Bank of Chicago (chicagofed.org)]

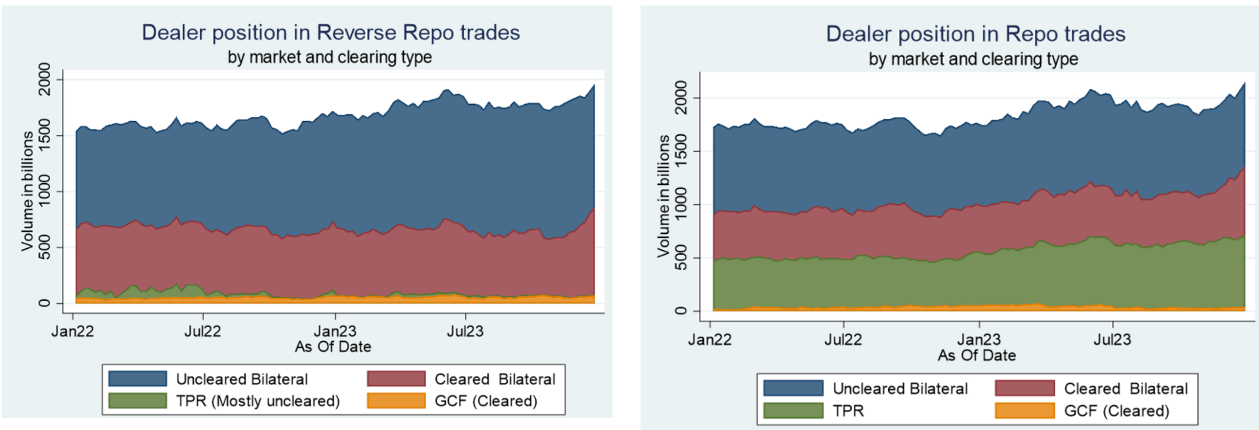
[5] Based on repo positions reported by primary dealers in the FR2004 data. See also [The Fed - Insights from revised Form FR2004 into primary dealer securities financing and MBS activity (federalreserve.gov)]

growing bilateral sponsored repo segment, where dealers sponsor institutions (Hedge Funds) to centrally clear repos, and a larger intra-dealer bilateral repo market.

- **Figure 1 below shows repo (securities out) and reverse repo (securities in) volumes that primary dealers report to the NY Fed, broken down by clearing type.** As of the end of 2023, approximately 30 percent of all repo and 40 percent of reverse repo volumes were centrally cleared. The non-centrally cleared bilateral segment remains the largest segment of the market. This segment is opaque, with limited information on trading and risk management practices, as well as on the type of participants involved. Nevertheless, while around 20 percent of Treasury bilateral repo volumes were centrally cleared in 2022, at the end of 2023 this part increased to almost 40 percent, largely thanks to sponsored clearing.

Figure 1. Dealer positions in Treasury reverse repo and repo trades

(Volume in billions)



Notes: The charts present a breakdown of the different market segments in the US Treasury repo market, as reported by primary dealers. Data on the sponsored tripary repo segment are not reported separately.

Source: NY Fed and staff calculations

- **Treasury cash market.** This is a $1trillion market divided into an inter-dealer and a dealer-to-client segments, each roughly similar in size. Direct trades between dealers are typically centrally cleared, as dealers are members of the FICC. However, a significant portion of the inter-dealer market involves trades between dealers and relatively newer market participants known as Principal Trading Firms (PTFs). PTFs trade on their own accounts and dominate the use of automated, high-speed strategies for electronic trading. Since PTFs are not members of the FICC, trades involving PTFs are typically settled bilaterally and are not cleared.[6] Trades in the dealer-to-customer market—which includes Hedge Funds[7], asset managers and pension funds), and represent around 45% of the Treasury market trade volume—typically also settle bilaterally through a clearing bank, as these market participants are not members of the FICC. Overall, only a small portion of Treasury cash transactions, just over 10 percent, were estimated to be centrally cleared in recent years.[8]

At present, the FICC is the only central clearing venue for US Treasuries, although more may enter.[9] **Direct access to the FICC's clearing services is reserved for members of the FICC.** Being a member involves adherence to strict regulatory requirements, therefore members are limited to banks and broker dealers. Non-members, which include MMFs, Hedge Funds or smaller dealers, can access clearing facilities in two ways. They can be sponsored by their FICC member (usually a dealer) to clear their bilateral trades. Otherwise, they can trade with other FICC members via a correspondent FICC member, otherwise called prime broker (**Box 1**).

[6] See The Fed - Principal Trading Firm Activity in Treasury Cash Markets (federalreserve.gov)
[7] Although public data on the share of Hedge Funds in the dealer-to-customer cash market is limited, it is known that they play a large role in this market segments. They typically finance their positions by borrowing cash in the Treasury repo market.
[8] See TMPG 2019, White Paper on Clearing and Settlement
[9] Industry reports affirm that the CME Group plans file an application to become a Treasury clearer. This movement may enhance competition between venues for the business of Treasury clearing, potentially reducing clearing costs for investors.

III. THE RULE EXPANDS CENTRAL CLEARING SIGNIFICANTLY

The new rule substantially expands the market size of centrally cleared trades, mainly for the repo segment. The rule mandates central clearing for all repo and reverse repo transactions, with the exception of certain official sector entities including the Federal Reserve. Otherwise, all counterparts including Hedge funds, MMFs, and other asset managers will need to clear their repo trades. In the cash markets, the rule mandates that all interdealer trades executed on IDB platforms be centrally cleared.[10] IDBs and government securities dealers become eligible counterparts for clearing, with the exception of cash transactions between the former and Hedge Funds. However, in February 2024 the SEC issued additional regulation to expand the designation of broker dealer to most PTFs and certain hedge funds, which should further broaden the scope for central clearing.[11]

According to FICC, the adopted rule will additionally cover $1trillion in repo trades and another $600bn in cash transactions per day.[12] Some market participants argue that volumes can grow considerably higher, considering that dealers report more than $4trillion in both repos and reverse repos, with uncleared volumes constituting more than half of the reported trades. **Since the rule was adopted, the expansion is already underway**, with DTCC and MMFs reporting strong growth in clearing volumes and notably sponsored repo (see also Figure 3 in appendix).[13]

Figure 2 quantifies the impact of the rule on the centrally cleared volumes in repo and cash Treasury markets. We use flow charts based on available data to approximate the shift in market volumes required to be cleared by the rule, based on the current market structure.

- **Almost all repo involving dealers as counterparts will become centrally cleared.** The first panel of Figure 2 presents the repo market structure and the volume of cleared and uncleared trades pre- and post- the implementation of the SEC rule, as reported by primary dealers. Before the implementation of the rule, roughly 40% of repos are being cleared (based on estimates at the end of March 2024). The SEC rule expands central clearing for a substantial part of repo transactions, notably bilaterally uncleared trades and TPR uncleared trades. As a result, almost all repo activity in the market becomes centrally cleared. The uncleared part represents our assumptions on the size of the official sector that participates in repos with dealers. The chart excludes repos with the Federal Reserve.
- **The SEC rule expands central clearing for cash transactions to a lesser extent compared to repos.** According to our rough calculations, given the limited availability of public data, the SEC rule will increase the share of the cash market that is cleared from roughly 25 percent to almost 65 percent (Figure 2 lower panel). More precisely, the intra-dealer market, almost half of the total cash market, will become centrally cleared, with IDBs and PTFs entering under the scope of the rule. Some hedge funds are also expected to enter the scope in line with the additional SEC regulation in 2024 (see footnote 10), and therefore some parts of the dealer to client market are also included in the chart based on rough assumptions, as precise volumes are not known. The official sector (not shown) remains outside the scope of clearing.

Official sector trades are excluded but can be substantial. For example, in the case of the Federal Reserve, both the Reverse repo facility and the Standard Repo Facility (liquidity absorbing and providing operations respectively with Treasury collateral) are settled in the tri-party platform. The size of the Federal Reserve's RRP facility in the past exceeded $1tr dollars and more recently stood at around $500bn, roughly 20% of the TPR market and 40% of the total repo market. There are considerations by both the Federal Reserve and other policy makers to include the Federal Reserve repo facilities in central clearing at a later stage (see also Figure 3.3 in Annex).

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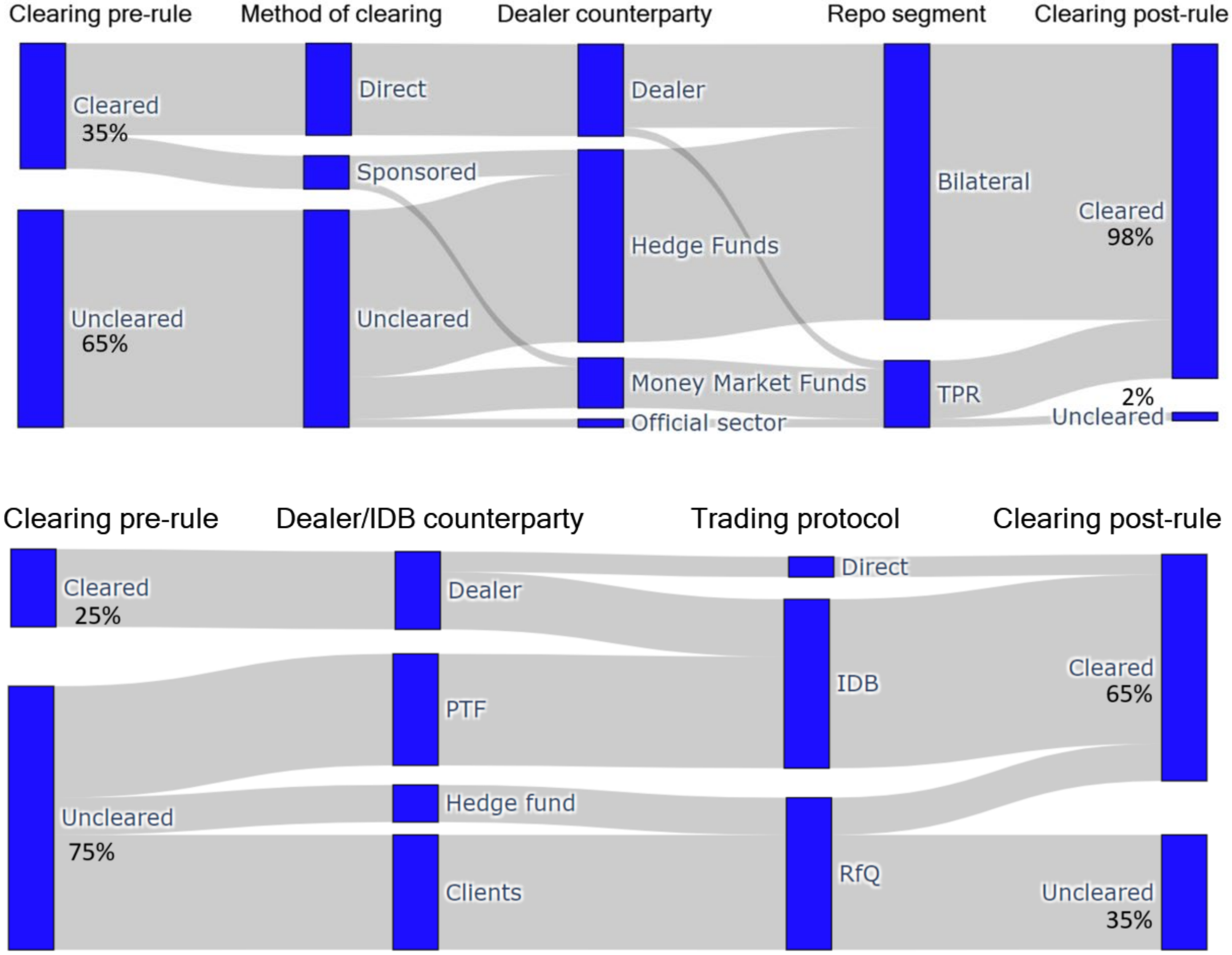
[10] In most cases, dealers trade amongst them via anonymous, electronic trading platforms operated by interdealer brokers (IDBs), most of which are also members of the FICC. Dealer's trades with PTFs are settled via IDBs, which acts as counterparts to the dealer and the PTF separately. Trades between PTFs and IDBs are settled bilaterally and are not centrally cleared. In 2018, IDB platforms covered almost 90% of the interdealer market, with the 10% covered by direct trades between dealers. PTFs represented around 61% of the volume on the interdealer broker platforms in the Treasury markets. The dealer to customer market typically does not involve IDBs, it is rather a request for quote market.

[11] In February 2024, the SEC adopted rules to classify large market participants as "dealers" or "government securities dealers" to enhance market transparency and resilience, notably in Treasury markets. The adopted rule includes major Hedge Funds, although not all hedge funds, as was originally the proposal. The rule mainly targeted high-frequency traders (PTFs). Since the adoption, three large Hedge Funds moved legally against the SEC rule on grounds that, amongst others, economic consequences would be grave.

[12] See Accessing-Potential-Expansion-US-Treasury-Clearing-White-Paper.pdf (dtcc.com)

[13] See DTCC's FICC Treasury Clearing Volumes Grow 31% | DTCC and Risk net: US MMFs' cleared repos top half-a-trillion dollars - Risk.net

Figure 2. Changes in market volumes of cleared and uncleared trades following the SEC rule



Notes: The flow chart maps the changes in clearing practices following the SEC 2023 rule. The blue pillars show structural elements of the market and the gray parts show the flows in terms of dollar amounts (in percentages). The left pillar shows the percent of volumes cleared before the rule implementation and the last pillar shows the percent of cleared and uncleared volumes following the implementation of the rule. The methods of clearing can be direct (between the CCP and its participant), Sponsored (when a member of the CCP sponsors a non-member into clearing) and uncleared, where no CCP is involved. The correspondent method of clearing is not included, due unavailability of data. Anecdotal evidence suggests that the volumes in the correspondent method are very small. Dealers take the one side of the trade, with the other part of trade is portrayed in the “Dealer counterparty” column. The Counterparty categories contain major investors in each category but do not exclude other investors. The repo segments column represent settlement practices, which are either bilateral, where counterparties settle with each other, or triparty (TPR), where a third party, the tri-party agent, provides operational and other related services to the trade counterparts, but does not act as a CCP. The trading protocol in the cash market is either Direct, where dealers trade with the CCP directly, via IDB, where dealers trade with other dealers and PTFs bilaterally or via a CCP, and RfQ, where dealers typically trade bilaterally with clients.

Sources: Sizes of flows in the repo market are based on daily average volumes and are approximations as of end of March 2024. The size of the repo market segments are approximated by using Federal Reserve data on primary dealer positions (FR2004) and data on sponsored repo volumes from DTCC). The size of the Cash Treasury market is approximated using data on daily average volumes from FINRA and qualitative information from Fed 2018 and Fed 2020.

IV. THE EXPANSION COMES WITH BENEFITS

It is widely recognized that the new rule can offer substantial benefits, which include:

- **Lower counterparty and settlement risk with uniform risk-management practices**. By designating the FICC as the counterparty in every trade, the new rule would standardize margins, uniform execution and settlement operations, and implement rigorous risk management processes. This approach is expected to increase the efficiency and the resilience of operations, minimize settlement fails, prevent defaults and, consequently, mitigate risks of asset fire sales.
- **Balance sheet relief for dealers.** The rule mandates practices such as segregating customer margins, which can help reduce balance sheet needs. At the same time, large benefits come from multilateral repo netting (when transactions are aggregated and offset against each other, which reduces overall settlement obligations), and the reduction of settlement fails through uniform risk management practices. A recent New York Fed paper estimates that central clearing could lower dealer's settlement obligations by up to 70%.
- **Increased transparency and competition.** Monitoring the CCP activity (volume and counterparties at minimum) would provide new insights into Treasury market trades, such as Hedge Fund trading and positioning, and PTF activity, which have more limited visibility under the current market structure. Increased transparency and system stability can encourage more market participants to actively participate in the market.
- **Reduced systemic risk, increased resilience, and improved liquidity.** The combination of the benefits mentioned above can ultimately increase the market's core attributes of safety and stability, expand its intermediation capacity, and ultimately increase market liquidity.

V. BUT ALSO INVOLVES IMPLEMENTATION CHALLENGES AND VARIOUS COSTS

A. Access to FICC will need to be expanded, with additional operational and insurance costs

The rule will substantially increase the need of market participants to access FICC clearing. Indirect methods of access will expand further, notably the sponsored repo practice. Direct access is also expected to expand, as PTFs and certain Hedge Funds are required to register as dealers based on a February 2024 SEC rule.[14] In March 2024, the FICC has proposed adjustments to its practices to allow for all trades within the scope of the rule to be cleared. However, there are costs associated with this expansion and limited understanding of the options available.

- **Market participants need to understand and choose an access model.** Newly eligible market participants will need to choose the access model that best fits their needs. However, an FICC survey showed that members need to become more familiar with the access models offered by the FICC and are still uncertain about the preferred model on the way forward. The process is evolving, following the March 2024 FICC proposal.
- **Market wide practices may need to be streamlined for access to become fast and efficient.** In the same FICC survey, market participants noted the need for document standardization between clearing members and their clients, as establishing indirect FICC relationships can be a long process.
- **The costs associated with each access model may change as access expands.** Typically, dealers bear most, if not all, of the access costs in the sponsored model, which has been so far the prevailing practice for non-member participation in the FICC. However, dealers may be reluctant to do so in case of large scaling up of sponsored activity. Therefore, trade counterparties in the sponsored model may need to move towards sharing associated trade costs, potentially leading to higher fees or spreads charged by dealers to non-member clients.
- **The need to expand central clearing may lead to more CCPs entering the market.** The CME Group has plans to file an application to become a Treasury clearer. This movement might enhance competition between venues for the business of Treasury clearing, potentially reducing clearing costs for investors.

An increase in the insurance costs against member default is also a concern for investors. The FICC is protected from member defaults through member contributions to the capped contingent liquidity facility (CCLF).

[14] The SEC estimates that the number of firms required to register due to new dealer rules would be 13 to 22 PTFs and up to four hedge funds.

Sponsored or correspondent indirect members should not contribute to the facility under the pre-SEC rules, but their trades increase the eligible volume of transactions for direct members liable for the contributions. Some market contacts note that higher trading volumes may translate into higher costs. But others note that such costs can be mitigated if direct members balance their matched book trading, expand their number of counterparts, and term out their funding trades. Scaling up of the FICC operations through the adopted SEC rule is conducive to such activities. Conversely, larger directional trades, concentration of large trades with fewer counterparts and maintaining overnight trades can increase intraday liquidity needs of the FICC, which form the basis of the CCLF contributions.

B. Crucially, the SEC rule involves higher trading costs

Beyond the operational costs of the expansion, market participants focus on the increased trading costs and their implications. Notably, transactions that move to central clearing from bilateral clearing will be subject to uniform risk-management practices and are likely to face higher margin requirements and haircuts.[15]

As a background, the following considerations are relevant:

- **Uncleared bilateral repos, the largest repo market segment, has featured very low haircuts.** There are stark variations in haircut practices across repo markets. Cleared repo transactions and most tri-party repo transactions typically command a haircut of around 2% for Treasuries. However, haircuts rules are ad-hoc in uncleared bilateral repo transactions. A recent Federal Reserve Board study showed that hedge funds face low haircuts on their repo financing transactions, with nearly 75% of repo volumes transacted at zero or negative haircuts, notably by hedge funds with higher than average leverage. The results are further supported by FSOC analysis.[16]
- **The appropriateness of thin haircuts in uncleared repo markets are the subject of ongoing debate.** On the one hand, policy makers consider appropriate haircuts a cornerstone for financial stability.[17] Thin haircuts facilitate the accumulation of significant leverage, an important vulnerability in times of stress.[18] For example, thin haircuts facilitated heavy leverage by Hedge Funds in their basis trades in the period up to the pandemic crisis, which is thought to have contributed to tensions in the Treasury market in March 2020.[19]
- **On the other hand, market participants see considerable value in low haircut practices**. According to market contacts, zero haircuts do not suggest that risk management considerations are waved. Instead, they are the practical implication of a more holistic approach to assessing client risk, where lenders price the risk of portfolios with the same customer across markets (i.e., repo, swaps or futures). Accounting for all exposures may allow the lender to provide the repo portion at zero or even negative haircut. Recent OFR analysis suggests that the uncleared repo segment offers flexibility in terms of margining practices, which partly explains why the uncleared sector of the repo market is so large.[20] Moreover, an additional benefit for large dealers offering zero haircut to end-users is that the choice of the trading venue (sponsored clearing or bilateral) rests with the dealer.

[15] Concrete guidance on margin costs is yet to emerge. The SEC rule did not firmly introduce a minimum haircut on repo transactions and did not specify which part of the trade (member or client) will fund the haircut. Some market participants note that, under the current rule, the burden of setting margins/haircuts will continue to lie with the FICC, while others expect recommendations on minimum haircuts from the Office of Financial Research and the FSOC.

[16] See IAWG (2023) with reference to the results.

[17] Haircuts are seen broadly as safety buffers that protect lenders against potential losses if the collateral value in repo trade declines. Haircuts also reflect counterparty credit risk and are thus important credit risk mitigants

[18] See SEC rule (2023), Banegas and Monin (2023) and IAWG (2023)

[19] In this trade, Hedge funds sell futures forward (build short positions in futures), matched by purchases of Treasuries (long positions in the cash market). Hedge Funds rely on the repo market to finance the cash leg of the trade.

[20] According to a pilot study conducted by the Office of Financial Research (OFR), the popularity of non-centrally cleared bilateral repo (NCCBR) is attributed to greater flexibility in collateral and tenor availability, and more flexible haircuts and margining practices. The analysis shows that access to the central clearing market does not appear to be the primary reason for NCCBR activity. The study highlights the diversity of collateral, with a predominant presence of US Treasuries. It also reveals longer tenor repo activity in NCCBR compared to other segments. Notably, haircuts in bilateral repo are lower due to netting packages, with 74% of US Treasuries having zero haircuts. See Why Is So Much Repo Not Centrally Cleared? | Office of Financial Research

Markets and the FICC acknowledge elevated costs, with potentially negative implications on the Treasury market:

- **Moving clearing activity to the FICC would, in practice, introduce minimum haircuts and increase margin requirements.** The FICC calculates haircuts and margins via a Value-at-Risk (VaR) model, aiming to cover 99% of projected losses under the assumption of a three-day liquidation period.[21] According to FICC calculations, bringing an additional $1tr in repos for clearing, assuming the additional clearing activity was novated via the sponsored model, would result in a $26.6bn increase in VaR charges. While this represents a significant increase compared to the $9.6 billion in VaR charges for sponsored member activity in the first half of 2023, it is still lower than the margins held by other major central counterparties. Investors note that the FICC estimates are based on a subset of market participants and speculate that the increase could be larger.
- **Relationships between dealers and their clients can mitigate some of the cost.** Market contacts indicate that relationships between dealers and clients play a role in setting the level of haircuts in their trades: It is more likely for dealers to pass-down the full haircut to clients with more one-directional, smaller and less diversified trades, where the netting opportunities are also smaller. Consequently, effective haircuts maybe lower compared to the minimum haircuts established by the FICC. Reflecting this development, an FICC survey showed that most members are planning to include a limited part of the client-related margin as a debit in their reserve formula.
- **But overall, market contacts caution that an increase in haircuts translates into higher cost of intermediation and leverage, potentially impacting activity in the Treasury market.** A Federal Reserve Board study estimates that an hypothetical 200 bps minimum haircut on Treasury repos would require Hedge Funds to double the existing capital levels.[22] The study also argues that Hedge Funds would broadly be able to meet the additional capital requirements from their liquid assets, with negligible impact on the market. However, market participants argue that higher costs would reduce leverage, particularly for smaller funds and potentially lead to further consolidation in the Hedge Fund industry. Some highly levered or low-margin trades, such as basis trades or relative value trades, may become unprofitable, leading to larger market dislocations before Hedge Funds take action, and therefore wider spreads in repo markets, fewer trades and a decline in market liquidity. In addition, higher costs of repo funding could result in greater yield variability among off-the-run Treasuries, which require more balance sheet space.

VI. BROADER MEASURES TO INCREASE TREASURY MARKET RESILIENCE

The SEC rule is expected to be one of the most consequential regulatory steps taken to strengthen Treasury market resilience. Yet, for some market participants, the balance between the benefits and costs is not entirely clear. Some market participants consider that the process faces significant challenges that may offset some of the benefits. For them, operational challenges related to expanding the infrastructure for access to all counterparts are important, but they remain primarily concerned about the costs of central clearing (access and margins). The additional costs could increase the costs of repo funding and leverage, and potentially push smaller dealers and Treasury market participants out of the market. These costs can offset some of the balance sheet gains and lead to less arbitrage and smaller market participation which could impact market liquidity. In addition, concentration risks around a too-big-to fail CCP are also a concern.

The SEC rule is not considered a panacea by market participants and policy makers. It is an integral part of a larger regulatory and policy process to enhance the resilience of the Treasury market. Policy makers, researchers and market participants have engaged in extensive efforts to analyze and amend current practices to increase the resilience of the market and its participants. There are various ongoing areas of policy focus, such as improving data quality and availability, increasing transparency and oversight, safeguarding intermediation practices (for example with the introduction of the Standing Repo Facility of the Fed, or by considering the benefits of all-to-all trading for off-the-run securities), reducing leverage and liquidity management practices in non-bank financial institutions (such as Hedge Funds and MMFs) and supporting liquidity (i.e., via Treasury buy-backs). Simultaneous work on these areas can facilitate and further safeguard central clearing practices.

[21] The FICC, which clears Treasury cash and repo transactions, has maintained a cross-margining agreement with the CME, which clears Treasury and interest rate futures. In September 2023, the CFTC and SEC approved enhancements to this agreement, that modify the scope of eligible products, enhance the methodology and improve default management and loss sharing. See CME-FICC overview for more information. Cross-product margining can significantly reduce overall margin costs.

[22] See Banegas and Monin (2023)

Box 1: Access models offered by the FICC

Direct clearing: In the traditional FICC operational model, trading activity occurs among direct members of the clearing house. Direct members are regulated companies with strict capital requirements.[23] Direct membership comes with costs, notably margin posting, liquidity and loss allocation obligations, which is why, typically, direct member participants are banks and broker dealers. The FICC has just above 210 direct members using its government securities clearance services.[24] Market contacts note that, while direct membership can expand further, regulatory requirements and costs create inherent limitations. Therefore, the FICC has developed less costly alternatives for funds and smaller dealers.

Sponsored clearing: In this model, direct members (i.e., dealers) sponsor their clients (i.e., Hedge Funds or MMF) transactions. Sponsoring members (direct members) submit, on behalf of their Sponsored members (the clients), transactions to FICC for novation. Originally the service was settled on a Delivery-vs-Payment (DVP) basis with tri-party settlement added lately.[25] The latter still attract much smaller volumes **(Figure 3, panel 1)**. The central counterparty and guarantor obligations of the FICC extend to both Sponsored and Sponsoring members.[26]

- **The sponsored model's popularity is growing considerably in repo transactions.** 2023 saw more than 25 Sponsoring Members and more than 2000 Sponsored members from 20 jurisdictions. Sponsored repo volumes have increased substantially since early 2023 (Figure 3 – panels 2 to 4). The rise in 2023 has been consistent with growing repo demand in a rising rate environment, e.g., from Hedge Funds in the process of funding basis trades. The continued strong growth in 2024 is evidence of growing momentum towards the implementation of the SEC rule. The popularity of sponsored repo is mainly due to the netting benefits it provides to dealers.[27]

Prime Brokerage and Correspondent Clearing: In this model, a direct member can clear trades between a client (non-member) and another dealer/bank. Non-members can thus enter bilateral trades with any FICC participant and clear the trade via their correspondent FICC member.[28] According to market contacts, activity in this model is limited to cash transactions and used primarily for small trades.

Margin calculations are different in the two indirect access models: While sponsored and prime-brokerage models have the same benefits of central clearing, including centralized risk management, centralized default management, multilateral netting, and substantially the same guarantee of settlement[29], when it comes to calculating margins, the two models differ. In the sponsored model, the margin is calculated in a gross basis, and separately for each client's portfolio. The process does not allow margin offset across clients. This is not the case in the correspondent model, where risk margins are calculated on a net basis and can be offset among clients with the same correspondent dealer, or amongst the positions of the correspondent dealer. The implications of the SEC rule on margin calculation and, ultimately, the choice of access model are still being understood by the markets.

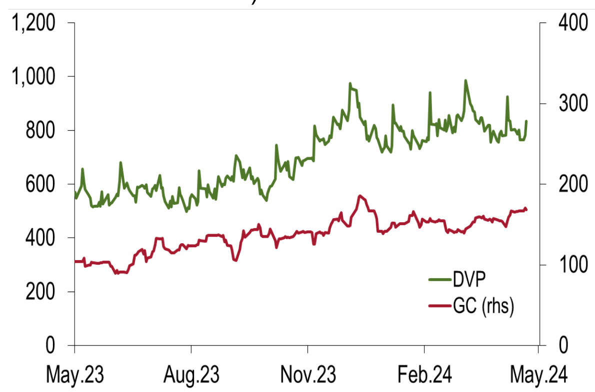
In March 2024 the FICC proposed changes **to its rule book in March 2024 to open up capacity in Treasuries clearing.** The proposal aims to, among others, clarify and enhance the prime brokerage access model, simplify qualification requirements for Sponsored members, and clarify the types of access models. Market reception by some buy-side market participants has been tepid. Those investors expect further clarifications, including treatment of customer assets in loss mutualization practices in case of a member or CCP default, and more assurances that the correspondent clearing model can provide a workable "done away" model of clearing like the one in the derivatives markets, where buy-side investors can execute trades with multiple counterparties but clear these trades via a single clearing member.

[23] Market participants need to be Registered Investment Companies (RICs) in order to be eligible for direct membership to the FICC.
[24] See FICC-GOV Member Directories | DTCC
[25] The Sponsored General Collateral Service is a special type of the sponsored clearing model, where sponsored members can settle repo in the tri-party market. Money Market Funds (MMFs), which are major liquidity providers in the tri-party repo market, have been clearing repos bilaterally though the sponsored DVP service since 2017, but have more recently added volumes also in the General Collateral sponsored repo service. Limited moves between models have also been observed.
[26] The Sponsored members are liable to FICC for their securities and funds-only settlement obligations, but Sponsoring members (e.g., dealers) guarantee all obligations of their sponsored members and cover the costs of clearing, including margin, liquidity facilities, loss mutualization and clearance fees.
[27] The sponsored model allows dealer intermediation between clients with matched trades without further burdening the dealer's balance sheet. For example, a dealer can acquire liquidity via repo from a Money Market Fund and pass it on to a Hedge Fund, in exchange of Treasury collateral provided by the Hedge Fund. A trade for the same collateral, amounts and maturity could be novated via the sponsored DVP repo service of the FICC, allowing the dealer to preserve balance sheet space. See a Feds note from Hempel et al (2023) and Aldasoro and Doerr (BIS, 2023).
[28] The direct member does not function as a bilateral counterparty in this model but is fully responsible for the trades it submits for its clients. The indirect participant, the client, has no legal obligation towards the FICC.
[29] See DTCC Frequently Asked Questions for the FICC's Government Securities Division FICC-GSD-FAQ.pdf (dtcc.com)

Figure 3: Developments in sponsored repo markets

Sponsored repo is growing, with the Delivery-vs-payment (DVP segment) driving the increase

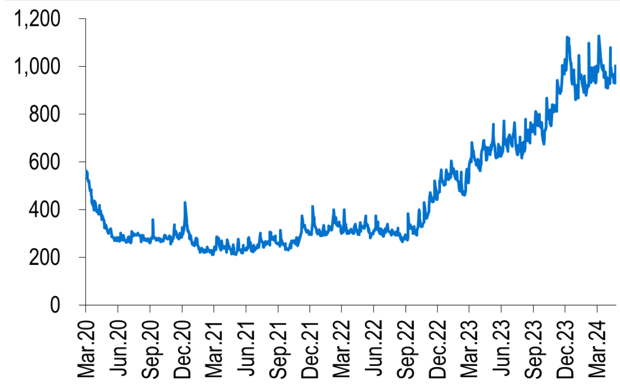
1. Total repo volumes by sponsored repo segments
(Volume in USD billions)



- Alhtough both the DvP and the tri-party sponsored repo have increased, tri-party settlement remains a small share of overall sponsored repo trades.

Sponsored repo volumes reached a peak at the end of 2023 and remain close to peak levels

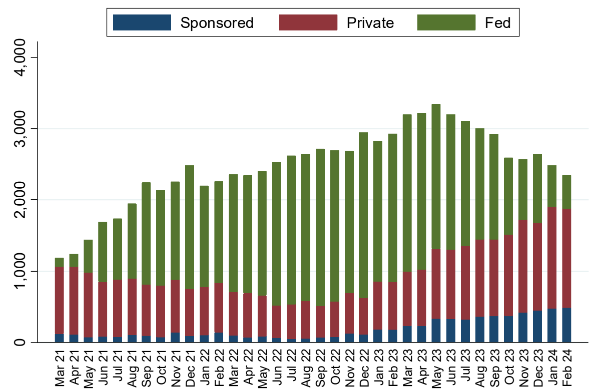
2. Sponsored repo volumes reported by the FICC
(Volume in USD billions)



- The total volume of both repo and reverse repos with the FICC increased drastically in 2023 and reached record levels towards the year end.

MMFs participation in sponsored repo in the tri-party market is growing

3. Repo volumes reported by MMFs in the tri-party market
(Volume in USD millions)

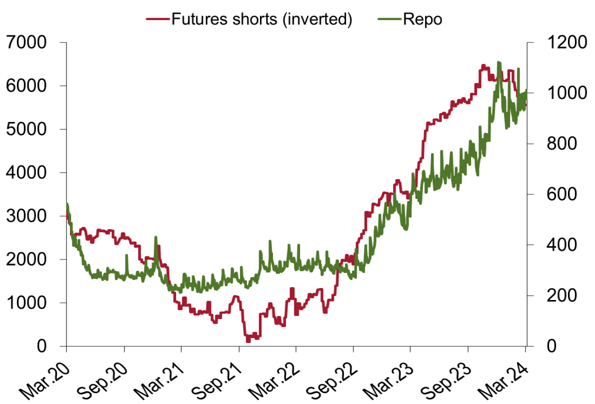


Sources: Crane date; and IMF staff calculations

- The amount of MMF repos settled with the FICC has risen considerably since 2023, alongside a substantial increase in MMF repo with dealers (private repo).
- Although sponsored repo remains a smaller segment compared to uncleared repo with dealers, it has been growing fast and will continue to grow ahead of the SEC rule implementation in two years.

Hedge Fund participation may also be growing, likely supporting basis trades

3. Sponsored repo and Treasury Futures shorts
(Volume in USD billions)



- The substantial increase in the volumes of sponsored repo since the end of 2022 likely supports basis trades by Hedge Funds. Hedge Funds rely on low repo haircuts and low repo rates to leverage their positions and increase basis trade profitability.
- Sponsored repo allows dealers to net exposures and lower the costs of providing repo to leveraged investors.

Sources: TMPG report (2019), CFTC, Office of Financial Reseach and Staff calculations.
Notes: Figure 4 presents estimates of shares based on a number of assumptions on the FR2004 data (see TMPG Report for the assumptions used). The period covered is the first half of 2017. IDB stands for Interdealer Broker platform. Hybrid Clearing is executed on an IDB platform where one counterparty is a member of a CCP and submits its transaction with the IDB for central clearing while the other counterparty is not a member and clears the transaction bilaterally with the IDB.