SMBC SMBC Group

US Rates Strategy

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February 10, 2026

Clearing and the SOFR rate

With nearly $2trn in daily uncleared repo volume set to clear next summer what will happen to the level of the SOFR rate?

- **SOFR is a volume-based median so the rate effect from adding uncleared bilateral trades to the calculation depends on the relative rate distributions of the cleared and uncleared repo markets.** But there is little available data on either market.

- Pilot data from a June 2022 study suggests that despite the large volume of uncleared bilateral activity, surprisingly little is eligible for both clearing *and* inclusion in SOFR. **Even allowing for repo market growth since 2022, we estimate eligible uncleared trades might only increase daily SOFR volume by 5%.**

- Using eligible covered transactions, Cenicola and Garriott recalculated SOFR.[1] **The fully cleared and published SOFR rates had the *same* volume-weighted medians**. But the inter-quarter range is wider suggesting the **addition of currently uncleared trades may increase daily SOFR volatility.**

- But this is a static analysis; **it does not account for how investor behavior might change the rate distribution after the mandate takes effect**.

- In theory, the balance sheet capacity released from central clearing should lower the SOFR rate. But up to 60% of uncleared transactions already net so the effect on the SOFR distribution is probably small.

- It is possible that consolidation and the externalization of FICC margin costs could widen SOFR's trading range and shift the rate range higher.

Defining SOFR

The overnight SOFR rate is calculated from data on tri-party repo and cleared bilateral (DVP) activity. Each component reflects different segments of the $6trn repo market.[2] Tri-party repo is a funding market where cash lenders are less interested in specific CUSIPs. By contrast, the cleared (and uncleared) bilateral repo markets are collateral specific. In these markets, the investor is usually looking to borrow a specific CUSIP. Mostly these issues are easy to find, so their borrowing rate is close to the tri-party general

[1] See, "How the Treasury Clearing Rule for Repo Might Affect SOFR", A. Cenicola, and C. Garriott, Office of Financial Research, US Treasury, April 22, 2025.
[2] There are a range of estimates of the size of the repo market. Keeping track of the different segments is complicated because they overlap and publicly available data on uncleared activity is sparse.

collateral rate. However, if the issue is difficult to source, its borrowing rate will trade at a premium – that is, below the general collateral rate. The Fed removes this activity from the SOFR calculation by trimming out the bottom 20% of the cleared bilateral activity by rate.

The SOFR rate excludes non-centrally cleared bilateral repo (NCCBR) transactions. But when the mandate goes into effect these trades will move into clearing and, as part of the cleared bilateral volume, be added to the SOFR calculation. **How much will the addition change the SOFR rate?**

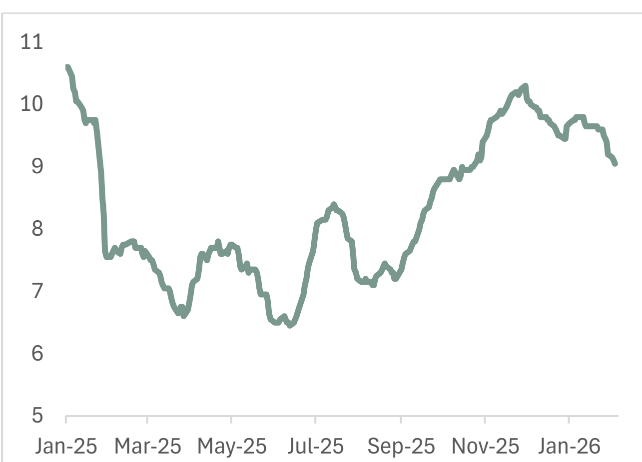
Because of how the rate is calculated, the effect of adding formerly uncleared trades to the volume mix depends on the rate distribution of these transactions. Like fed funds and the Fed's other repo benchmarks, SOFR is a volume weighted median. The Fed sorts the day's eligible SOFR transactions from the lowest rate to the highest (after excluding the specials activity). It then finds the rate corresponding to 50th percentile of the volume. Along with the volume-based median, the Fed calculates SOFR rates at the 1, 25, 75, and 99th percentiles. We use these rates to get an approximate sense of the relative rate distribution by calculating the inter-quarter range or the spread between the 25th and 75th percentiles (Figure 1).

The SOFR rate effect depends on the extent to which activity in the NCCBR market has a different rate-volume distribution than activity in the cleared market. However, the Fed does not publish rate data on cleared bilateral market and while it recently expanded its data collection of NCCBR activity, there is still little publicly available data.

NCCBR

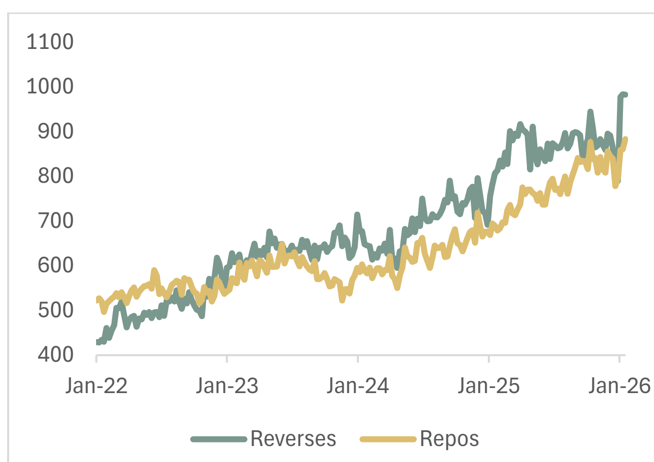
Overnight uncleared NCCBR involving primary dealers of the type that would probably need to be cleared after July 1, 2027, averaged $1.6trn in December, split roughly evenly between dealer reverses and repos (Figure 2). **But not all this volume is eligible for clearing**. Instead, there are two exceptions to the clearing rule.

Figure 1: SOFR inter-quarter spread (bp)



Note: 20d average. Source: Federal Reserve, SMBC Nikko

Figure 2: Uncleared transactions ($bn)

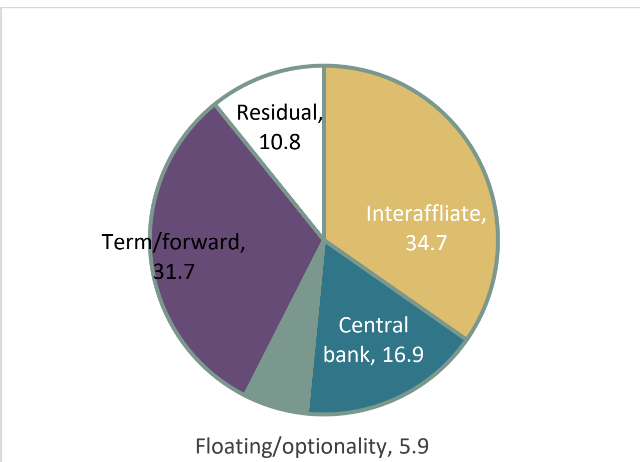


Source: Federal Reserve, SMBC Nikko

First, transactions involving official institutions like central banks are exempt from the SEC's mandate. Second, the SEC excludes inter-affiliate repo trades from the clearing mandate. Much of this activity is tied to large banks' internal liquidity management. These banks use repo to shift liquid resources across different branches and units. Inter-affiliate repo tends to be settled in tri-party and the individual transactions sizes tend to be larger than those with outside counterparties.

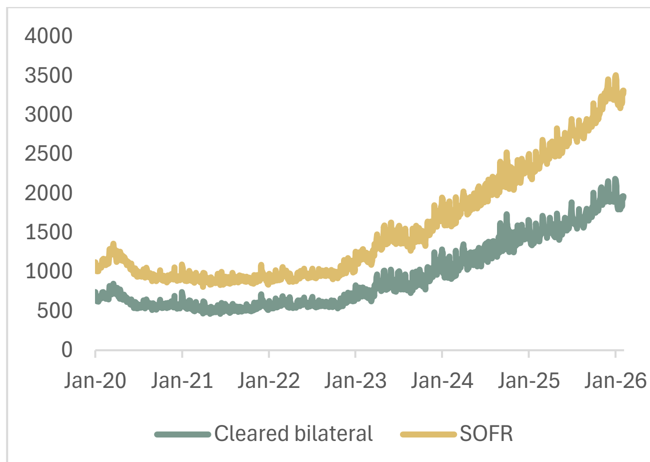
The Fed and the Treasury's Office of Financial Research conducted a pilot study to gather information about the uncleared repo market. They collected data on repo activity from nine dealers for three days in June 2022. The days were chosen to reflect coupon settlements and balance sheet reporting effects as well as a random day with neither of these effects.[3] Cenicola and Garriott use these data to sort transactions that would have been eligible for clearing if the SEC mandate had been in effect. Of the approximately $800bn/day in uncleared transactions, approximately $275bn/d were in non-eligible inter-affiliate trades and another $135bn/day were with official institutions. The inter-affiliate data are broadly consistent with 2024 volume study. Friedrichs et al. identified about $215bn/day in inter-affiliate repo – about 10% of the NCCBR market in 2024.[4] Interestingly, inter-affiliate repo activity rose to around $300bn/day in late 2024 with much of the new volume occurring at rates as much as 100bp below SOFR.

Figure 3: NCCBR composition (%)



Note: The residual share is the portion of NCCBR that is both clearing and SOFR eligible. Source: Cenicola and Garriott, SMBC Nikko

Figure 4: SOFR volume ($bn)



Source: Federal Reserve, SMBC Nikko

These data suggest that of the roughly $800bn/day in NCCBR repo reported in June 2022, less than 50% ($390bn/day) would have been eligible for clearing (Figure 3). FICC, the clearing platform for repo is (currently) unable to clear trades with floating rates or that have some optionality (for example, on open trades that are rolled day-to-day at the cash lender's discretion). Subtracting these out reduces the potential daily volume of NCCBR trades to about $340bn/day.

SOFR does not include term trades or those with forward settlements. This excludes regular (next day) settlement trades which account for most of the roughly $340bn/day reported above. Indeed, netting out these transactions leaves just $90bn/day in clearing *and* SOFR eligible transactions – or roughly 12% of the reported NCCBR volume. **Even allowing for the growth in repo activity since 2022, these data**

[3] The days chosen were June 15, June 22, and June 30, 2022.
[4] See, "Affiliate Repo and the 2024 Short-term Funding Monitor Update", M. Friedrichs, R. Mann, L. Olson, and K. Potapov, US Treasury Office of Financial Research, August 2025.

suggest that the potential net addition to daily SOFR volume might be about $160bn/day – or about 5% of current volume (Figure 4).[5]

Recalculating SOFR

Cenicola and Garriott add these transactions to those that were already in SOFR and recalculate the volume-median for the three days. **The recalculated rate, assuming the clearing mandate had been in effect in June 2022 is *identical* across all three days**. The recalculated rate has a slightly wider average inter-quarter spread, suggesting that the addition of uncleared transactions may increase the daily volatility in SOFR. Admittedly, this is a very small sample so it is difficult to draw broader conclusions about what may happen to the published SOFR rate in July 2027. **But it suggests that the rate distribution in the uncleared market while wider is like the cleared market**.

Cost analysis

Market pricing has SOFR trading about 5bp above the fed funds rate after the clearing mandate takes effect. This reflects a tug of war between competing behavioral effects that a static analysis like Cenicola and Garriott may not capture. The mandate is expected to increase balance sheet capacity as intermediating dealers can more easily net their repo longs and shorts. **In theory, the extra capacity should reduce the price of repo, pulling the SOFR rate lower**. But in practice the effect may be small. Much of the overnight activity in uncleared repo is part of naturally netting packages where the long and short repo positions are offsetting. This occurs because the dealer is facing the same counterparty and both legs have the same end date. Hempel et al. estimate that 60% of uncleared activity is naturally netting.[6]

But central clearing is not costless. Trades are VaR margined based on the FICC's risk models. Most of the additional margin cost from central clearing in programs like sponsored repo is currently borne by the sponsoring (direct) FICC member. Once the mandate takes effect, it *may* be easier for the direct member to share some of the expense with its counterparty. **However, this depends on the relative bargaining power of the dealer and the development of alternative clearing access models**. Clearing may cause some industry consolidation as some dealers find it is too expensive to be direct FICC members. This might cause some spread widening that, in turn, pushes the volume median rate higher. That said, alternative clearing access models might alleviate some of the cost pressure. For example, we expect collateral in lieu (CiL) will be cheaper for counterparties like money funds and improve their negotiating power. As a result, they may receive a higher rate on their cash. Likewise, more expensive access models, like sponsored repo with gross margining may provide more opportunity for cross product margining with the CME. These counterparties may be more willing to pay for this access – either explicitly or as a direct margin charge or through a higher borrowing rate.

As a result, while clearing uncleared activity appears to have little effect on the SOFR rate, once behavioral factors and costs are included in the analysis, it is much less clear to us where SOFR will trade relative to fed funds after the mandate takes effect in July 2027.

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[5] There are a few caveats with this estimate. We are implicitly assuming the uncleared activity has grown in line with the overall market. And the relative volumes of ineligible transactions has stayed steady since 2022.
[6] See, "Why is so Much Repo Not Centrally Cleared?", S. Hempel, R. Jay Kahn, R. Mann, and M. Paddrik, Office of Financial Research, US Treasury, May 2023.

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