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How the U.S. Treasury futures market and the basis trade could be affected by the Treasury clearing mandate: Part 2—The possible role of cross-margining

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In part 2 of this *Chicago Fed Letter* series, I delve further into the implications of the U.S. Securities and Exchange Commission's (SEC) recent mandate requiring transactions for both U.S. Treasury cash securities and repurchase agreements (repos) to be cleared and settled through an authorized central counterparty (CCP).[1] In part 1, I provided a primer on the Treasury futures market and the Treasury cash–futures basis trade and touched on the possible impact of the SEC mandate on both. Here, I explain in greater detail how the mandate could affect the cost and functioning of the basis trade. In addition, I examine the possible role of CCP cross-margining programs—which recognize offsetting exposures to similar risks across the Treasury futures and repo markets—in mitigating the mandate's impact on the amounts of collateral, or initial margin (IM), that clearing members (or their clients) will need to post at CCPs.[2]

The SEC's recent mandate to centrally clear Treasury security and repo trades is poised to reshape Treasury markets and the central clearing ecosystem. By requiring a greater proportion of these transactions to be cleared through CCPs, the mandate aims to improve the resilience and transparency of Treasury security and repo markets. However, the details of the implementation will matter for the functioning of related markets, particularly the Treasury futures market. This article zooms in on the potential impacts of the mandate on the Treasury futures market, which is closely linked to the Treasury security and repo markets through the basis trade. A key impact of the SEC mandate will depend on whether CCP collateral requirements for clearing Treasury futures and repos recognize offsetting exposures to similar risks in the two connected markets for these financial instruments.

The economics of the Treasury cash–futures basis trade, which rely on efficient collateral management and leverage, may be fundamentally altered if CCPs do not adopt or expand cross-margining programs with respect to clearing Treasury futures and repos. Cross-margining programs reduce collateral requirements by relying on a cross-guarantee between two or more CCPs that legally channels surplus collateral and includes the mutual commitment to engage in coordinated default management of any defaulting clearing member that is a cross-margining participant. Whether cross-margining is implemented

depends on both CCPs and regulators. Regulators do not mandate cross-margining but must approve any proposed arrangements to ensure they meet regulatory risk-management standards. Without the extension of cross-margining arrangements to market participants impacted by the SEC clearing mandate, collateral requirements could rise, potentially discouraging market participation and reducing liquidity in both the Treasury futures and Treasury securities markets. Conversely, effective cross-margining could mitigate these costs and support continued market efficiency.

In this article, I start by providing an overview of the SEC's recent clearing mandate. I then examine the mandate's implications for the Treasury cash–futures basis trade, focusing on the potential role of cross-margining programs in reducing the required amounts of collateral posted at CCPs by clearing members (or their clients). I conclude that, given the clearing mandate's impact on collateral requirements, without the adoption or expansion of cross-margining there may be broader consequences for market liquidity in both Treasury securities and futures markets.

The SEC clearing mandate

The SEC's new clearing mandate is intended to strengthen risk-management practices in the U.S. Treasury markets by reducing excessive leverage. A key concern among policymakers has been that many market participants currently face zero haircuts on repo transactions—which can encourage the buildup of leverage and increase the risk of destabilizing market behavior (e.g., when there is excessive leverage among market participants, forced selling and rapid deleveraging may be triggered during periods of sharp price movements, amplifying financial market stress). By requiring that Treasury cash and repo transactions be cleared through a central counterparty, the mandate aims to standardize margin practices, including the application of haircuts. As of 2023, only 35% of repo trades were centrally cleared (Nikolaou and Li, 2024, pp. 4–5). With the implementation of the clearing mandate, this share is expected to rise to 84% for repo transactions; much of the increase is anticipated from clearing market participants that conduct the Treasury basis trade (Nikolaou and Li, 2024, p. 5). The mandate is expected to align risk management across market participants and reduce the likelihood of disorderly market conditions. When a CCP guarantees the performance of a contract, it institutes risk-management measures to help ensure that both parties in the contract meet their obligations. One of the most important measures—and the one we are focusing on here—is initial margin. CCPs set IM requirements to cover changes in valuation with 99% or higher probability.

What are the current collateral requirements for the Treasury basis trade?

To reiterate from part 1 of this series, the basis, or price difference, between Treasury futures and the underlying cheapest-to-deliver (CTD) Treasury security is usually quite small (typically measured in basis points). Therefore, investors use leverage to maximize revenue opportunities. Currently, futures contracts require around 1% to 3% of the contract value as IM, allowing market participants to leverage 33:1 to 99:1 by pledging collateral to meet the minimum IM requirements.[3] For the CTD security, market participants can obtain leverage by lending the CTD security for cash through the repo market.[4] In a repo transaction, the lender of cash may require the loan to be overcollateralized (i.e., a haircut on the value of the security) to mitigate losses if the borrower were to default. For instance, if the borrower has a security worth $100, then the lender may only lend $98, which represents a 2% haircut. However, because the CTD security is hedging a futures contract (or vice versa), when a market participant uses a single financial intermediary (or its affiliate) to manage the risk of the basis trade's two legs (i.e., the futures leg and the CTD security leg financed by a repo), the intermediary may not require a haircut on the security financed by a repo given the limited market risk.

1. Collateral requirements for the two legs of the ten-year Treasury cash–futures basis trade under different scenarios

	Position	Collateral required		
		Current scenario (based on initial margin requirements as of December 31, 2024)	Scenario A (without cross-margining)	Scenario B (with cross-margining)
Ten-year Treasury futures contract	–5,000.0 (number of contracts worth $500 million in notional value)	$10,000,000	$10,000,000	$10,000,000
CTD security of the ten-year futures contract financed by a repo	$555.37 million (face value)	n.a.	$10,874,850	$10,874,850
Cross-margining reduction		n.a.	n.a.	–$15,874,850
Total collateral required		$10,000,000	$20,874,850	$5,000,000
VaR 99.7% confidence level (maximum of each tail)	Portfolio level	$4,195,873	$4,195,873	$4,195,873

Notes: n.a. indicates not applicable. In regard to the final row's label, the maximum of each tail indicates that the value-at-risk (VaR) calculation accounts for the most outcomes across the entire probability distribution, in both positive and negative directions. In risk terms, one side reflects very large losses and the other reflects very large gains. By taking the maximum from each side (at the tails) as the VaR amount, the method captures the most conservative forecast. Price data for the ten-year Treasury futures contracts and the corresponding cheapest-to-deliver (CTD) Treasury securities and their conversion factors are from Bloomberg L.P., and the required initial margin levels are from the CME Group. See note 2 for further details on initial margin.

Sources: Author's calculations based on data from Bloomberg L.P. and CME Group.

Consider a leveraged fund (as defined in note 4) that enters into a Treasury cash–futures basis trade by taking a $500 million short position in ten-year Treasury futures and a $555 million long position in the corresponding CTD Treasury security, financed through the repo market.[5] The current economics of this basis trade are shown in the current scenario column of figure 1.[6] Under the current scenario, there is no mechanism for the CCP clearing the futures contracts to recognize the offsetting risk from the CTD securities for the leveraged fund (typically a client of a CCP's clearing member). As a result, the collateral required on the futures leg does not reflect the reduced risk of the overall hedged position.

For figure 1, I used the ten-year Treasury futures contract and the applicable CTD security as a repo transaction. As the futures IM is $2,000 per contract, the total IM for the futures leg is $10 million for 5,000 contracts, or $10 million in notional value. I then used the CTD security along with the applicable conversion factor to derive a hedged CTD security position. Under the current scenario, the CTD securities hedging the futures leg have a face value of $555.37 million, and I assumed 0% IM (or haircut) on the repos of the CTD securities.

To calculate the portfolio-level risk assessment, I used ten years of historical end-of-day market prices for the CTD securities, along with the applicable conversion factors, and ten years of historical end-of-day

prices for the ten-year Treasury futures contracts. I then used a value-at-risk (VaR) methodology to estimate changes in daily profits and losses of the basis trade with a 99.7% or higher probability (i.e., with a confidence level of 99.7%). Notably, a 99.7% confidence level is in line with what many CCPs use when applying the VaR-based IM methodology to calculate IM for clearing interest rate contracts, in particular interest rate derivatives.[7] In addition, the confidence level is higher than the regulatory minimum of 99%.[8] Based on the ten years of historical daily profit and loss calculations, I estimated a VaR amount of $4,195,873 as of December 31, 2024. It is evident in figure 1 that the portfolio-level VaR amount is less than half of the $10 million in collateral that a market participant would be required to allocate for IM at the CCP for just the futures leg in the current scenario.

Given that repo transactions are expected to be cleared per the SEC's new clearing mandate and the CCP clearing the transactions will require IM, how could the clearing mandate impact the collateral requirements for the basis trade?

What is the impact of the SEC clearing mandate on IM for the Treasury basis trade?

As I mentioned previously, the policy goal of the SEC clearing mandate is to improve the resilience and transparency of U.S. Treasury markets. To support the clearing mandate, CCPs clearing Treasury cash security and repo transactions must enable users to clear transactions as clients of a financial intermediary (i.e., a prime broker or its affiliated clearing member). This in turn means the risk-management practices, particularly the IM requirements, of the CCP clearing the Treasury securities and repos, will be imposed on clients as they clear their transactions.

To provide a sense of the impact on IM for the Treasury cash–futures basis trade, with both legs being cleared through a CCP, I display in figure 1 the required IM under two potential future scenarios. Scenario A assumes there is no cross-margining, while scenario B assumes there is cross-margining. Even though IM on repo transactions is currently not standardized, I used the industry median of 2% as the IM rate for a cleared repo of the CTD ten-year Treasury security (Copeland et al., 2012, p. 6); it is expected that IM rates will vary based on the volatility and market liquidity of a given CTD security.[9]

In scenarios A and B, the IM on the futures leg remains the same as in the current scenario, i.e., $10 million. For the CTD securities financed by repos hedging the futures positions, I used the end-of-day market prices (from Bloomberg L.P.) for the CTD securities position (with a face value of $555.37 million) and multiplied it by 2% to arrive at an IM of slightly more than $10 million (i.e., $10,874,850) on the CTD security leg financed by a repo for both scenarios A and B.

For scenario A, given that there is no cross-margining assumed, the aggregate IM on both legs would be around $20 million. That amount is double the required IM amount ($10 million) under the current scenario and over four times the portfolio-level VaR assessment of $4,195,873 (under all three scenarios).

For scenario B, I used my portfolio-level VaR assessment and assumed a buffered value of $5 million as the aggregate requirement for both legs of the basis trade, which is about 20% higher than the VaR amount and implies a cross-margin reduction of $15,874,850. The amount of $5 million is illustrative, since in practice the aggregate amount the CCPs would require would be based on their risk appetite and, thus, could be higher or lower.

Nevertheless, in comparing scenarios A and B, it is evident that cross-margining would reduce collateral requirements materially—around 75% less in scenario B relative to scenario A. The absence of cross-margining would increase costs for market participants (as shown in scenario A) and likely reduce basis trading. Conversely, extending cross-margining to clients whose repo transactions are not yet cleared could save

collateral (scenario B). Given that leveraged funds constitute about 40% of the Treasury futures market[10] and participate heavily in underlying Treasury security and repo markets, market liquidity could suffer if the SEC clearing mandate reduces Treasury futures and repo market participation. Notably, this reduction could impact asset managers that put on long positions in Treasury futures and depend on Treasury futures shorted by leveraged funds (as discussed in detail in part 1).

If the CCPs do cooperate to offer cross-margining, leverage could actually increase given the potential for collateral reduction as shown in scenario B, where total collateral required is lower than in the current scenario, as shown in figure 1. The Treasury basis trade is effectively hedged from a market risk standpoint, given that price changes in Treasury futures and the corresponding CTD Treasury securities are highly correlated (as depicted in figure 3 of part 1), so the reduction in IM could be viewed as a more efficient use of collateral relative to the associated market risk.

Despite this, policymakers, such as Sarah Breeden, deputy governor of the Bank of England, have voiced concerns about elevated risks from leverage in cross-margining. In addition, the assumed joint liquidation mechanisms of CCPs offering cross-margining may introduce implicit risks, given that clearing member default management may become more complex and there may be less room for error due to collateral reduction from cross-margining. However, there is a precedent that demonstrates the ability of CCPs to jointly liquidate a clearing member's cross-margined portfolio: Two CCPs did just that during the heightened financial market stress around the Covid-19 pandemic in March 2020.[11] Moreover, since both legs of the basis trade will be cleared once the mandate is in effect, the increased transparency should provide regulators with greater visibility into the potential systemic risks in Treasury markets, including risks in relation to the leverage used by market participants to finance the basis trade.

How will CCPs support the Treasury cash, repo, and futures markets?

Up until late 2025, the Fixed Income Clearing Corporation (FICC)—through its Government Securities Division (GSD)—was the only CCP authorized to clear Treasury security and repo transactions. FICC has offered direct clearing of Treasury securities and repos to its members since 1986 and 1995, respectively. To support the SEC's new clearing mandate, FICC is expanding its offerings to include indirect clearing for its members' clients, including asset managers and leveraged funds. There are also new entrants seeking to clear transactions in Treasury markets. CME Group has established a new CCP called CME Securities Clearing Inc. (CMESC), which received regulatory approval from the SEC on December 2, 2025, to offer clearing services for Treasury cash and repo trades; CMESC is expected to launch in the second quarter of 2026. Intercontinental Exchange (ICE)—by leveraging its existing clearing house, ICE Clear Credit—is also preparing for and seeking out SEC approval to offer clearing services for Treasury cash and repo trades. Presently, the vast majority of Treasury futures are traded on the Chicago Board of Trade (CBOT) and cleared at CME Group's CCP called CME Clearing, which is regulated by the Commodity Futures Trading Commission (CFTC); however, FMX Futures Exchange is also offering trading in Treasury futures in which trades are cleared at LCH (London Clearing House).

How is cross-margining expected to be supported by the CCPs?

FICC and CME Group have partnered since 2004 to provide a limited scope of cross-margining for Treasury cash and repo trades cleared at FICC and Treasury futures trades cleared at CME Clearing for direct counterparties that are clearing members at both CCPs. Given the SEC's recent clearing mandate, they plan to extend these benefits to indirect counterparties, such as asset managers and leveraged funds.[12]

CME Group also plans to offer cross-margining of Treasury cash and repo trades cleared through its new CCP (CME Securities Clearing) with over-the-counter interest rate swaps (OTC IRS), interest rate futures (including Treasury futures), and interest rate options that are already cleared at their existing CCP (CME Clearing).[13] LCH is supporting cross-margining of Treasury futures with OTC IRS, where LCH clears the vast majority of OTC IRS and holds over $240 billion in the IM required according to December 2024 data from Clarus Financial Technology; this implies high market efficiencies if cross-margining is recognized in Treasury futures IM requirements.

As the clearing mandate reshapes market practices, it is important to examine how these various CCPs are adapting their services and cross-margining capabilities to meet the evolving needs of market participants.

Conclusion

The SEC has mandated that certain U.S. Treasury cash and repo transactions be cleared through authorized CCPs by the end of 2026 and mid-2027, respectively, aiming to improve the resilience and transparency of the Treasury markets. The clearing mandate will enhance market transparency and aims to improve systemic risk oversight with more standardized risk-management practices through the central clearing of Treasury cash and repo transactions. This change will significantly increase the proportion of cleared Treasury market transactions, especially for leveraged funds that have not historically cleared their repo transactions. At the same time, the U.S. Congressional Budget Office (CBO) projects that the amount of U.S. Treasury securities outstanding to reach 156% of gross domestic product by the year 2055. This underscores the importance of a liquid market to most efficiently fund federal debt as the amount of issuance increases.

The new SEC clearing requirement will introduce IM for the Treasury basis trade's security leg financed by a repo, increasing collateral needs and associated costs. Cross-margining by CCPs could reduce overall collateral requirements significantly. Without cross-margining, the costs of meeting new IM requirements in the repo market may deter market participants from entering into Treasury basis trades, which include a short position in Treasury futures contracts. This in turn could reduce liquidity in the Treasury futures market and negatively impact asset managers that use Treasury futures to keep their own portfolio management costs low. With effective cross-margining programs in place, the total collateral required for hedged Treasury basis trades could fall below current levels, thereby potentially making the strategy more cost-effective and attractive to conduct than it is today.

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Notes

[1] The SEC has mandated central clearing for virtually all secondary cash Treasury security and Treasury repo transactions by December 31, 2026, and June 30, 2027, respectively (there are certain exemptions, such as trades involving central banks or sovereign entities). A central counterparty is a financial institution that stands between buyers and sellers in a transaction, guaranteeing performance of contracts. See Steigerwald (2013) for a primer on central counterparties and central clearing.

[2] Futures are a type of derivative. In the Treasury basis trade, the basis (or price differential) is between a cash Treasury security and a Treasury futures contract with similar characteristics (coupon, maturity, etc.). The definitions for margin (initial and variation) and several other key terms related to central counterparty clearing are available online from the Basel Committee on Banking Supervision.

[3] For futures, the initial margin requirements at CCPs are intended to cover changes in valuation with 99% or higher probability. The leverage ratio (e.g., 33:1 or 99:1) is the total position relative to the margin requirement.

[4] Given the short time horizon of one day (i.e., $t + 1$) to settle the purchase of the CTD security, I am not including the financing or transaction cost of purchasing the CTD security. Moreover, it is common for leveraged funds to immediately finance the CTD security purchase in the repo market. According to the U.S. Commodity Futures Trading Commission (CFTC), leveraged funds are "typically hedge funds and various types of money managers."

[5] The SEC explains short and long positions in the context of buying and selling stocks, but these definitions also apply to buying and selling other financial instruments, including Treasury securities and futures.

[6] Similar calculations could be made for Treasury futures contracts at maturities other than ten years, but the interest rate on the ten-year Treasury futures contract is a widely followed benchmark.

[7] See. e.g., CME Group (2021, slide 10) and LCH Limited (2024, p. 26).

[8] See key consideration 3 of principle 6 in Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions (2012, p. 50).

[9] For simplicity's sake, I did not differentiate depending on if the repo to finance the CTD security matures the next day (i.e., overnight) or matures over the course of days, weeks, or months (i.e., term). According to my discussions with market participants, leveraged funds may prefer term repos that match the duration of holding the basis trade, but they may in practice still use overnight repos, which have greater market liquidity. It remains uncertain how the implementation of the clearing mandate may impact how repos will be negotiated and traded.

[10] Author's calculation based on data as of December 31, 2024, from Bloomberg L.P. (estimated by taking the leveraged funds' net positions divided by total contracts outstanding, which have yet to be settled, exercised, or delivered—i.e., open interest).

[11] Fixed Income Clearing Corporation (2020, p. 11, note 9).

[12] See this FAQ on the planned expansion of the CME–FICC cross-margining arrangement from CME Group (2025a); Q&A 3 covers the products eligible for the cross-margining program.

[13] CME Group (2025b, slide 2).

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