Coalition Greenwich
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U.S. Treasury Trading Market Structure (Back) in Focus

Q4 2022

Kevin McPartland is the Head of Research for Market Structure and Technology at Coalition Greenwich.

METHODOLOGY

Coalition Greenwich interviewed 34 U.S. Treasury investors between Q4 2021 and Q1 2022, and 40 in a separate study in the second half of 2021. Via Greenwich MarketView, Coalition Greenwich aggregates and analyzes U.S. Treasury trading data on a monthly basis from FINRA, the Federal Reserve, the major trading platforms, and other data sources to calculate electronic trading levels, trading protocol usage and platform market share. This report uses that data through September 2022.

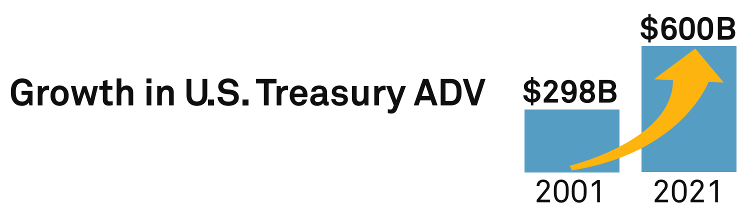
Our data suggests a market that has evolved to include a more diverse set of market participants and is more driven by investor, rather than dealer, trading

In 2022, CLOB markets accounted for only **28%** of e-trading volume and client-driven RFQ e-trading **31%**

Executive Summary

It wasn't long ago that U.S. Treasuries traded in only two marketplaces. Interdealer brokers, using humans or central limit order books (CLOBs), facilitated trades between primary dealers. Primary dealers, whether with humans or via request for quote (RFQ), facilitated trades between their balance sheets and global investors. The bifurcation was easy to understand and existed to accommodate the different trading needs of the parties involved in each market.

With the advantage of hindsight, we now know that those markets were woefully inefficient. To be fair, the U.S. Treasury market of 2006 was certainly more transparent and efficient than the Liar's Poker market of the 1980s. The post-financial crisis market of the early 2010s was still more efficient. Furthermore, the average daily volume in 2001 was $298 billion—less than half of the $600 billion average in 2021 and an even smaller fraction of the nearly $1 trillion traded in a single day in September of 2022.

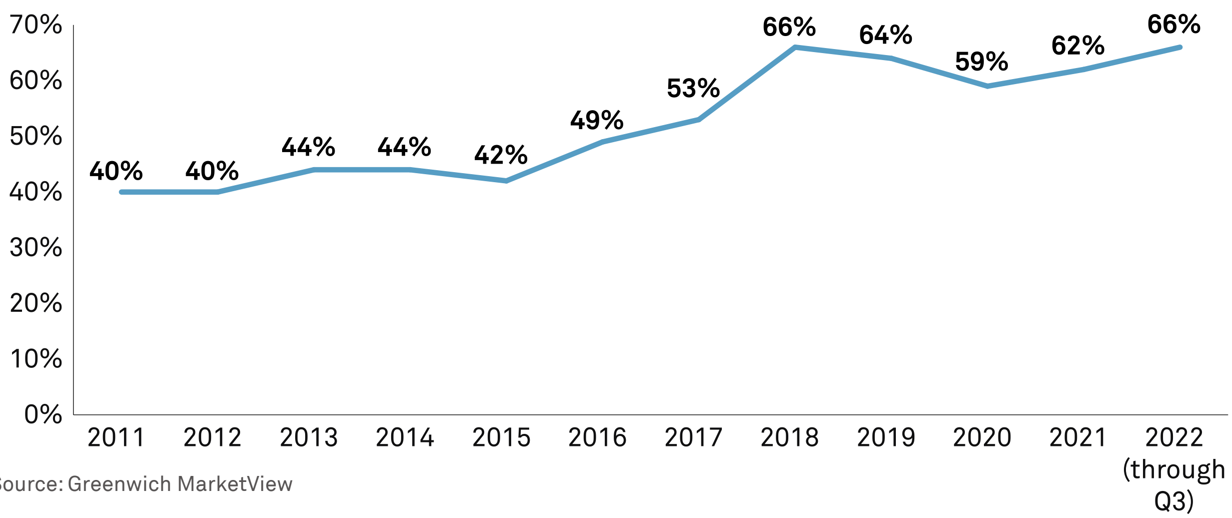


Despite this march forward, however, more efficiency can still be found. The RFQ model, albeit an increasingly automated and sophisticated RFQ, is still the most used, handling 32% of U.S. Treasury volume in September 2022. And CLOB markets, while now open to the buy side, still remain largely the realm of market makers, despite the growing influence of asset managers on market activity. Recently published research from both the New York Federal Reserve and asset manager PIMCO suggests more "all-to-all" trading would greatly benefit market liquidity going forward. Given the successful growth of all-to-all trading in other parts of the bond market, this idea is hard to ignore. While we do not have the luxury of recreating the market structure from scratch, knowing what we know today, innovative technology and a little help from regulators suggest the next step is upon us.

The Shape of the Market

Before we can think about what's next for U.S. Treasury trading, we must first talk about where Treasury markets are today. The U.S. Treasury market's most electronic month, according to Coalition Greenwich data that measures the percentage of notional volume traded via electronic channels, was August 2019, when 72% of the $600 billion ADV traded electronically. That month saw dealer-to-dealer trading account for 36% of the total market volume with over 42% of traded notional executed on interdealer-focused (CLOB) platforms (which was also a record).

U.S. Treasury Electronic Trading—Percent of Notional Volume

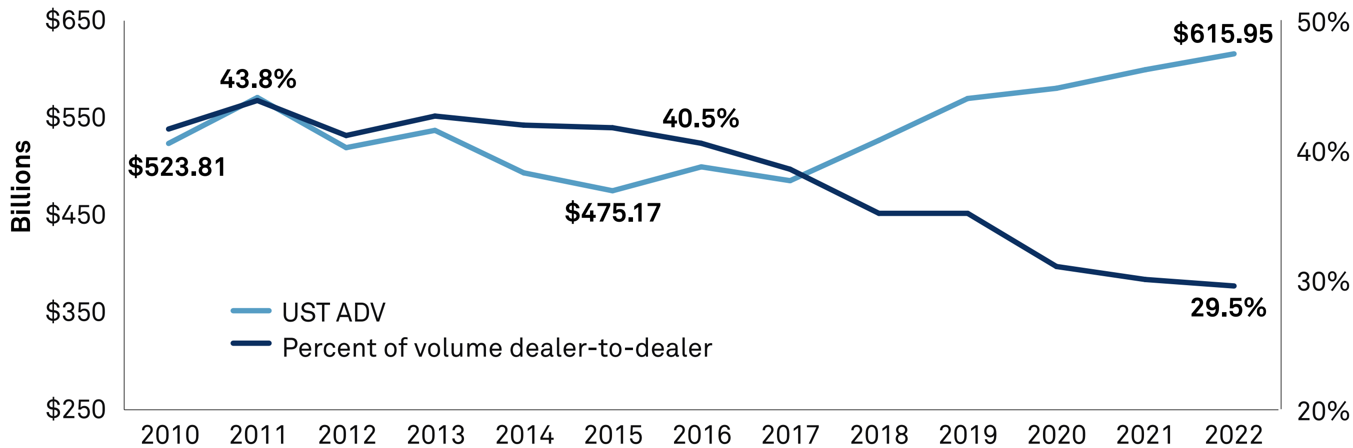


Source: Greenwich MarketView

Fast forward to 2022: At the end of Q3, 66% of volume was traded electronically, six percentage points below the peak. On the surface, that might read as a step backward, but a closer look at our data suggests a market that has evolved to include a more diverse set of market participants and is more driven by investor, rather than dealer, trading. Dealer-to-dealer trading accounted for just shy of 30% of the market in 2022 (down from 43% in 2013 and 49% in 2001[1]). Similarly, CLOB markets accounted for only 28% of e-trading volume in 2022 and client-driven RFQ e-trading 31% (up from 22% in 2019).

[1] Source: Greenwich MarketView, NY Federal Reserve

U.S. Treasury—ADV/Percent of Volume Dealer-to-Dealer Trading



Source: Greenwich MarketView, Federal Reserve Bank of NY

It would be disingenuous to talk about the state of U.S. Treasury trading without also mentioning the importance of dealer-client relationships. Trading of large blocks and less-liquid instruments over the phone is still a significant part of the market, particularly during periods of volatility. March 2020 and the majority of 2022 showed that electronic trading can hold its own in volatile markets, but the reassurance a trading counterparty can provide via bilateral communications—whether phone or chat—remains an important part of the market structure.

Lastly, there continues to be notable differences between the trading profiles of on-the-run and off-the-run U.S. Treasuries. While the former are seen as largely transparent and liquid, the latter remain more opaque, with less liquidity (and therefore less electronic trading). The percentage of market volume accounted for by off-the-runs has dropped since the start of the pandemic panic. In 2020, off-the-runs accounted for about 28% of market volume; in 2022, only 24%. This is likely a sign of the liquidity strains in U.S. Treasuries amid the Fed's extreme tightening, further driving market participants toward more-liquid on-the-runs.

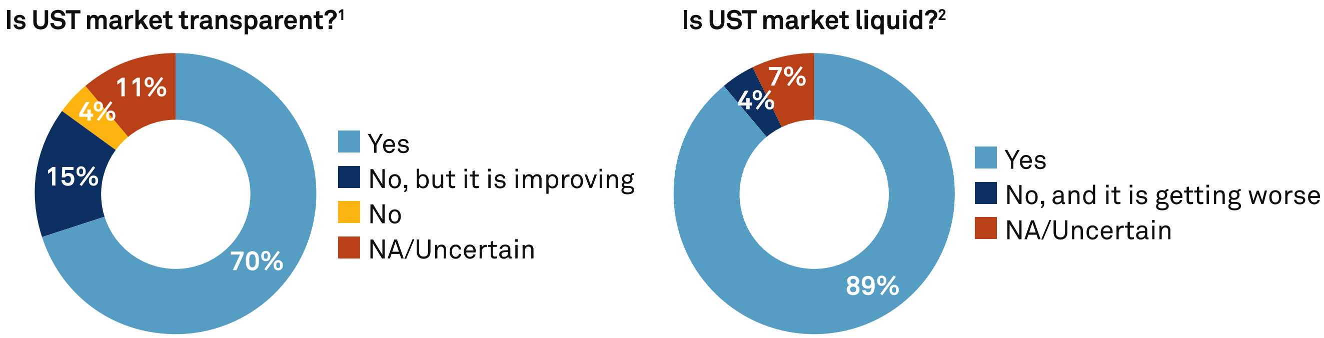
It is hard to state with certainty whether the digital push the pandemic provided, the Fed's hard pivot from dove to hawk or the market's organic evolution caused some or all of these changes, but with the pandemic's start almost three years behind us, it feels like the current market structure is the new baseline, with progress set to start from here.

Blurred Lines

Our research in 2018[2] found only 14% of buy-side U.S. Treasury traders felt CLOB access could help improve their execution quality, which we interpreted to mean they were happy with the current RFQ/voice market. And more recently, our research in January 2022—before the year's volatility really set in—found that nearly 90% of buy-side firms felt the U.S. Treasury market was liquid, and 85% felt the market was either transparent or getting more transparent; a positive view, especially while FINRA and the SEC work to increase market transparency.

[2] https://www.greenwich.com/blog/treasury-traders-shy-away-order-books

Buy-Side Views on U.S. Treasury Market Liquidity and Transparency



Note: [1]Based on 24 respondents. [2]Based on 34 respondents.
Source: Coalition Greenwich 2021 Market Structure & Trading Technology Study

But clearly, things have changed. Given recent bouts of market illiquidity and volatility at the hands of the Fed, SEC proposals focused on clearing requirements and industry commentary asking for more all-to-all trading, we're left wondering if some market participants have become too complacent. Some SEC Commissioners certainly seem to think the market needs to change, with proposals that would require many more U.S. Treasury trades to be cleared, trading venues to register as ATSs or Exchanges, nonbank market makers (including hedge funds) to register as broker-dealers,[3] and more enhanced trading reporting that includes not only broker-dealers, but banks as well. In other words, (from recent Coalition Greenwich[4] research):

> *There is certainly room for improvement. The overhauls in the U.S. equities, derivatives and corporate bond markets over the past 20 years suggest that by comparison, U.S. Treasury markets should have more trade reporting, more central clearing and greater oversight of electronic trading venues. In other words, let's get this systemically important, deep and liquid market in line with other U.S. markets that can also be described with similar adjectives.*

The need for, and ultimate success of, these proposed rules and other ideas floated in the market lies in their details. Again, the market's progress over the past several years shows that it deserves the label of "deepest and most liquid market in the world." But let's think about some potential paths forward.

All-to-All for Today

Buy-side access to CLOB markets (that were formerly known as interdealer markets) has been on the table since Nasdaq bought eSpeed in 2013. But limited progress has been made despite the best efforts of many. Measuring the percentage of buy-side trading activity on these platforms is difficult if not impossible, given the anonymous nature of those markets. But our market research and conversations with market participants continue to suggest that "real money" activity in CLOB markets remains minimal, with most nonbank volume on those platforms coming from proprietary trading firms and quantitative hedge funds.

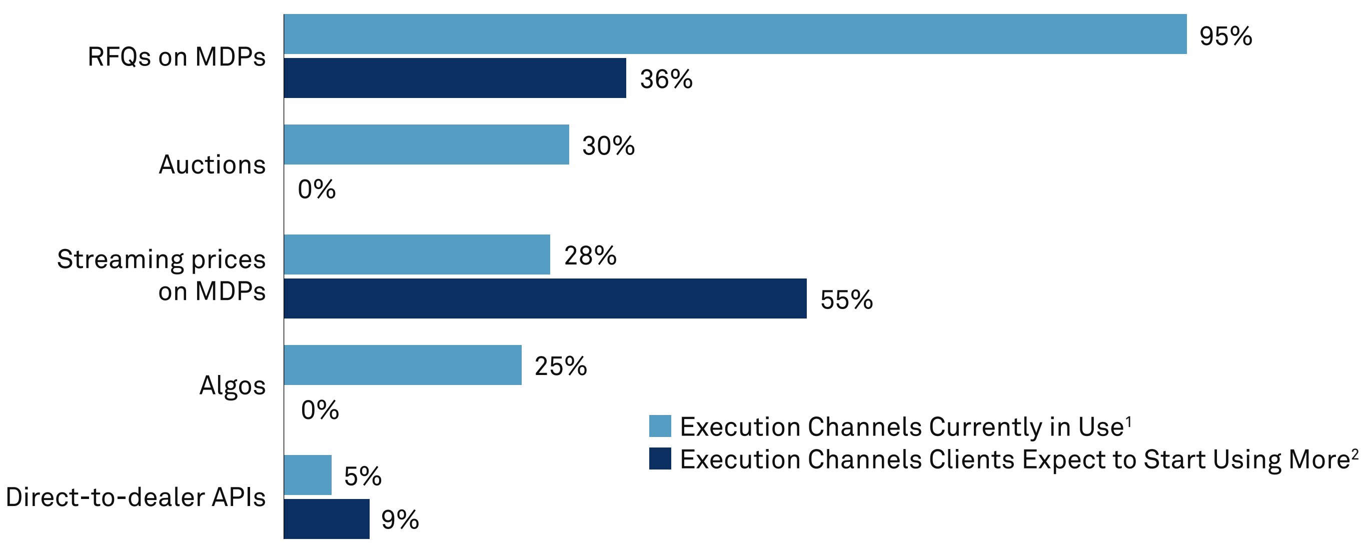
[3] https://www.greenwich.com/market-structure-technology/examining-sec-us-treasury-nonbank-dealer-registration-proposal

[4] https://www.greenwich.com/market-structure-technology/october-spotlight-us-treasury-market-continues-function-despite-volatile

Why isn't the buy side trading in CLOBs like they do in equities? For on-the-runs, bid-ask spreads are seen as so tight that an "RFQ to 5" is seen as a much more efficient way to get a block trade done, particularly when compared to executing that order over the day in small pieces. CLOB markets are driven by high-speed market makers (both banks and nonbanks), and most asset managers are not set up to trade bonds in such quickly moving marketplaces. And lastly, CLOBs were, generally speaking, not designed for the buy side. The original BrokerTec and eSpeed were developed as interdealer markets, and with market makers still the primary users, making changes to those models has remained slow and measured.

Both PIMCO[5] and the New York Federal Reserve[6] recently published papers pushing for more all-to-all trading in U.S. Treasuries, but not simply by providing the buy side access to a CLOB. This idea was also on the agenda at the annual U.S. Treasury Market Structure conference at the New York Federal Reserve on November 16, 2022. Glimpses of these ideas are already present today—trading venues that join up multiple liquidity pools with different trading mechanisms built to serve the various needs of all market participants, such as disclosed RFQs that engage with streaming quotes and the CLOB top-of-book; anonymous RFQs to all that allow both dealers and the buy side to express interest to anyone in the market looking to take the other side; virtual order books made up of counterparties selected by the liquidity taker; and auction markets that operate for both a subset and for the entire market based on predefined parameters.

U.S. Treasury Execution Channels Used and Planning to Use—Buy Side



Note: [1]Based on 40 respondents. [2]Based on 11 respondents.
Source: Coalition Greenwich North American 2021 Fixed-Income Investors Study and Coalition Greenwich Proprietary Analytics

[5] https://www.pimco.com/en-us/insights/viewpoints/in-depth/how-can-policymakers-improve-the-functioning-of-the-us-treasury-market

[6] https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1036.pdf

U.S. Treasury Markets Looking Forward

The buy side is increasingly branching out. Between 25–30% of the buy-side U.S. Treasury traders we spoke with at the end of 2021 said they are currently executing via auctions, streaming prices and algorithms (all in addition to RFQs, of course). And when asked what they plan to use more going forward, streaming prices topped the list. We see this trend in the trading data as well. Greenwich MarketView shows that trading via streaming prices, for instance, accounted for over 14% of market volume in September 2022, up from 10% in 2019.

Ultimately, the goal must be to further empower the buy side to achieve best execution. This means letting the buy side both make and take liquidity, while still allowing those clients and their dealer counterparts to trade on a name-disclosed basis when the relationship matters. These trading options must then be paired with robust data and analytics, so investors can make smart choices about execution mechanisms and counterparties.

There is not a one-size-fits-all approach. The buy side and its investment strategies are diverse, but if the corporate bond market were able to adopt all-to-all trading as part of its toolkit, then the much more liquid U.S. Treasury market should be able to get there even quicker.

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