# The Evolving Role of the EMS and Bilateral Streaming in US Rates Trading

FLEXTRADE

## Electronic trading in the $28 trillion US Treasury market is undergoing transformation, with asset managers looking to access new protocols with better prices from dealers.

Market structure is constantly evolving, with market makers and dealers both providing liquidity. US tariff shocks spiked average daily volumes by 50% year-over-year in April to $1.34 trillion, according to Crisil Coalition Greenwich—peaking at $2.4 trillion on April 9. Under stress and volatility, the market structure was tested and adapted to the demand for liquidity.

For decades, US rates trading has been split between the dealer-to-dealer (D2D) pools, in which dealers trade with one another, and the dealer-to-customer (D2C) pools, in which dealers trade with the buy side.  Although the D2D markets have opened to hedge funds and asset managers, this bifurcation of liquidity is still the norm. Most buy-side firms do not access the deepest interdealer markets or the protocols that are available to them.

The rise of non-bank liquidity providers, innovative venues and streaming prices have been catalysts for change. In addition, recent technological advances in single-dealer application programming interfaces (APIs) have enabled traditional dealers to provide bilateral liquidity directly to the buy side through execution management systems (EMSs). A similar trend toward bilateral liquidity has been seen in foreign exchange and European equities, which is now spreading to rates and corporate bonds.

This shift is happening alongside the electronification of the US rates market and the growing demand for automation and efficient execution within the buy side's workflow.

Overall, electronic trading in US Treasuries has ranged between two-thirds and three-quarters of overall volume. However, in April, e-trading in rates fell 5 percentage points year-over year to 54% of the market, as traders flocked to voice amid Treasury turmoil reported The Desk, based on Coalition Greenwich's May update. Dealer-to-client e-trading dipped 7 percentage points to 54% of the market.

More than US $400 billion of US rates trading was executed manually, reported The Desk in January, emphasizing that voice trading is preferred in the off-the-runs, larger trades and with smaller firms that lack technology resources.

Despite the recent spike in voice trading, there has been rising competition and record volumes on nearly all the electronic platforms, including Bloomberg, Dealerweb, Fenics, Market Axess, and Tradeweb, while CME BrokerTec had its highest ADNV since 2020, reported Coalition Greenwich.

Both Fenics (FMX US) and MarketAxess, which acquired LiquidityEdge to support its strength in corporate bond trading with integrated rates trading through its centralized fixed-income marketplace, have seen their volumes grow and are viewed as major competitors in the rates space.

As the buy-side looks to automate more of its orders, Daniel O'Connell, Vice President, Buy Side & Rates Sales, at FlexTrade, said: "There is increasing demand for interdealer platforms such as MarketAxess, Fenics, Brokertec and Dealerweb (a Tradeweb subsidiary) for clients to trade using an order book, or dark pools with anonymous-customizable bilateral streaming.

> Recent technological advances in single-dealer application programming interfaces (APIs) have enabled traditional dealers to provide **bilateral liquidity directly to the buy side** through execution management systems (EMSs). A similar trend toward bilateral liquidity has been seen in foreign exchange and European equities, which is now **spreading to rates and corporate bonds.**

With the buy side gaining access to new marketplaces, the lines are beginning to blur between the separate D2D pools and the D2C pools with dealers streaming liquidity and updating their prices via algorithms into both markets. This has raised questions as to whether a bifurcated market is needed for the sell side or buy side, leading to the idea that both segments of global participants could trade in the same markets.

It's important to understand the history of the bifurcation of the rates market structure in order to emphasize the significance of the change that is occurring today.

## The History of Bifurcation in the D2D vs. D2C Markets

Traditionally, fixed-income markets have been organized around dealers—large banks or securities firms and their large networks of customers. In this over-the-counter type of market, there is no centralized physical location. Instead, dealers mainly traded over the phone with other dealers or with their clients.

In the late 1990s, Cantor Fitzgerald revolutionized the market that was previously traded via voice by developing a central limit order book (CLOB) called ESpeed. Rival dealers formed a consortium called Brokertec to compete with ESpeed's enormous market share. Both venues matched trades between banks, primary dealers, and other financial institutions. Dealers entered their orders into the CLOBs, which resemble the all-to-all trading that takes place on equities and futures exchanges. Though CLOBs anonymously match trades, dealers and market makers can elect to be disclosed or undisclosed to their counterparties.

At the same time, the dealer-to-customer markets introduced their own venues. This took two forms: single-dealer platforms and multi-dealer platforms. In 1998, Tradeweb pioneered the first electronic marketplace connecting institutions to many dealers. Through traditional buy-side/sell-side relationships, institutions began to use the electronic request-for-quote (RFQ) protocol on Tradeweb (and then Bloomberg) to interact with one or more dealers. Since then, the D2D and D2C markets developed separately with their own protocols.

## New IDB Markets Emerge with Bilateral Streaming

In the early 2000s, the proliferation of principal trading firms occurred with streaming liquidity into the D2D pools such as BrokerTec, reported The Desk in 2019.

"PTFs have catalyzed a step change in the Treasury Markets, employing high-frequency algorithms to offer razor-thin spreads that banks find it hard to justify," wrote The Desk. These PTFs (in 2019) included Citadel, Teza Technologies, XR Trading, DRW and Jump Trading, it reported.

Direct streaming prices enabled the PTFs to drive change even though they didn't have the traditional buy-side/sell-side relationships. As proprietary trading firms, PTFs are known for their speed and trade for their own accounts using automated trading strategies. PTFs did not participate in D2C markets, likely due to constraints in their balance sheets as buy-side firms tend to trade in large notional sizes and PTFs only provide small size and need to replenish their liquidity quickly.

After the so-called-flash rally of Oct. 15, 2014, an extreme event when the 10-year Treasury bond dropped 37 basis points in a 10-minute window before rebounding, regulators looked more closely into the nature of liquidity provision in cash Treasuries.

According to the 2015 Joint Staff Report by the Federal Reserve and other regulators: "PTFs first gained access to electronic trading platforms circa 2004, and by 2014, they represented the majority of trading activity in the futures and electronically brokered interdealer markets."

# Acquisitions Within the US Government Bond Market: A Timeline

**1996**

**ESpeed**, an electronic trading platform for US Treasury bonds developed by **Cantor Fitzgerald**, goes live

**2003**

**BrokerTec**, originally launched in 2000 by a consortium of fourteen Wall Street bond dealers, sells to London broker **ICAP PLC** for $240 million

**2004**

**Cantor Fitzgerald** announces a spinoff of its global voice brokerage business to form **BGC Partners**

**2008**

**Tradeweb** acquires interdealer broker Hilliard Farber, then launches Dealerweb for electronic trading of mortgage-backed securities, expanding to US Treasuries and repurchase agreements

**2013**

**BGC Partners** sells **ESpeed** to **Nasdaq OMX Group** for $1.2 billion in cash and stock considerations

**2016**

**ICAP** sells its voice brokerage unit (formerly **EBS Brokertec**) to **Tullett Prebon**, renamed to **NEX Group**

**2018**

**CME Group** acquires **BrokerTec** as part of the **NEX Group** acquisition, giving it both the cash Treasury and futures sides of the US Treasury market on the **CME Globex** platform

**2019**

**MarketAxess** acquires **LiquidityEdge** for $150 million, supporting their strength in corporate bond trading, with auto-hedging and spotting directly routed to the platform within a centralized Fixed Income marketplace

**2021**

**Tradeweb** acquires **Nasdaq's** US Fixed Income trading platform, (formerly **ESpeed**)—a central limit order book (CLOB)—giving **Dealerweb** clients the flexibility to trade on-the-run US Treasuries using either the CLOB or their directed streams protocol

Following the JSR report, officials saw a need to collect more data to better understand how the Treasury market was evolving. In July of 2017, FINRA began collecting data on Treasury transactions in marketable securities from member firms, which pulled in broker dealers and most IDBs.

A new FINRA trade reporting rule took effect in 2019, which required the electronic interdealer broker (IDB) platforms used by primary dealers to identify all of their customers (including PTFs) in trade reports to FINRA's Trade Reporting and Compliance Engine (TRACE). Previously, there was a data gap in that IDBs could report non-FINRA members anonymously into a generic category, known as customers.

PTFs accounted for 61% of electronic/automated volume on interdealer broker platforms, while primary dealers and other dealers had 38%, and the buy side had an estimated 1% from April 1, 2019 to Dec. 2019, according to a Fed Notes article published in August 2020. The data also revealed that PTFs had earned 12% market share on voice/manual screens, more than previously estimated, while primary dealers and other dealers had a 76% market share, and the buy side had an estimated 13%.

## New Entrants: Single-Dealer Platforms

As PTFs emerged as competitors, in the 2000s, dealers experimented with streaming prices into single-dealer platforms (SDPs), which included Citi Velocity, Virtu (merging Getco's platform), Goldman Sachs and Morgan Stanley, among others. However, these initiatives created problems for the buy side. First, they required the buy side to integrate with each SDP which is costly from a technology development perspective, especially when the buy side is already trading with all dealers via RFQ platforms. Second, it was not clear if the buy side would have execution savings, or whether liquidity would improve, though this has changed in the current API-driven business model.

## Evolution of RFQ Markets

Increasingly, buy-side firms became comfortable with the RFQ markets, in which they request quotes from one-to-three or up to five dealers. The RFQ mechanism became embedded in the buy side's best execution process, providing an audit trail of its interactions with dealers, and it allowed the buy side to interact with trusted counterparties.

Over time, the RFQ markets became more automated and sophisticated. Some of the platforms have made changes to the RFQ protocol because the CLOB is unsuitable for less liquid, off-the run Treasury issues or non-standard sovereign benchmarks.

## Dealer Markets Advance, While RFQ Markets Stay the Course

Both the D2D and D2C markets continued to evolve independently, tailoring their needs to the sell side or buy side while building in advanced features.

In the D2D space, venues introduced smart order routing, began providing algos, and offered different tick increments than the client markets. Dealers also leveraged sweeping technology to go across pools to fill an order with partial fills, guaranteeing best execution.

By contrast, in the RFQ venues, "clients tend to execute the whole trade on a single platform with a single dealer who has the winning quote," observed FlexTrade's O'Connell.

Eventually, the D2C markets expanded their number of executing brokers and adopted new protocols such as automated RFQ, session-based trading, and click-to-trade (CTT). However, they did not allow order placement, partial fills or trading with multiple brokers on a single trade, which exist in the D2D markets.

## New IDB Venues Emerge with Bilateral Streaming

With technology advances, a new breed of IDB venues emerged in the wholesale market including: Dealerweb from Tradeweb; Fenics, the US Treasury arm of BGC Group (an affiliate of Cantor Fitzgerald, which originally introduced ESpeed); and LiquidityEdge, a Treasury trading platform with bilateral streaming, later acquired by MarketAxess.

"The two-tier structure in rates trading began to be challenged by the emergence of new trading models," reported FlexTrade's blog, "Treasury Trading Evolves with Bilateral Streaming." This was driven by banks that wanted to increase their distribution models and the growth of non-bank liquidity providers.

These new wholesale venues offered different ways for the buy side to interact with the broker's API to trade against rates liquidity. For example, the buy side could either interact directly with the broker's smart order router to trade against principal liquidity, or trade directly on the inter-dealer venue, while staying anonymous and interacting with multiple liquidity providers on a riskless principal basis. In the direct-access format, the buy side can select which liquidity providers to include or exclude and can choose whether to be anonymous or disclosed.

## IDBs Offer Sponsored-Access Model to the Buy Side

Around the same time, the banks developed a sponsored-access model where the buy side gets access to rates trading via a sell-side firm of their choosing.

In 2019, The Trade reported that interdealer brokers were looking to expand access to attract the buy side as liquidity began to move away from banks to a wider range of firms.

For the first time, the banks began offering sponsored access providing streaming prices via their SDPs to the buy side.

With sponsored access, the buy side can get access to streaming prices through one connection based on their relationship with an executing bank or broker. In addition, IDB venues now offer bilateral streaming into customized order books, enabling both buy-side consumer and liquidity provider to exclude certain firms and choose with whom they want to do business. For example, Fenics offers two different versions of its CLOBs and a private bilateral streaming book.

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> Vice President, Buy Side & Rates Sales, FlexTrade

## Broker APIs - Direct to Buy-Side Liquidity via the EMS

With improvements in technology, many brokers have introduced their own liquidity APIs with direct streaming of bids-and-offers to the buy side via EMSs. Brokers still operate their single-dealer platforms, but they can stream their prices directly into the EMSs. For example, FlexTrade's EMS integrates to each broker's API; and then it rolls out a one-to-many release for its clients, said O'Connell. This enables dealers to offer more customized streams to the buy side. In fact, dealers stream the same tighter tick increments over their SDPs that are offered in the IDB markets. They provide 'firm' prices, which take priority over the indicative prices that the buy side receives via RFQ markets.

## Today's Market Structure

Today, most trading in cash Treasuries in on-the-run coupons occurs on electronic platforms between the dealers and the principal trading firms, according to the Federal Reserve Bank of New York's report in 2023.

Riding the wave of electronic market making, PTFs such as Virtu Financial, Jump Trading and Citadel have become major liquidity providers in US government securities.

In the dealer-to-client segment, the dealers are still dominant as intermediaries, but principal trading firms have started to participate. Here the buy side mainly trades on two ATSs—Tradeweb and Bloomberg with RFQ as the dominant protocol.

Of the more than $900 billion in average daily notional volume recorded in 2024, there was about $450 billion notional traded in both the D2D and D2C markets, with 90-100% of the most liquid instruments executed electronically on ATSs.

Though liquidity is split between wholesale and D2C markets, both segments are interconnected: for every trade that occurs in the D2C markets with the buy side, dealers must hedge their risk in the D2D markets—which offer continuous pricing and algo trading The reason that dealers do not hedge in the D2C markets is due to the advantages of price and execution methods available to them in the D2D markets, said O'Connell.

Another reason causing both segments to merge is that dealers use streams to update their quotes via algos in both the RFQ markets and central limit order books (CLOBs).

## Strategic Mergers and Acquisitions

Meanwhile, a series of strategic acquisitions with interdealer venues changing hands has resulted in the consolidation of both D2D and D2C liquidity pools on a few established platforms. With BGC Partners selling ESpeed to Nasdaq in 2013, then starting Fenics; CME Group acquiring Brokertec through its 2018 acquisition of NEX Group; MarketAxess acquiring LiquidityEdge in 2019 to expand into auto-hedging and spotting which supports its strength in corporate bond trading; and Tradeweb launching Dealerweb in 2009 and then buying ESpeed from Nasdaq—the flurry of transactions has reshaped the US rates trading landscape.

Markets could continue to converge further through the ability of EMSs to aggregate continuous streaming liquidity, while centralizing access to the various IDB and D2C venues.

A Barclays Investment Bank Market Structure study released in January confirms that request-for-quote (RFQ) is the preferred protocol, with voice trading in second place, but points out that "a deeper look at rates suggests there may be a growing shift towards more streaming-type execution underway." When grouped together, the poll of 100 institutional clients (hedge funds and buy side firms) found that "streaming variants are now the third most used protocol in rates trading."

According to FlexTrade's Dan O'Connell, "Most buy-side firms are unaware of the existence or benefits of the deepest interdealer liquidity pools, or they assume that the resource investment required to participate meaningfully is significant. To effectively participate with wholesale liquidity streams, the buy side need a low-cost solution to gain access to several interdealer markets and dealer APIs in a single screen often made available via an EMS."

While the buy side wants to trade all-to-all in interdealer venues, they have concerns about going anonymous or remaining disclosed and need better analytical tools to prove best execution over the traditional form of trading, he said.

Despite these concerns, O'Connell said FlexTrade is seeing a large growing demand from the buy side to trade with SDPs and IDBs, but there are cultural and structural barriers to changing processes that have existed for the past two to three decades. However, initial entrants on EMSs are being rewarded in execution costs and brokerage savings, he said. In fact, dealers will offer price improvement when their prices are shown privately to clients, added O'Connell.

Many of the technological hurdles that prevented the buy side from aggregating the interdealer and single-dealer API-driven liquidity have fallen. As the market structure for rates trading continues to evolve, and competition between non-bank liquidity providers and dealers intensifies, electronic trading could further blur the lines that separate D2D and D2C markets.

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